



“Beeloved”

next
adjective

occurring immediately after the present one

orig • i • nal
nouns

the earliest form of something¹

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¹ 27/01/2020 presentation by Gem Barton on *The Next Original*



Building on my existing monument which is a space that raises awareness on the critical condition which bees are currently in, by enhancing their audio and enabling them to be more visible to the viewer, so there can be a personal connection between the two. Initially marrying this with veganism, I want endangered animals to be a running theme but not as tailored to one specific being. The programme would have allowed people to interact with animals with a more knowledgeable approach; somewhat like a sanctuary. However as the design progressed, I went back to what the monument was; a space which raised awareness on bees in particular through sound mainly. I want to incorporate themes from the monument but on a larger scale.

This would have been a multi purpose space which allows employers and/or volunteers to go and run educational sessions with the public. Since it is more tailored towards a specific species, this is now open to the public. The shelter surrounding the space can act as shelter at night for other animals, and during the day as a reflection area for individuals.

My ideal site would have a lot of open space around it and will also be close to the park to attract and allow bees to find their way there easily. The interior of the site can be a lot smaller than the outside space, but should still allow up to 10 people to inhabit it with ease. Before I was also looking for a site with enough space to allow a healthcare section which is disconnected from the learning sector in order to treat animals. However this is not the main focus of the project anymore, instead it is similar to a place of worship. I would have liked to have a more industrial site as that is my chosen aesthetic since the raw appearance also ties in well with the damaged state our climate is currently in. But this does not fit well with a holistic presentation. To stay true to my own ethical and sustainable style and continue from the theme of climate crisis from the monument, I will the structure of whatever site to incorporate recyclable materials and merge them in some way.

Fig 1: authors own

Site Research



Fig 2: authors own & site photographs from <https://www.brighton-hove.gov.uk/content/leisure-and-libraries/parks-and-green-spaces/queens-park>



Queen's Park is situated in Brighton and Hove and it is a grade 2 listed building which means it is a structure or space "of special interest, warranting every effort to preserve it". The park began its development in 1822 by John Armstrong. The initial planning of the area he had leased was intended to be a collection of villas, and later was sold to Thomas Attree. His intention was to use the land for his own personal use, but continue the original commercial schemes. After a couple of resales, it was finally decided in 1970 by a local campaign to open this up to the public. Attree's villa which was the only one completed was demolished and instead a lot of planting was seeded, and the park opened in 1892.

Fig 3-5: <http://www.fqpbrighton.net/park-history/>

Source: <http://www.fqpbrighton.net/park-history/>

'Tell The Bees' is a monument which elevates honeybees onto a pedestal where they should be, where those who are cruelty free in every aspect may come across this space and want to have a moment with them alone. This provocation tackles the amount of bees decreasing over time. It is a play on an 'Old Wives Tale' where a relative of the beekeeper who has passed has to go and 'tell the bees' of the incident. The casket must be picked up at the same time as they honeybees are informed.



Fig 6: authors own



Due to how small bees are, a way to amplify one of their aspect is their wings when they fly. This can be done using a sound mirror to increase the surface area which this sound bounces off, making it louder.



I am what you see,
no lives inside of me.
Like the little honey bee,
the fluffy friendly sheep,
or the fish swimming in the sea,
all living gracefully.
I will not murder shamelessly,
I want to live in harmony.

These ideas were combined and this was created. It allows the viewer to be in the bees space, and due to having the monument halfway underground, it enables the inhabitant to see the same level as bees. Far below with the grass and flowers.

Remembering the points about bees being sacred and endangered, we do not want anyone in their space as it is 'their space' only. This is when the modelling started again to figure out how it would work. This time the ball was cut straight through in order to avoid the concrete breaking.

Attracting the bees is also something which took some work. Having a mesh plate where plants can cling onto and grow is the simplest way to go about this.

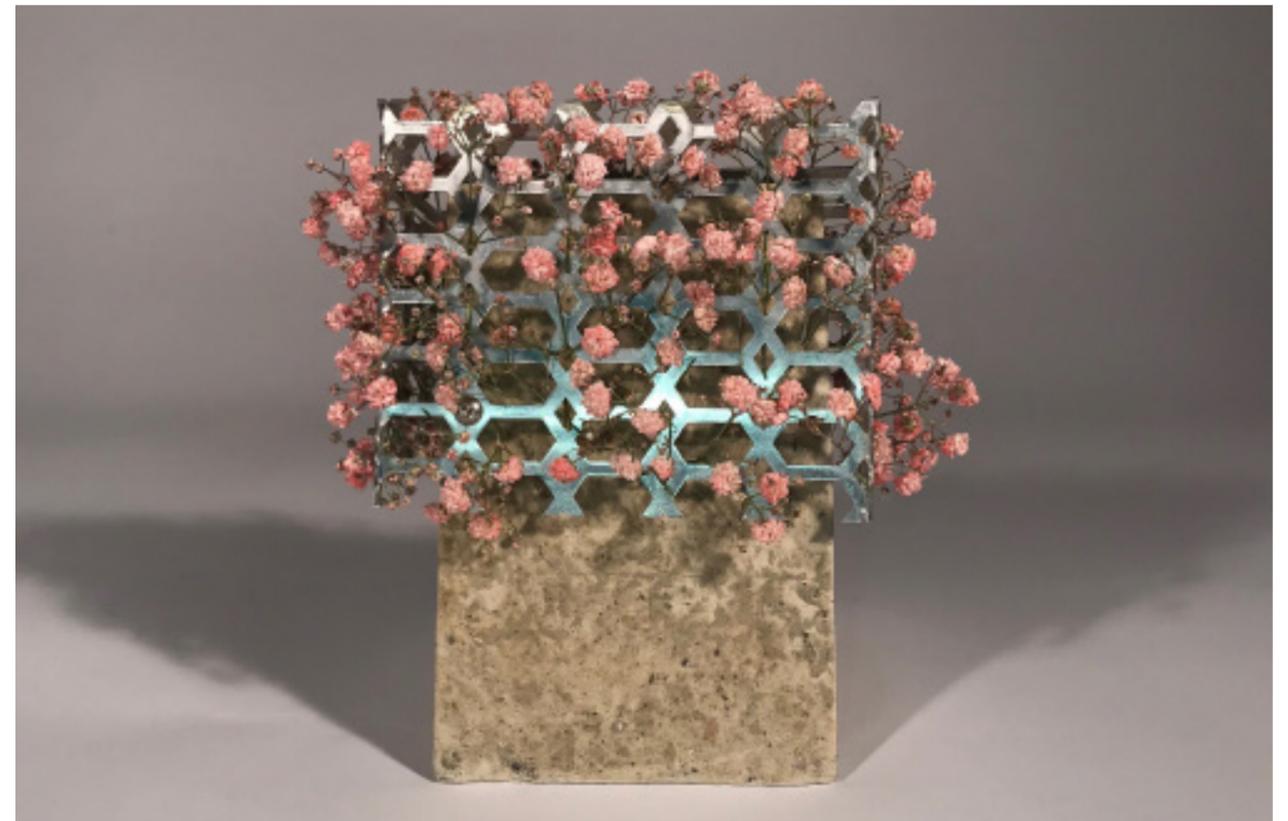
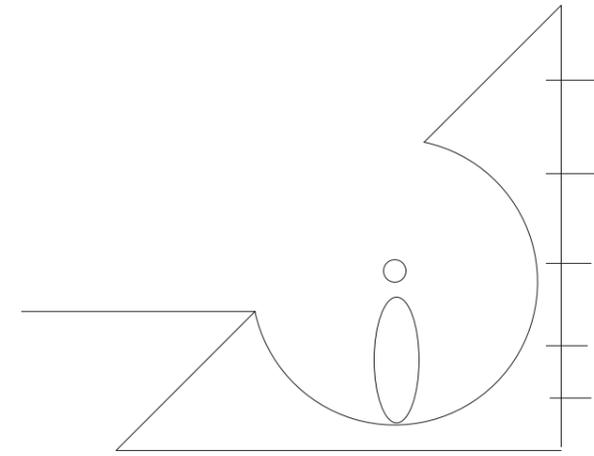
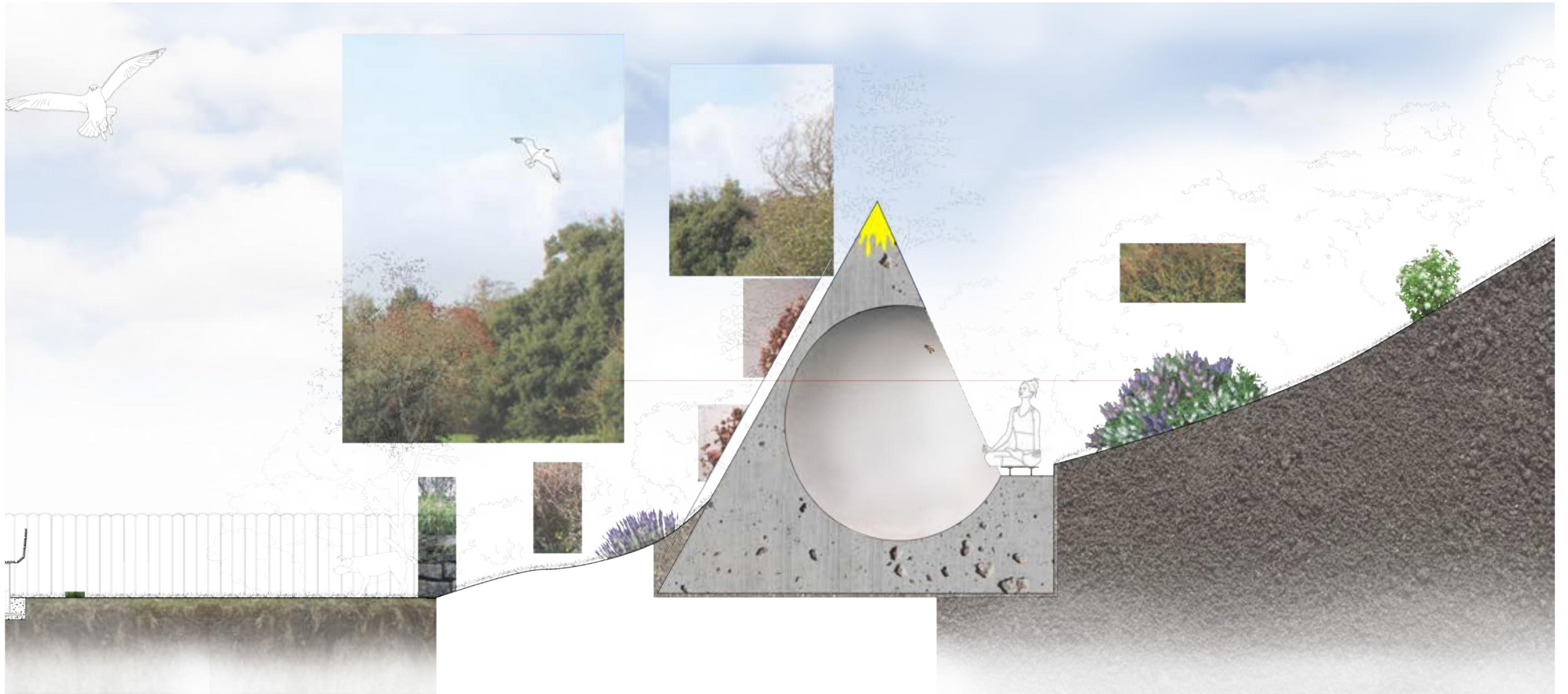
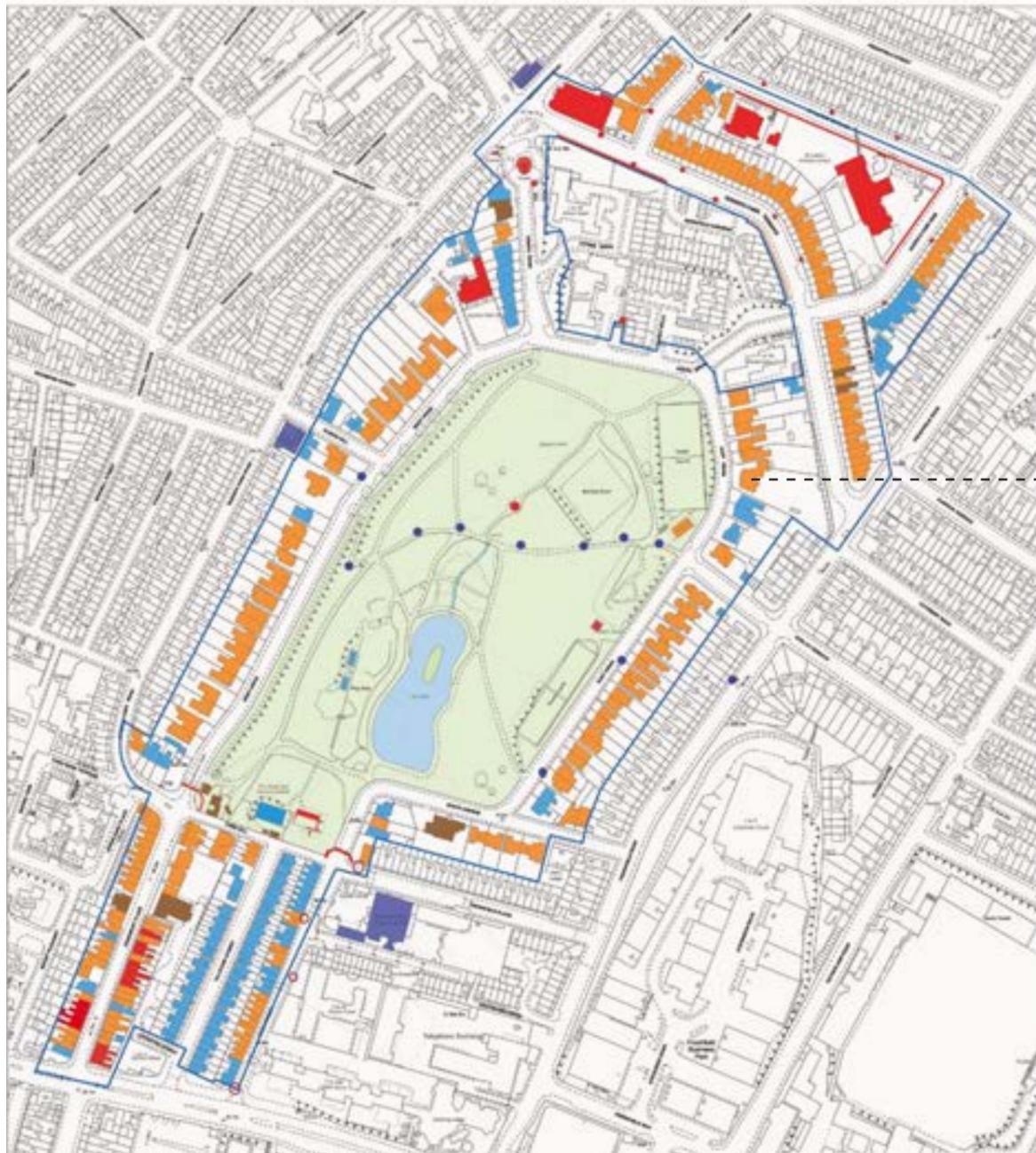


Fig 9/10: authors own



Section of monument through the bowling green (not to scale).



27 East Drive

This was the first site that came to mind when looking for a site. It is large enough for my programme and it not a listed building meaning I can make any changes I would like structurally or externally. The fact that it is attached to the house next to it is not ideal, and the location is not close enough or viewable from my monument. However after going to the park and seeing the tennis club pavillion, I found that it was a much better host that was more suited to my needs.

Tennis Club Pavillion, Queen's Park

This site is close to my monument and also fulfills all the qualities I was looking for in a site, so this will be the building I will be designing based on my programme.



This drawing shows all the possible journeys which lead to my site. The blue line shows the path from the monument to the host building (as the images shown).

Fig 13: authors own drawing & photograph



Before the Tennis Club in Queen's Park (founded in 1939), there was a couple other courts and clubs which were built in Queen's park a few decades before this club was established.

The first photograph from this site (top left from the keep) and its players was recorded in 1937 in the park. From the date it was initially established in which there was 71 members, the amount of people has dropped significantly until the 70's when it started to expand again.



Fig 14-18: <http://qptc.co.uk/club-history/> (the keep archives)

Source: <http://qptc.co.uk/club-history/>

These images are all sketches of the tension and compression within the building. The image on the bottom left shows the beams (and load bearing walls) running through the site and what seems to be the original building which seems to have been extended (blue rectangle). <http://qptc.co.uk/club-history/>

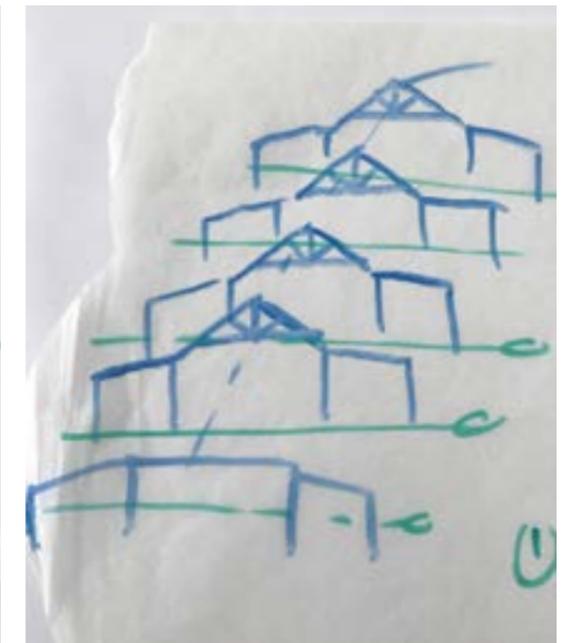
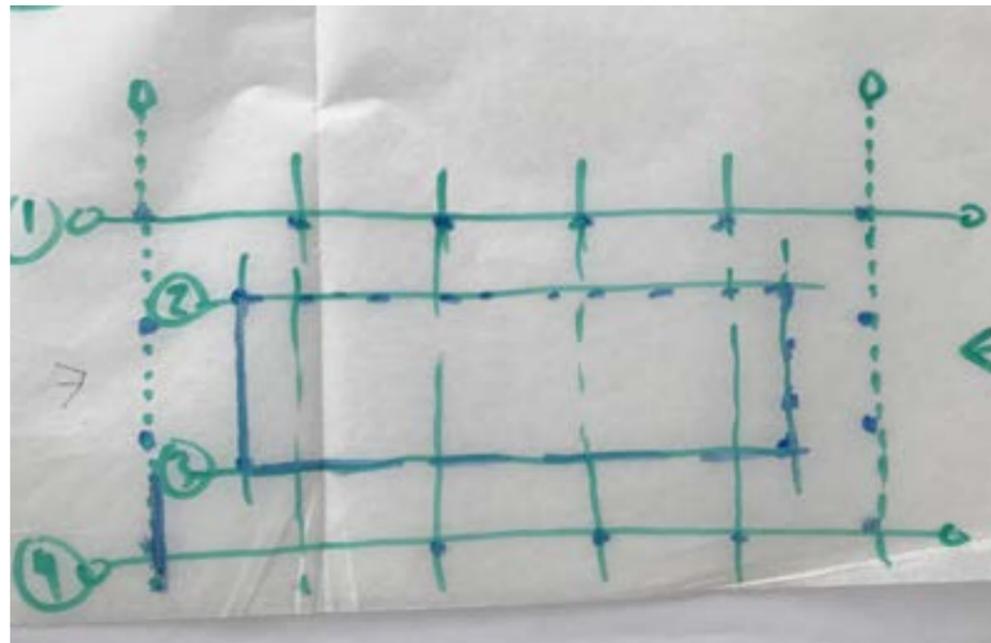
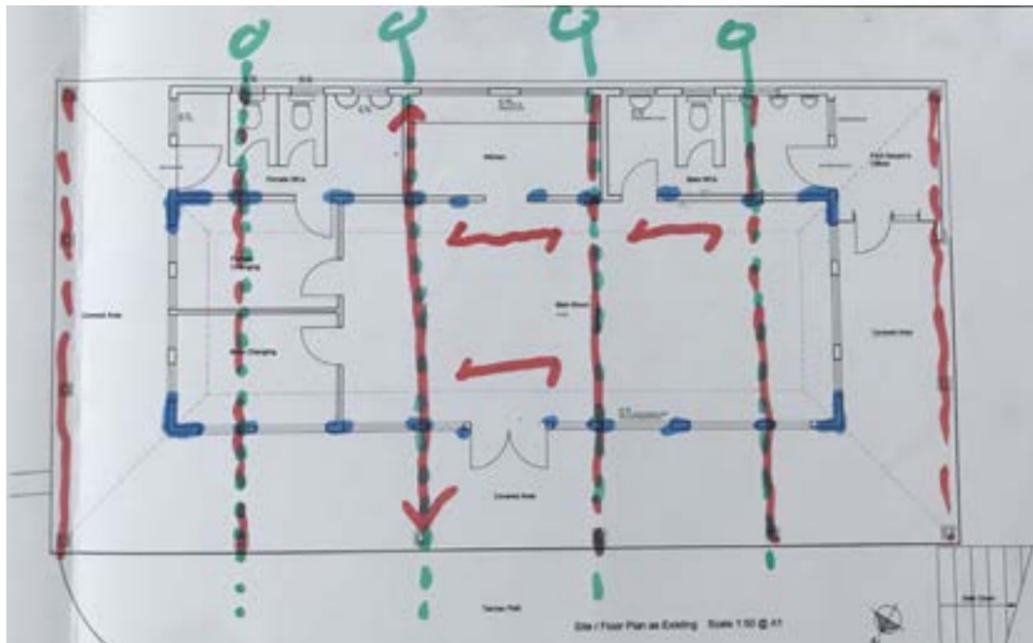
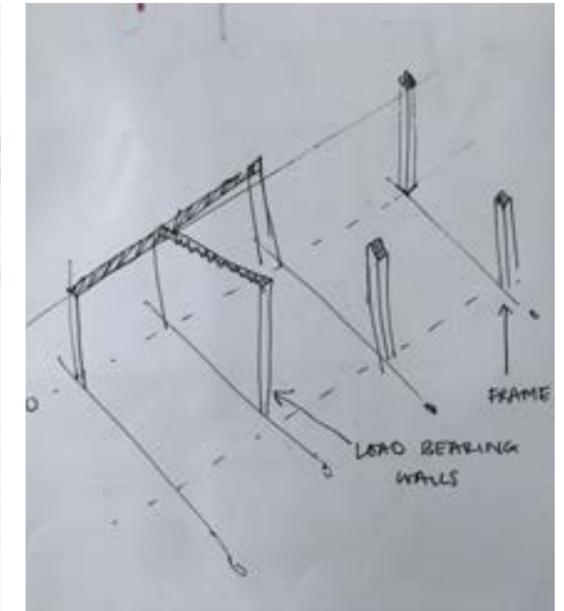
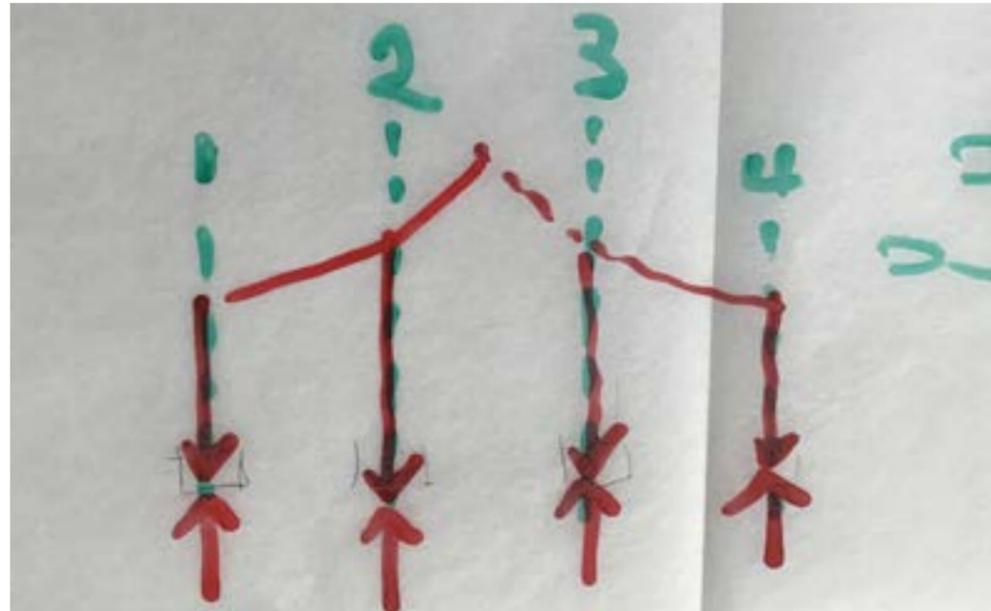
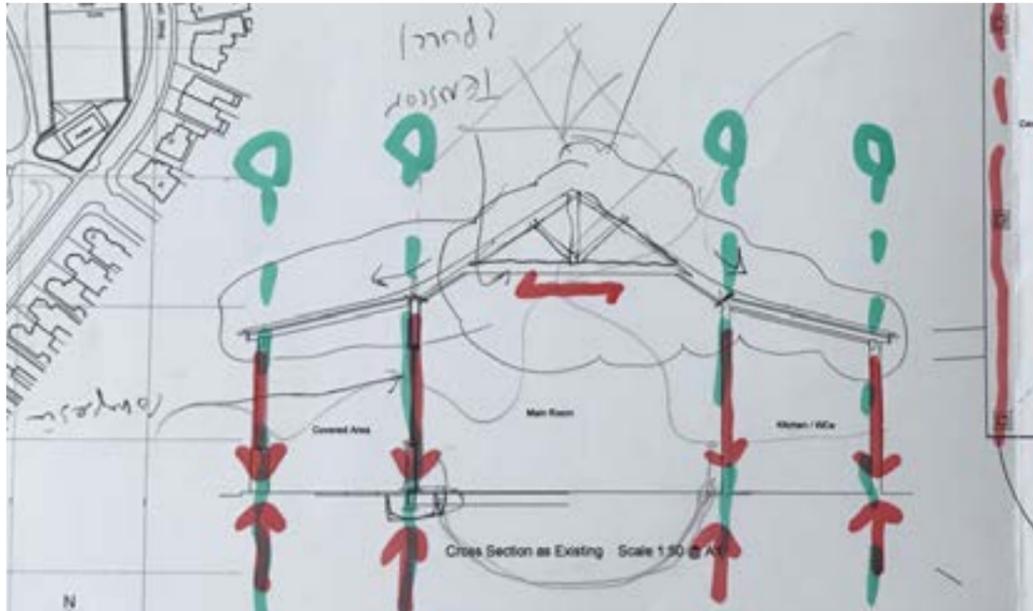


Fig 19: authors own sketches



Detailed shots of certain parts throughout the building which have been weathered or changed due to the use. This links with my dissertation in the way that buildings need to be designed for people to use, rather than expecting to stay pristine. This allows me to design with the park in mind as it'll change due to inhabitation and climate.



Fig 20: (all) authors own photographs

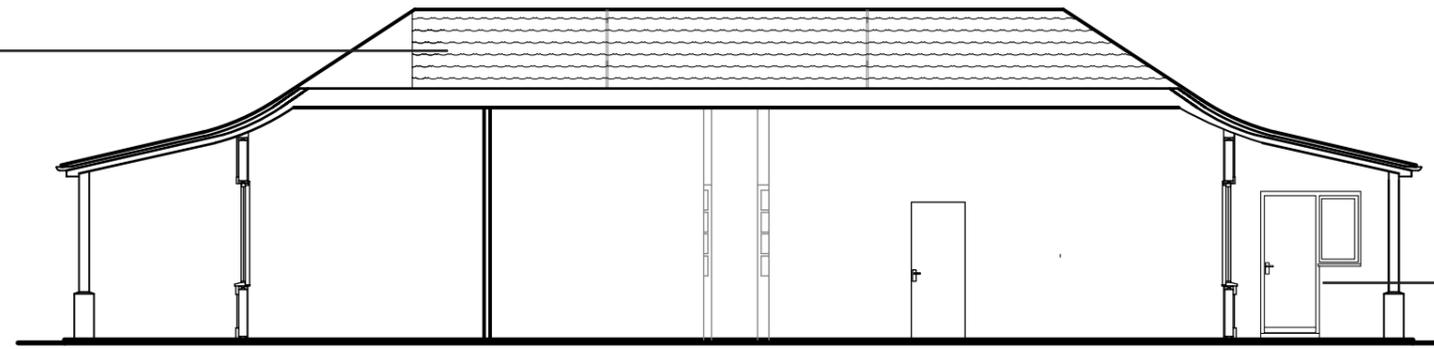
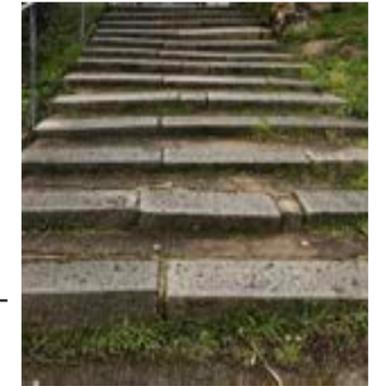
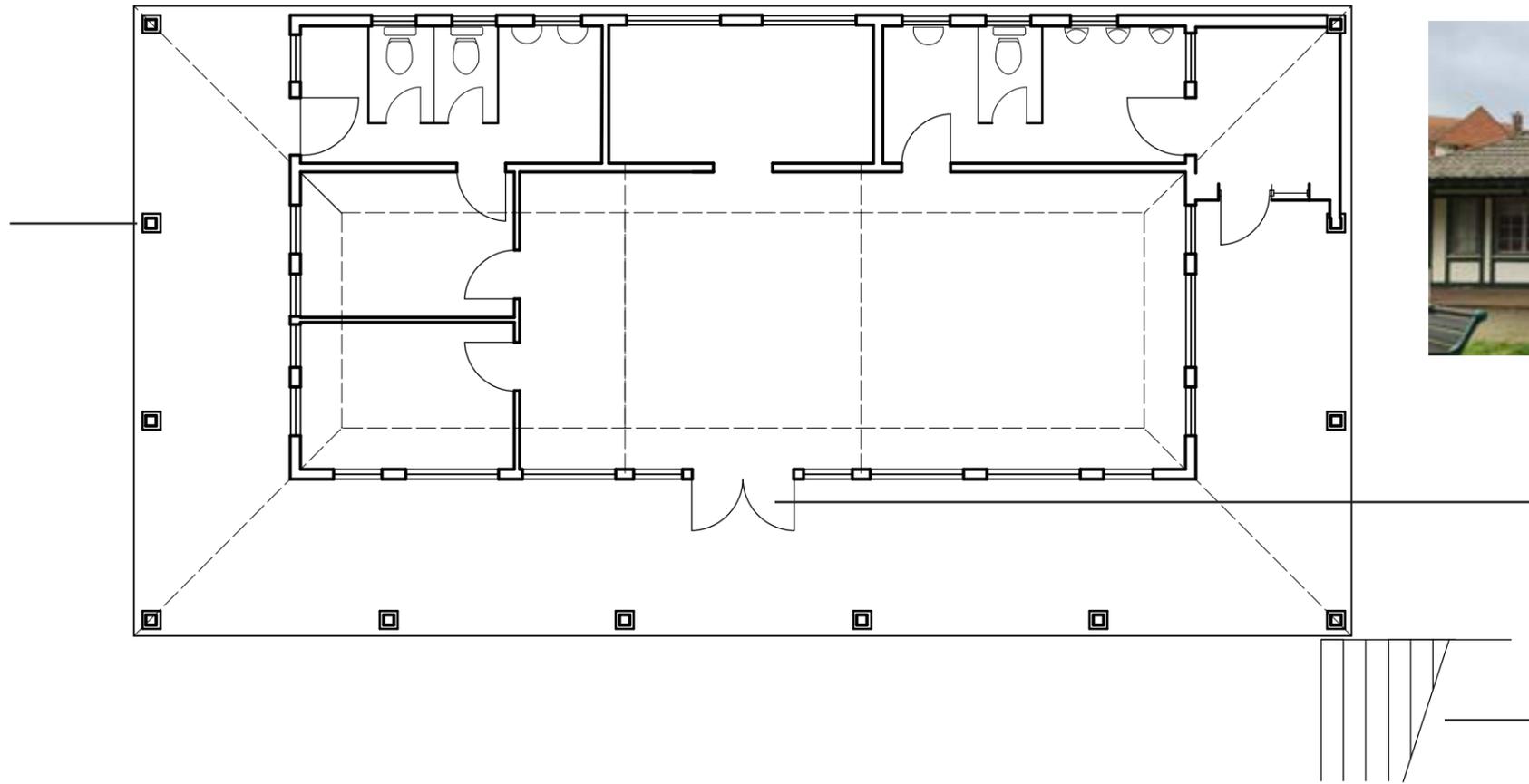


The images above show the interior of the building. Due to the way the roof is shaped, there are varying levels inside the space. The change from different rooms appear since there has been an extension added to the back of the building.



The pictures above are images taken of a building not too far from the tennis court, but there are many similarities; such as the way in which the tiles were done on the roof/ similar structure support from the posts around providing shelter. This space was within the childrens playground but seems to be out of use.

The building is constructed from timber frames including the truss. The roof seems to be clay or concrete tiling.



Plan and section of host building at scale - 1:100



If I was able to make this model in the workshop, the materials used would relate to the actual host building.

The trees in place are to scale also which gives me a rough idea of how the lighting around my host building will work and how much can enter the space.



My site model also includes the previous projects monument which is nice to have as you can see the scale of both next to each other. It gives me a better idea of the proximity of each space and how they will work with one another.



Fig 22: (all) authors own photographs

Programme Development



"In order for a beehive to successfully work they need to be able to communicate with one another. The way in which they do this comes in many forms. As small as they are, they are capable of many things which we are unaware of.

Smell: While the Queens Mandibular Pheromone (QMP) is perhaps the most well-known and important of the pheromones, even workers use pheromones to signal intent and circumstance.

Touch: They use their antennae to measure the dimensions of the cells which they build them from wax. They also move in particular ways to compose a dance or routine in which they communicate with one another. Since their sense of touch is one of the most important, they often clean their antennae with their front legs.

Sight: Having many eyes and lenses gives bees very good eyesight. "Bees excel in detecting certain aspects of the light spectrum, such as their ability to see infra-red light. Bees see color, polarized light and movement very well, but the interpretation of outlines and forms is not so strong."

“Honey bees (*Apis mellifera*) are highly social insects who live in dense colonies which is why they require a sophisticated set of senses for communication; food and threat detection. The majority of bees’ sensory organs are located in the antennae which is the first part of the bee to come into contact with scent, flavor and the physical world. Aside from the antennae, their hairs are highly useful for making sense of the world around them.

According to research by the National Institutes of Health, published in the “Genome Research” journal, honey bees have 170 odor receptors, or chemoreceptors, in their antennae. The honey bee’s sense of smell is so sensitive that it can detect the trace of a scent in flight, which helps bees to effectively and efficiently locate pollen-rich flowers. As well as for finding food, honey bees use their sense of smell to locate other bees.

They use their tongues, which contain taste buds, to detect sweet, sour, bitter and sweet (a lot more basic than their sense of smell). But since they gather lots of information from smell, enabling them to taste before the pollen touches the tongue, they’ve effectively done all of the research necessary before the sustenance reaches their mouths. Since bees provide benefit to plants, by means of pollination, plants have not evolved any defense mechanisms against bees. This means that no plants produce distasteful or harmful pollen.

The antennae can gauge dimensions for example the inside of a honey comb, they can figure out the depth and width (this helps them to construct consistently sized honeycomb cells). The ability of the antennae to sense touch is also useful for communication; bees use touch to communicate with one another during bee dances.

Bees are covered in tiny hairs, each with a nerve at the base. These hairs are sensitive to vibration; if they detect an unfamiliar vibration frequency, the bee will become alarmed. Bees also use these hairs for touch. If they’re physically touched, the nerves send a message to the bee’s brain, alerting it that it is being touched.”

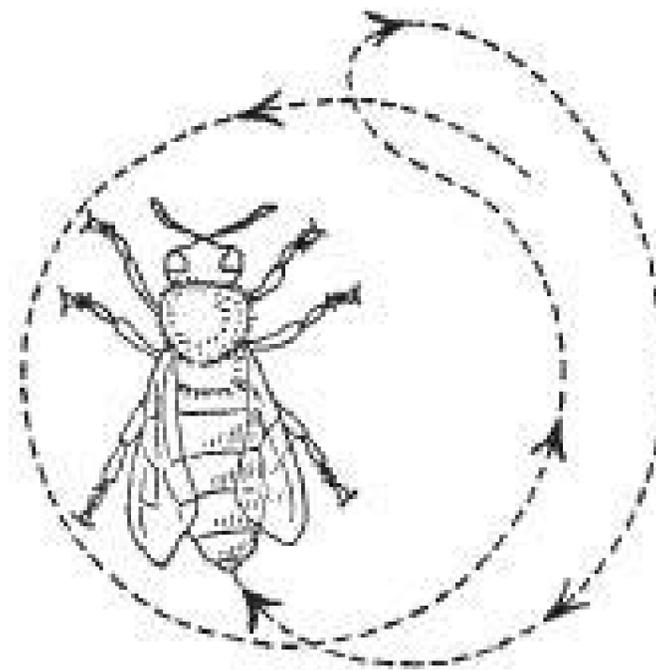
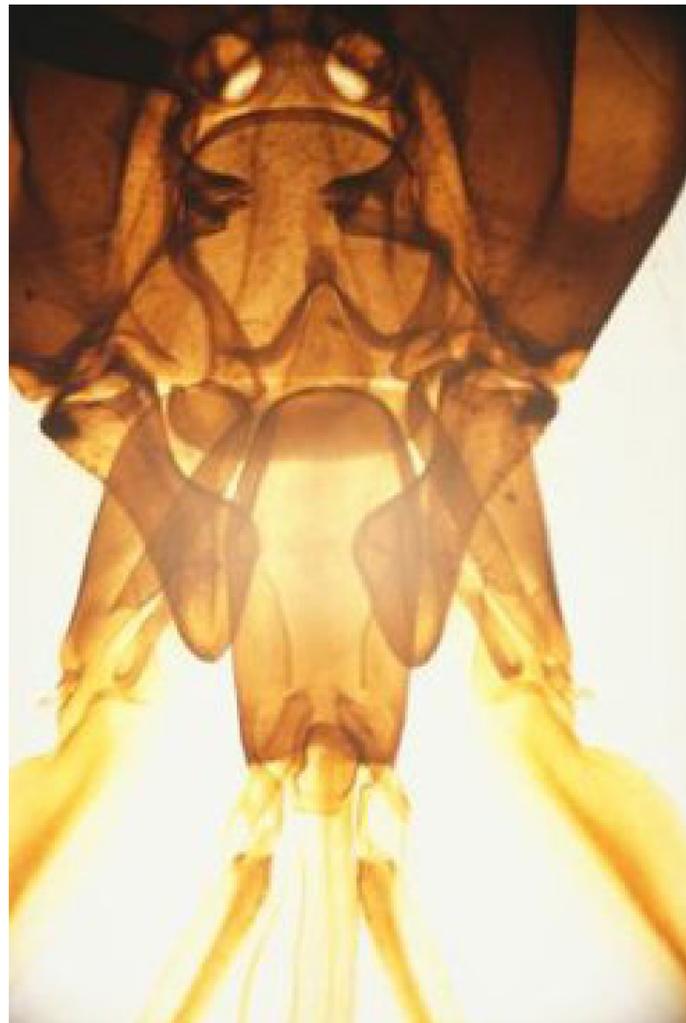


Figure 1.
Round dance

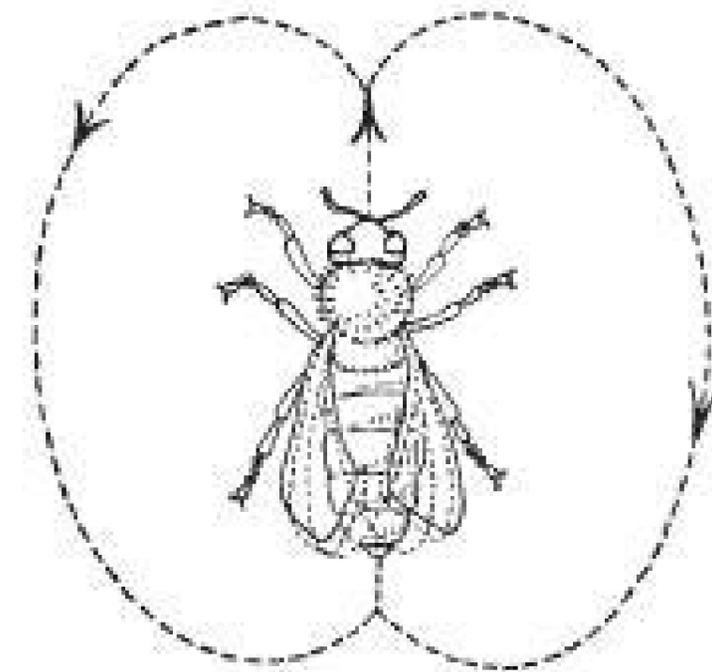


Figure 2.
Waggle dance

Helpful hints to tell the difference between

Bees

and

Wasps



Fuzzy

Little to no hair

Help humans by pollinating our plants

Help humans by eating other insects

Eat pollen and nectar

Eat human food that is laying around

Gentle in nature and rarely sting

Aggressive and ready to sting

Legs are usually hidden when flying

Legs hang down when flying



Educating people is another focus of this programme. People are unaware of the importance as well as the differences between bees and wasps, causing some people to kill them not knowing the damage they cause. If more people were knowledgeable about how to spot the differences, as well as understand them when they spot one maybe there would be a wider scale of people who care and put effort into helping one of the most important creatures on the planet. From their movements (such as the dances which are shown in the diagram) to the positive effects they have on the earth, people would be more inclined to think twice before swatting a bee.

Bees are responsible for pollinating about one-sixth of the flowering plant species worldwide and approximately 400 different agricultural types of plant. Due to this statistic, a lot of the worlds fruit and vegetables are around in such quantities thanks to bumble bees. The list of importance and usefulness is endless.



My programme is a sacred space which also serves as an educational spot. People will come here to worship honey bees and pray for them, as well as understand more about them and their actions (meanings in their movements to be better equipped when coming across one after leaving since they are critically endangered). This space will also encourage green growth and aim to be as sustainable and ecofriendly as possible.

Schedule of Accommodation

Function	Spacial Qualities	User Requirement	Specialist Requirement
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Sacred space

A large area in which there is an open ceiling allowing nature to come inhabit the space and become one, and allow bees to fly in and out of the space.

This space can host up to 10 people, however it would ideally allow 4-5 people to inhabit the space at one time to enable a more personal experience.

Enable a lot of light into the room to ensure a more airy and ethereal setting.

Bathroom

A simple bathroom with the basic needs of a toilet and a sink.

Ensure there is enough space for disabled users to also be able to enter the space.

Beekeepers Room (maybe)

A room big enough for a bed and some storage space allowing the beekeeper to stay if need be

1 room for a single user

Plain to make sure it can easily be customised for individuals desires

Outdoor Garden

A lot of planting around the building to make sure there is enough attraction for bees, and it gives the feel of being in the bees space.

Seating area to allow 1/2 people in one spot at a given time to enable reflection area, and personal time amongst nature.

Have a shelter which doesn't make the space dark.



Fig 29: <https://i.pinimg.com/>

When researching into folklores and mythologies, a group of indigenous residents in New Zealand (Maori) were one which I came across. They have a few myths in their world which were all very interesting to read into. Unlike most religions, instead of believing in a singular God like most they believe in two. The two primary gods being Papatuanuku (the earth mother) and Ranginui (the sky father) and they have a few children. The reason it rains is because of their separation which causes Ranginui crying out to Papatuanuku.



Spider mythology and folklore goes much deeper. In magic it is considered to be bad luck if you kill a spider. Many areas of the world believe different things such as in West Africa where they believe it to be the trickster god etc. The Greeks believed there was a weaver called Arachne who was bragging that she was the best, and came into conflict with Athena who also believed she was the best. Due to the clash they had a contest in which Athena was jealous of her opponents work leading her to destroy it. Arachne attempted to hang herself but Athena stopped it by turning her into a spider so she can weave her tapestries forever.



Fig 30: <https://dynaimage.cdn.cnn.com/>

31: <https://www.learnreligions.com/spider-mythology-and-folklore>

Source: <https://www.learnreligions.com/spider-mythology-and-folklore>
<https://berkeleycenter.georgetown.edu/posts/the-maori-people-and-environmental-protectionism>

There are also many mythologies about bumble bees. Since my polemic from the last project lead to a folklore, reading into these was essential for my project.

The sun god Ra cried, and these tears would form into bees. This is a myth from the Egyptians. The bowstring on Kamadeva's (the god of love) bow is made of honeybees.

In Greek mythology Aristaeus is essentially the bee-keeper.

The people of Uganda believe the first man on earth was named Kintu. He was sent on a trial in which the last test was picking out Ggulu's (creator of all things in heaven) own cow from a bunch of cattle. Nambi (Ggulu's daughter) guided Kintu in picking the right cow by transforming into a bee and landing on its horn.



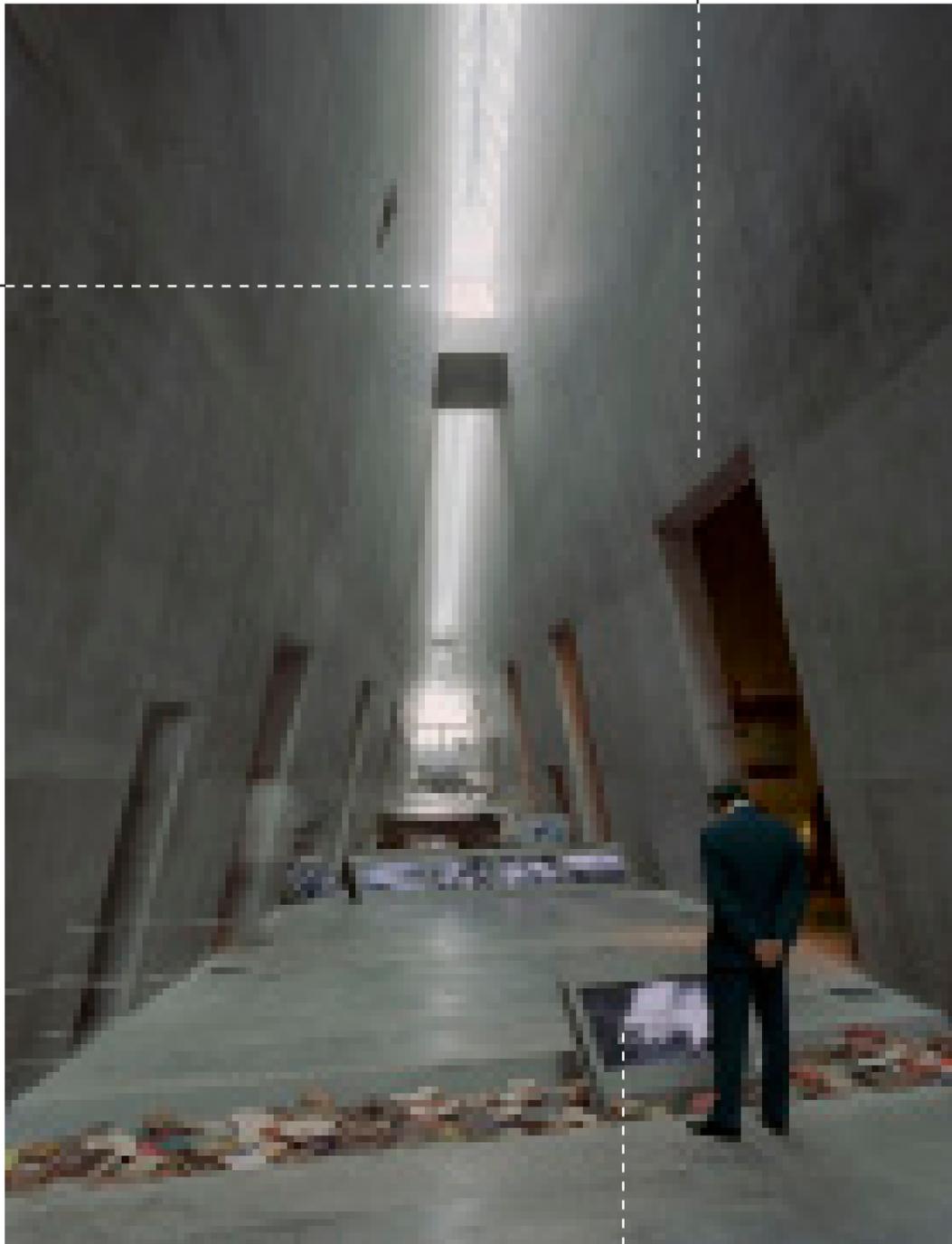
Fig 32: <https://en.wikipedia.org/wiki/Kamadeva>
33: <http://antinousgaygod.blogspot.com/>



Source: <https://en.wikipedia.org/wiki/Kamadeva>
<https://www.britannica.com/topic/Aristaeus>

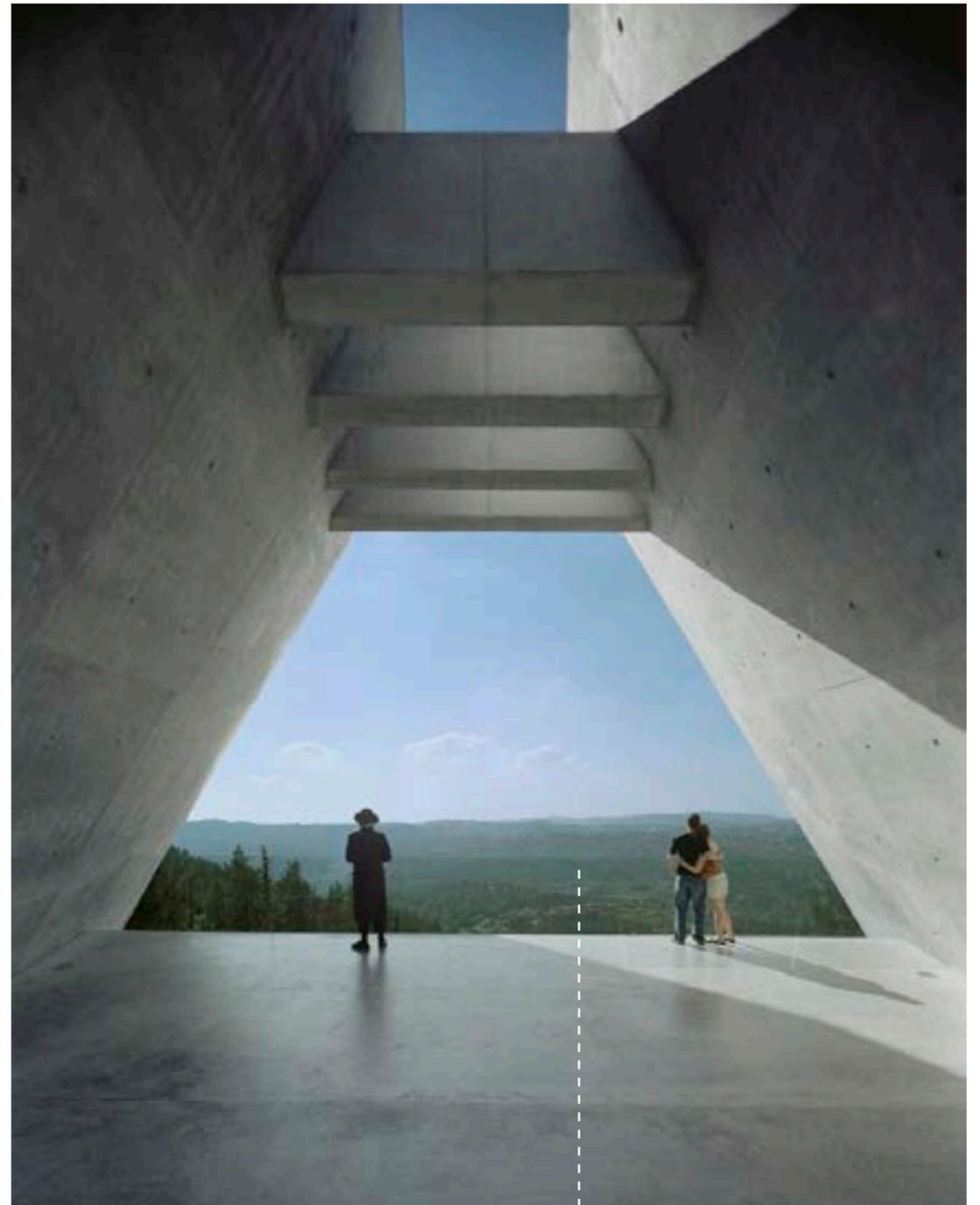
The huge doors are in this space make the area feel very fluid. As my programme allows the outside in, the size and big opening works well. The lack of swinging doors is perfect for movement.

Having light come into the space and looking at the way this space introduces light is very carefully thought about. It hits at specific angles creating certain atmospheres.



Information is displayed and people can wonder and move as well as investigate the work. It is not too intrusive, and what this building is for (Yad Vashem Holocaust Museum by Safdie Architects) it works well. If this space was bombarded with pictures it would take away from the feel this interior gives you.

I enjoy this building very much. The raw one tone throughout is a big statement, which for the purpose works well. The levels, shapes and angles are something I did not think about, but I can play with when creating my roof.



When looking at this image it communicates to me people reflecting and taking in nature which is exactly what I want to incorporate into my design. Having an outdoor space where individuals can think and take in everything is important.



Ellsworth Kelly's Final Masterpiece in Texas is a beautiful colourful display, yet so simple. The simplicity of this building is the first thing that caught my eye. However this building would be so boring without the colourful glass which casts beautiful shadows when inside the space. Light is a very important element in my design and this space uses light very well. The colours remind me of stain glass windows in Churches, which works well since it is a place of worship.



Fig 35-38: <https://design-milk.com/>

When looking at stain glass windows, especially those in churches there is a running theme. There are so many symbols and meanings behind each image and colour. In the Bible as well as in mankind, the dove symbolises peace.

This is one of the windows in St. Mary's Church (Potton, Bedfordshire) taken by Peter Loud. The colours contrast but work well together. This has inspired me to possibly use a similar technique within my design.

These designs can be as complex as desired like Sainte-Chapelle in Paris (image below) or much simpler like Sagrada Familia, in Barcelona (image on the right).

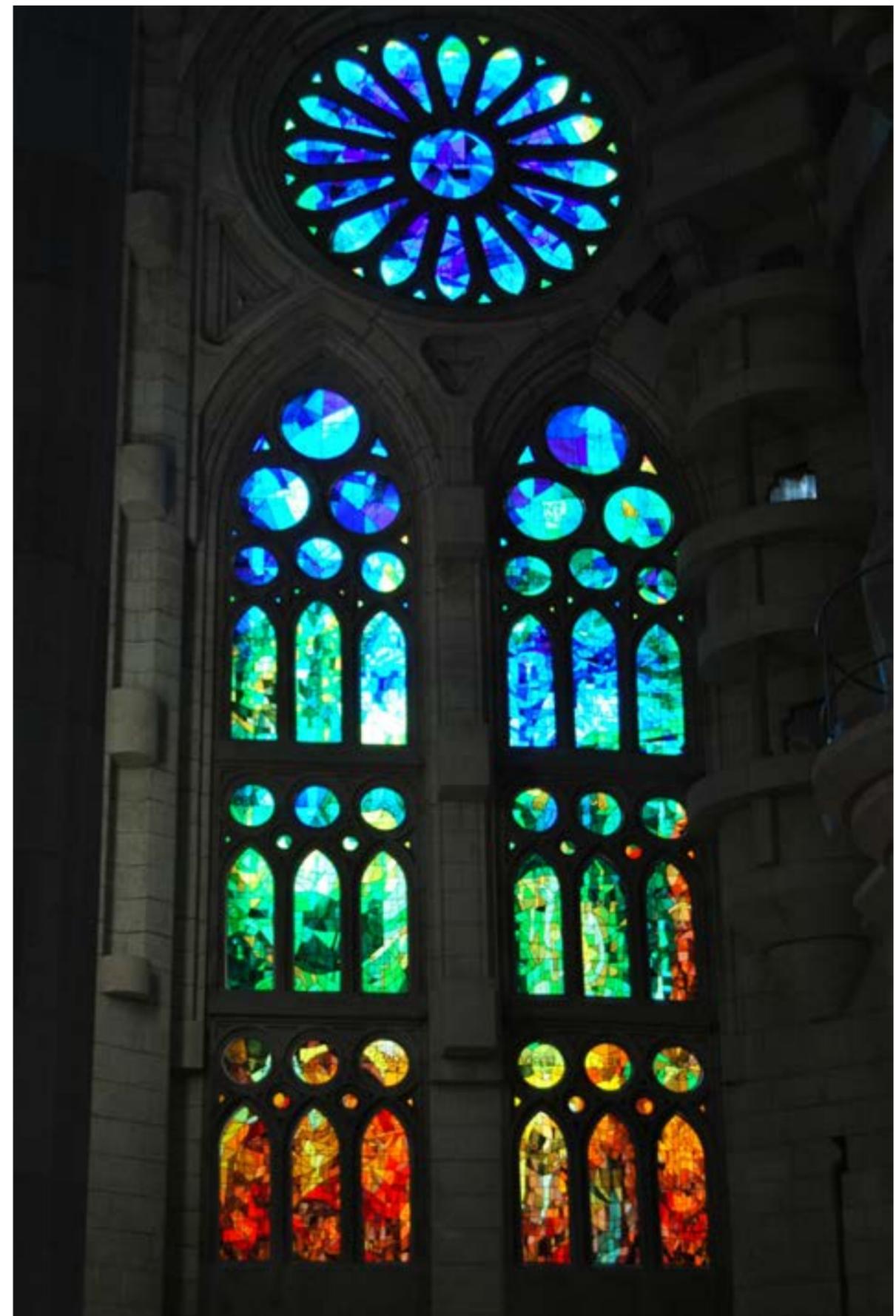
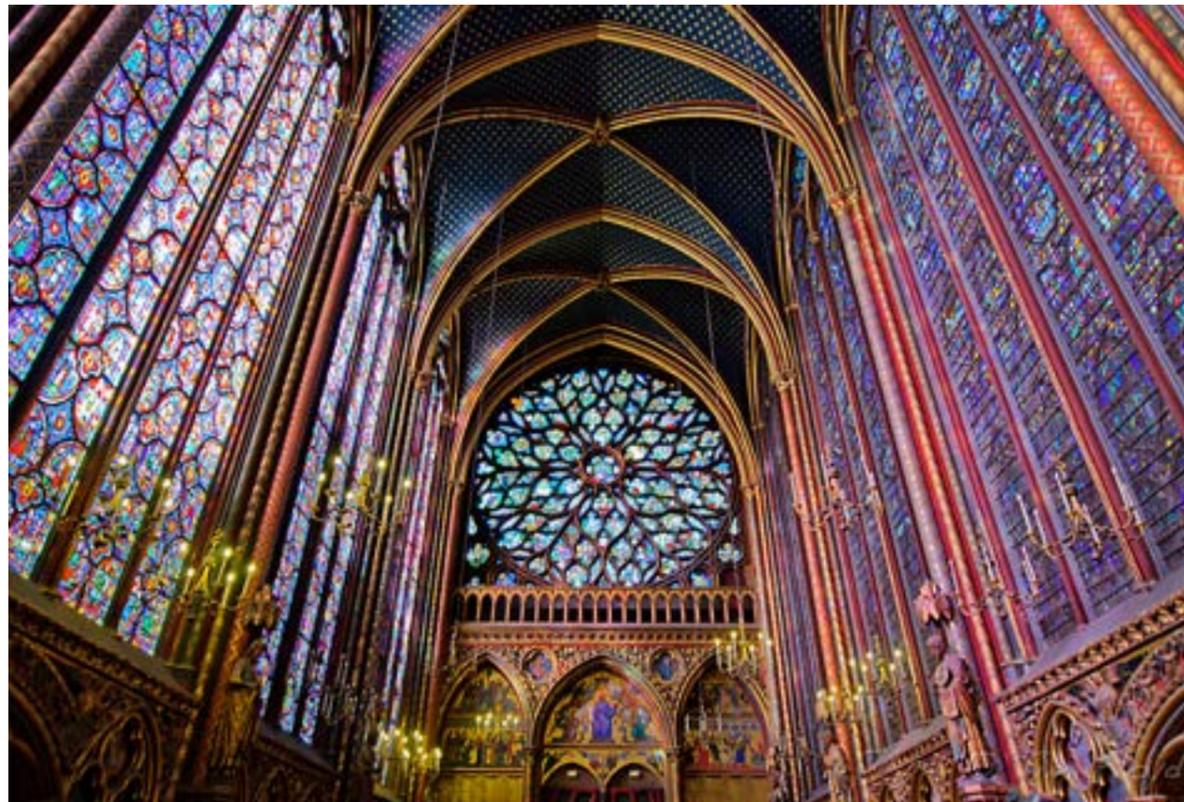
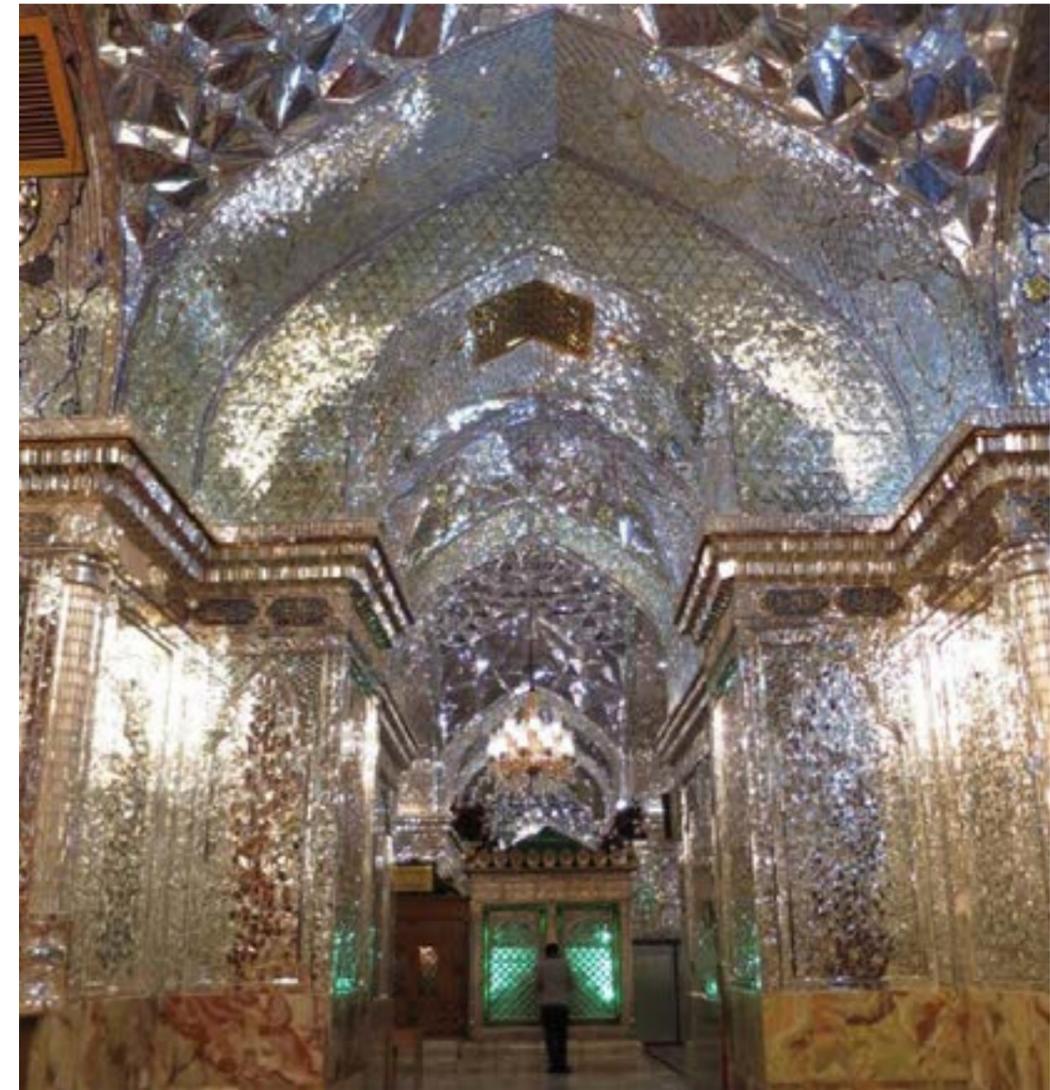


Fig 39: <http://www.peterloud.co.uk/>
40-41: <https://emeraldgreenannabel.wordpress.com>



The Shah Cheragh Mosque (King of Light) in Iran is one of the most beautiful mosques around. The inside is overly decorated and glimmers as your eye moves around the room. Again the way that the light is hitting areas of this space is very interesting, and thought about yet again. This reminds me a lot of Yayoi Kusama and her working with mirrors to create her 'infinity rooms'.

These rooms inhabit between 1-4 people at a time and they span over a very small surface area. the placement of lights, mirrors and the angles create the illusion of an eternal continuous space. This may be something I explore within my design as it makes you feel special, as though you are witnessing a rare sight which will be the case when you see a bee in my space.



Fig 42-43: <https://www.ramblingfeet.net/visit-shah-cheragh-iran/>
44: <https://www.thisiscolossal.com/2013/11/yayoi-kusama-infinity-rooms-new-york/>

Visual Sequencing Research

Peter Zumthor does a lot with atmosphere and the way in which spaces create a certain feeling or portray a specific sense which is important for a sacred space. Looking at his Serpentine gallery pavilion in 2011, it shows a way in which the outside is inside and the two are merged in a fluid way.

The use of fabric which is stretched across elevates the sound of rain which is something I want to test out and possibly incorporate into my design.



The use of chairs and space for individuals to spend their time is something I want to incorporate as 'reflectioni space'. The shape of the gallery design reminds me of my host building and the shelter that goes around its perimeter which I should utilise.



Without being in this space you can sense the exact ambience you would experience when being here. Many places and spaces do not communicate the quality and aura it gives off well and the way he does it is very inspiring. I want to make sure that from my drawings you can feel the sensation you would when present.



The materials used in this gallery give the space a specific feel and atmosphere depending on the weather and the surroundings. When the sun is shining certain areas within this space catch the sunlight and others do not. The same with rain, he has careful thought about where he wants it to hit, and has thought about what should be on the receiving end.

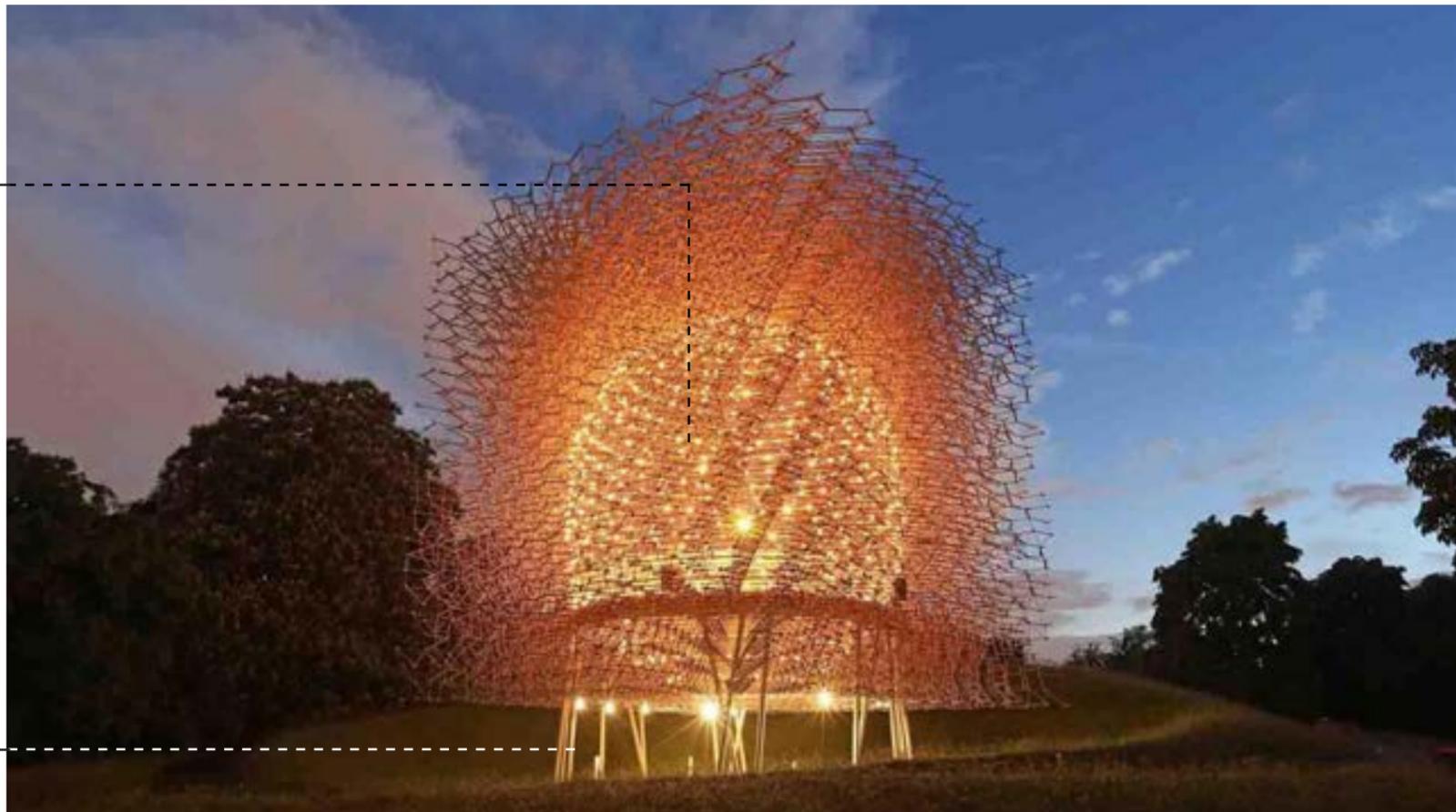
Kew Gardens hosts a bee related installation called 'The Hive'. When deciding that the new programme will be about bees the first idea was to home them, similarly to a beehive.

This piece of art stands at 17 metres tall which makes us humans feel so small. It almost makes us feel as though we are the bee.



There are one thousand LED lights which resemble the bees and vibrate to mimic their flying movement and sound. This casts a beautiful light display when it gets darker.

The fact that this huge piece is also elevated on a stand makes it even more extreme and grande. I really like the way its almost on a pedestal because of how important these creatures are to the world.



The Pantheon in Rome is similar to Peter Zumthor's Serpentine gellerg in the sense that it has an opening which is something I definitely want to incorporate in my design in some way. The holyness of the space can be seen from this image and in the way it is designed; it's spherical shape creates a holistic experience.



Fig 50: https://en.wikipedia.org/wiki/Pantheon,_Rome

51: <https://www.archdaily.com/893782/damushan-valley-teahouse-dna>

Tea Garden in the Damushan area of Songyang (China). The way the plants grow into the space inspires me to add these into the sound mirror which will be in the ground. But in order to use these more research into specific plants need to be carried out to make sure it will not ruin the building since some plants have the ability to do so.

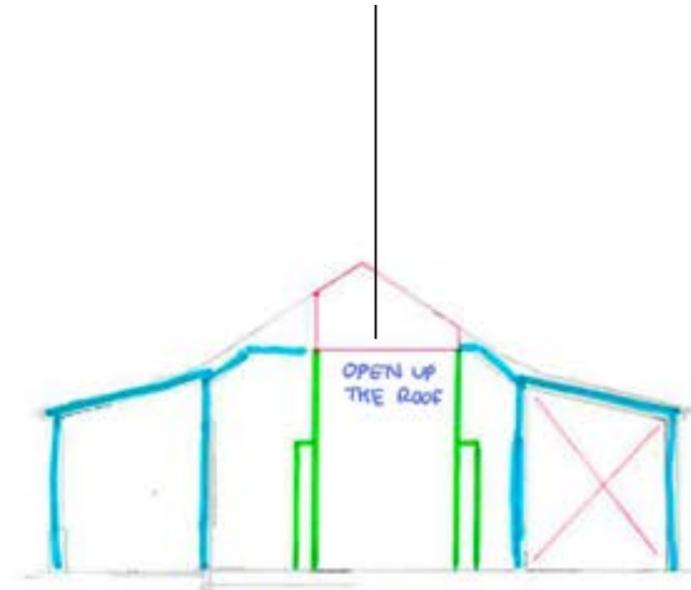


Having an exterior relaxation space for people to reflect is important as part of the programme, especially due to the lack of space inside. Utilising the shelter which is already surrounding the space is more ecofriendly and efficient.

Since this space is created for bees, having a bug hotel was initially an idea. Similarly to confession rooms the idea was to have this in the middle of the space. However this wasn't the best idea due to the need of a beekeeper being needed, and the aim was not to home bees but to encourage their appearance in the space.

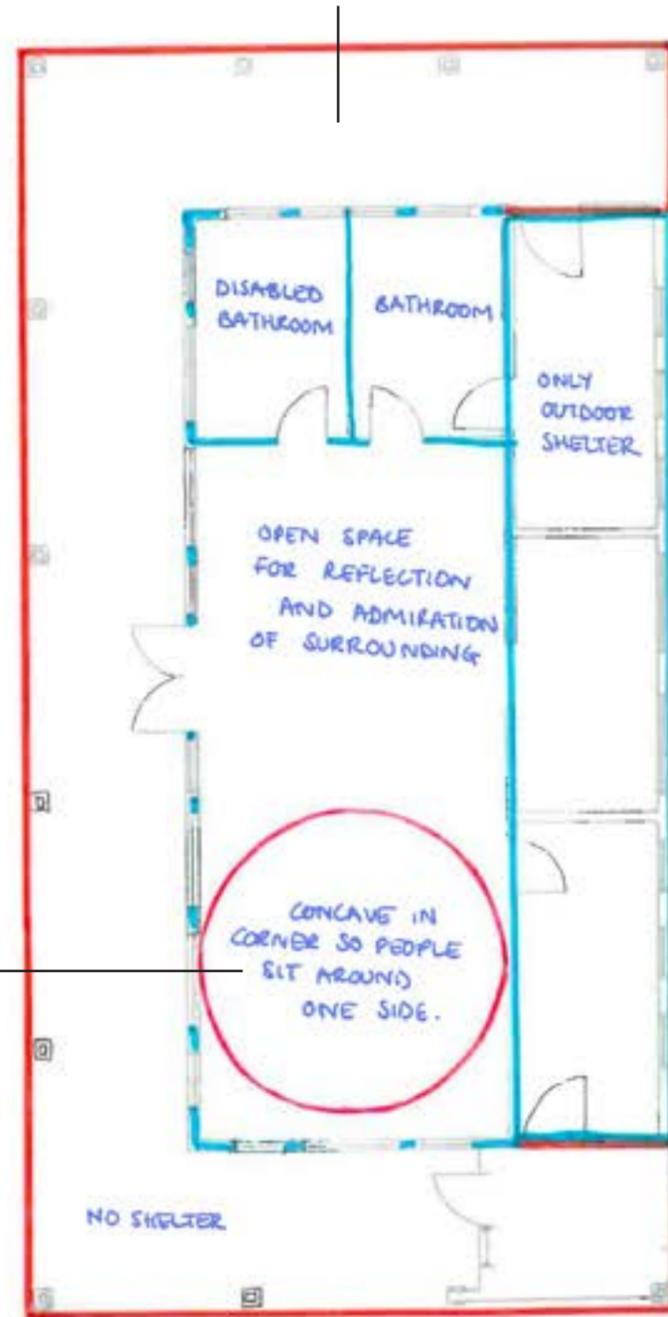


Opening up the roof so the bees and humans can interact with each other and to enable a more indoor/outdoor space.

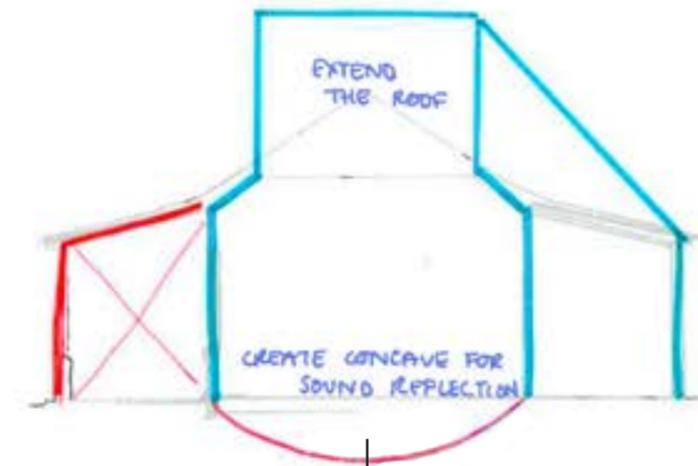


Zoning Diagrams
(to scale 1:100)

I wanted to knock down the extension which housed the toilets, and turn it into the outdoor garden area. This does not seem like the best idea since this space is not big enough. And those who do go here would end up close to each other which for 'reflection' purposes is not the best idea.



The positioning of this concave is not suitable since it forces everyone to go to the corner. Less than half of the sound mirror would be used causing it to feel more cramped.

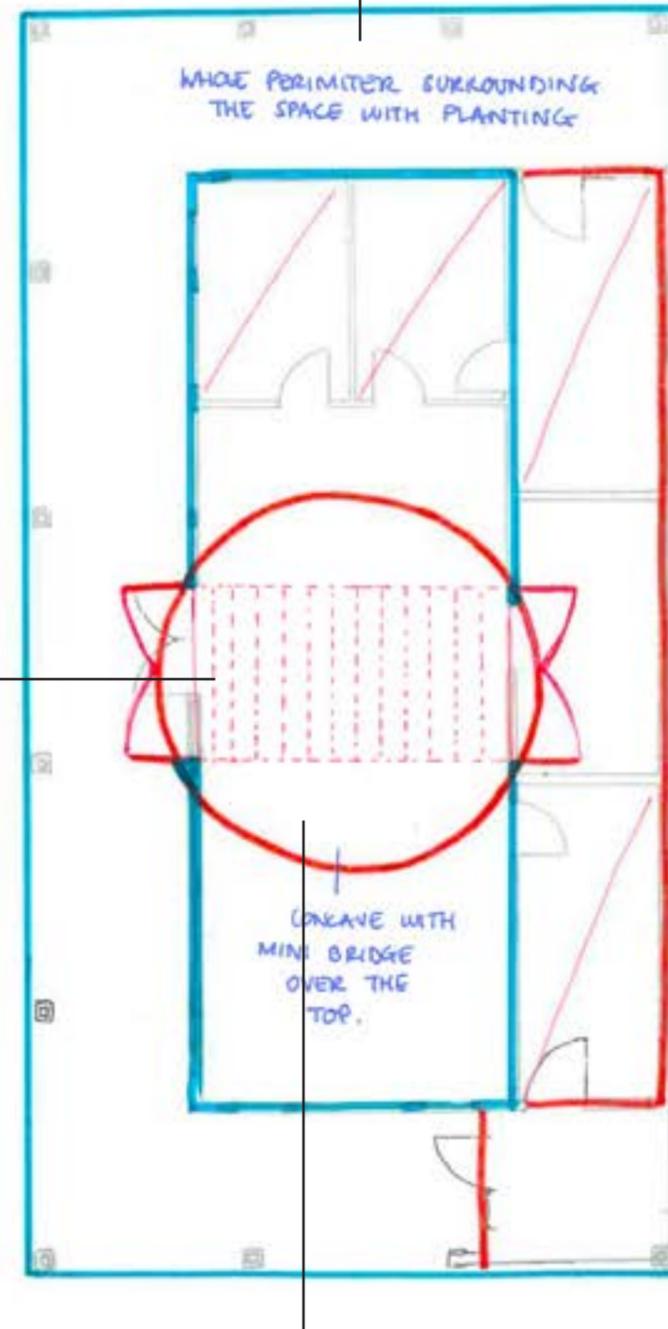


The sound mirror was a key part of my monument and I would like to bring it back as it was a very good design factor in my proposition which worked well.

Zoning Diagrams
(to scale 1:100)

Fig 53: authors own drawings

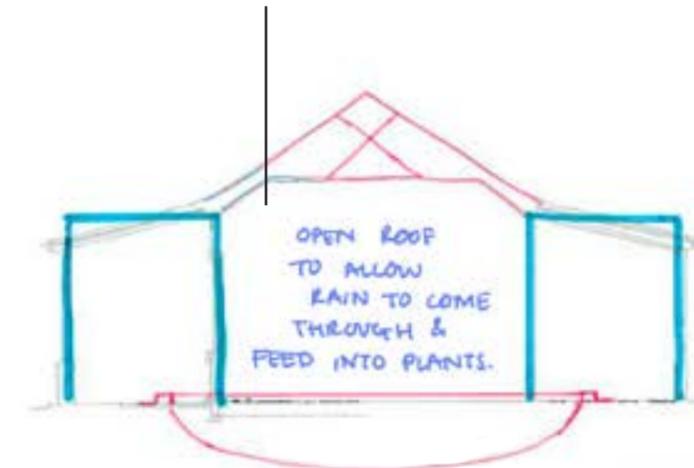
Using the current structure and shelter to give maximum outdoor space without it disrupting the original form (the previous shelter did not work).



Creating a bridge that goes over the sound mirror to the other side. This allows more people to use this key factor as well as giving users a new perspective.

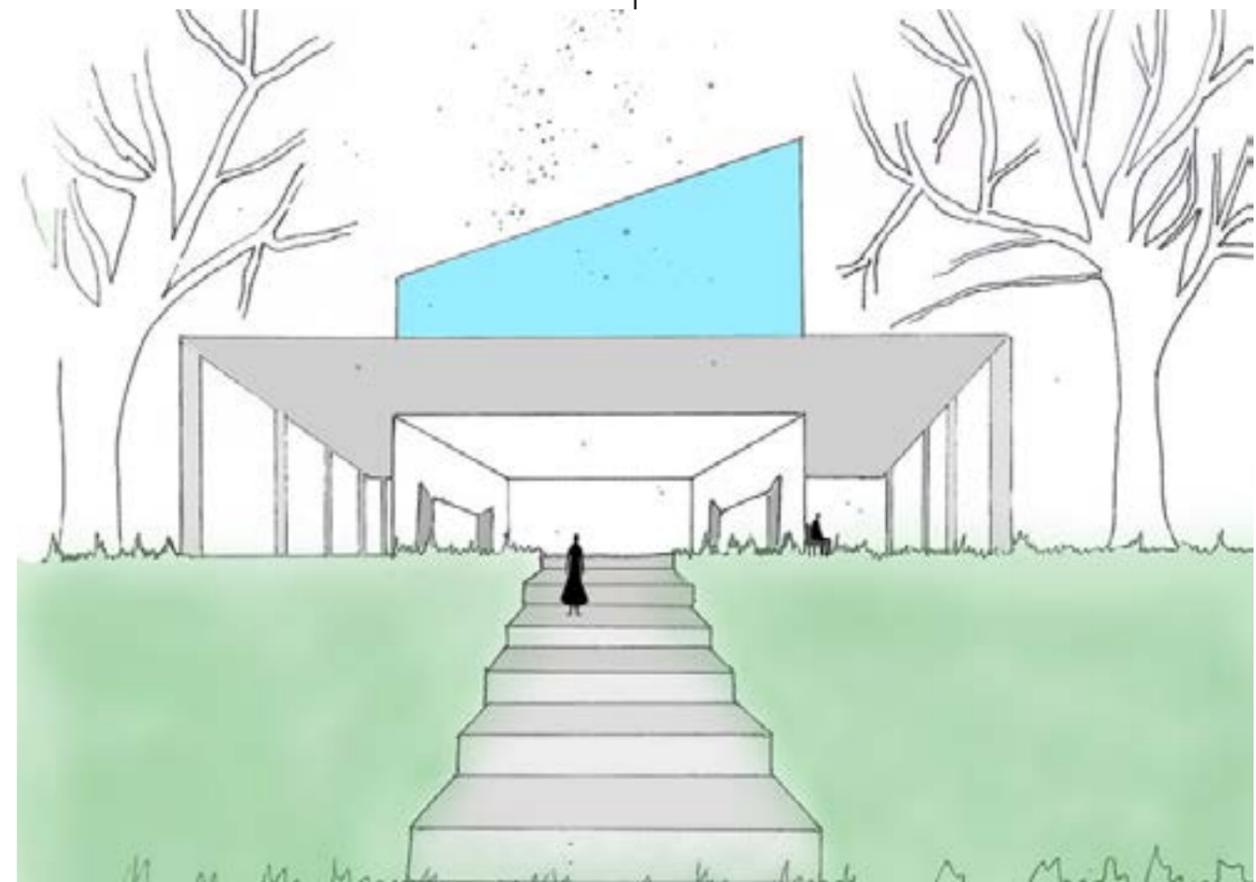
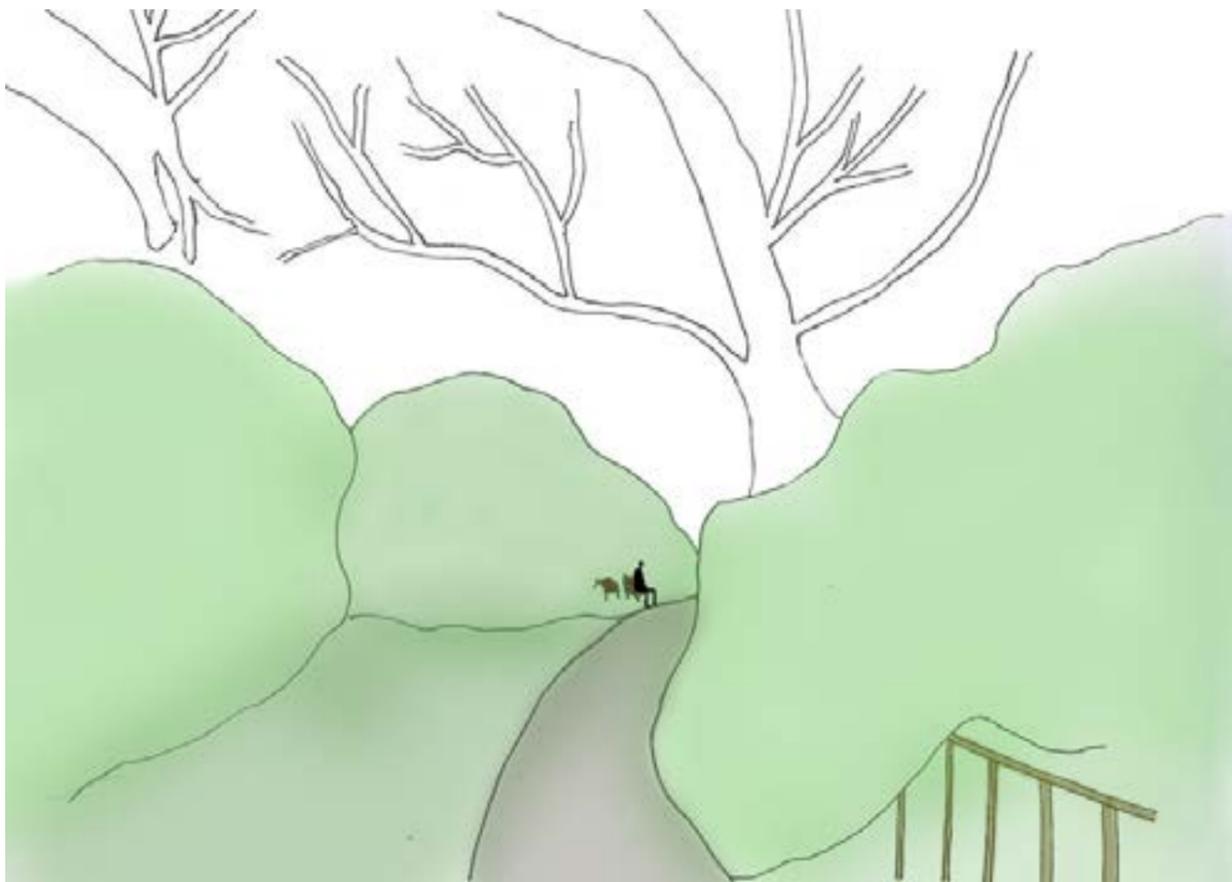
Having the sound mirror in the middle of the interior allows it to be utilised by more of the inhabitants.

Completely taking off the roof which covers the internal space allows all types of weather inside as well as much more light. The only issue being rainwater collecting over time.

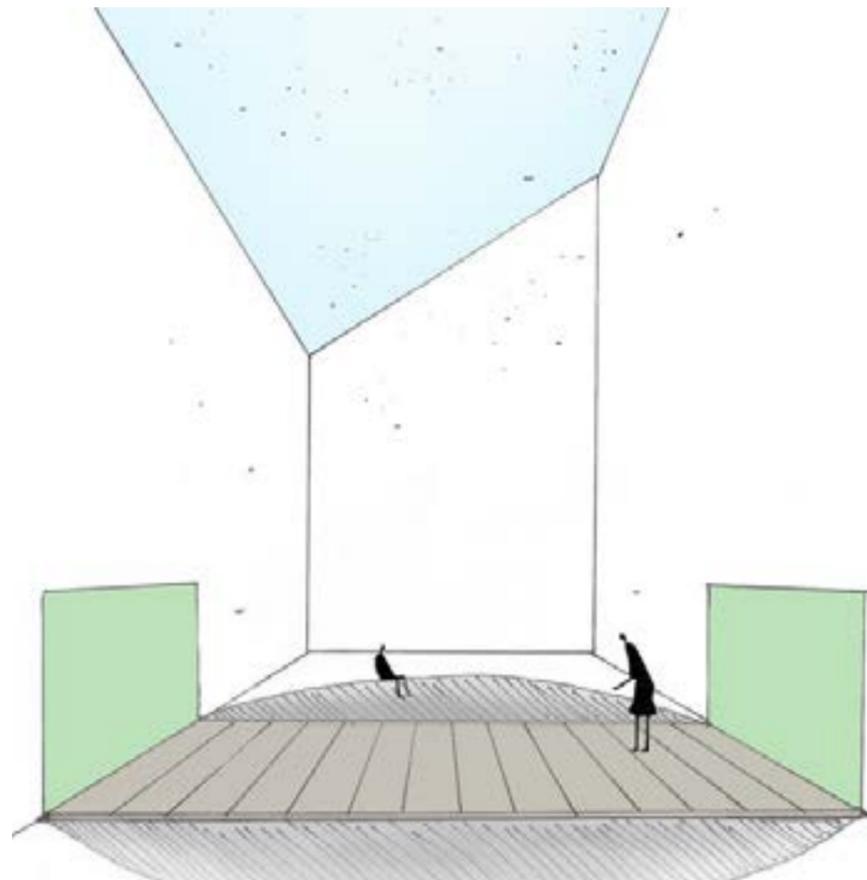


Zoning Diagrams
(to scale 1:100)

I believe this image works quite well. I can believe anyone who has been to the site can easily visualise the space and what it would look like. This image is the most successful in this sequence due to the context.



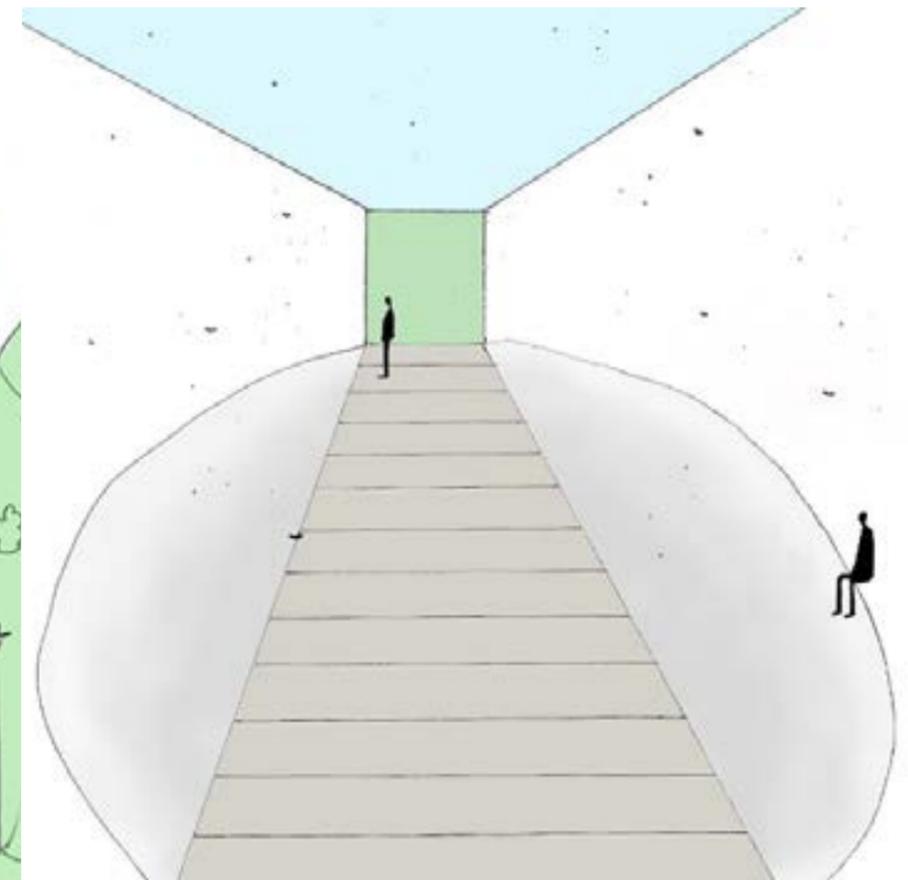
Based on the the plan drawings which show spatial relationships and how well they work as well as the areas required, I created a sequence of images. These show the route from my monument to the host building. based on the programme that will be running throughout my space. If i did this again I would use photoshop to collage some images as hand drawing these did not portray as much detail as I would have liked (materials are not easily identifiable), as well as taking a lot of time.



This image works better than the last one I believe due to the inhabitation which shows the sound mirror as a bowl rather than a flat circle.



This particular image does not flow as well as the others in the way it is drawn. The style of this drawing feels very disconnected, and if I had redone this I would include the building in the background.



This would also be one of the weaker images since the sound mirror does not come across as what it should to someone who is unaware of my project and ideas.

Adaptive Reuse

In this project we will be working with buildings of which some may be listed, historic, registered or none of the above. The programme which will run within the chosen building will be an attention of the concept and ritual from the monument. In the future where this is set, these two spaces will co-exist. When designing or coming up with something that will be in the future, it is important to be able to adapt the current host building and understand how it works in order to design a successful space. This will be a more sustainable approach with minimal impact to the foundations and require less work. When it comes to historic spaces or listed buildings, the amount of work you are able to do is very limited, this means without knowledge of the space and how it all works, connects and comes together, designing will be very difficult and may fail.

Mohammad Hassan Forouzanfar is an Iranian CGI artist who uses edits to create a new way of protecting buildings and architectural landmarks. Although he is adding to these layers, the way in which it is done is very minimal.

This inspired me to be cautious when dealing with listed buildings or places which are historic or have importance/significance. It also communicates to me that less is more, and not every design has to be extravagant as sometimes more simple ideas portray the meaning across very well.

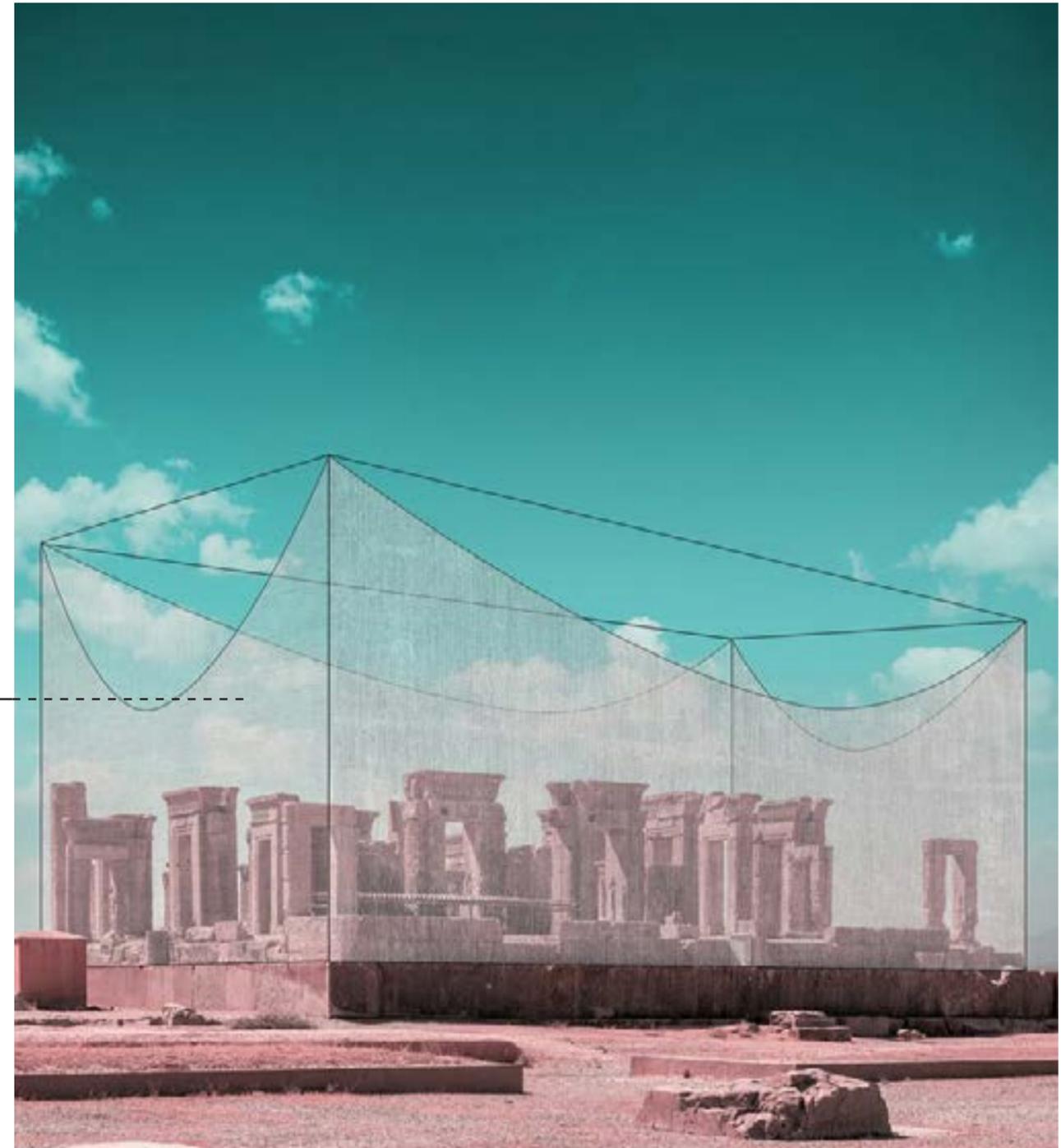


Fig 57: <https://lifepism.com/architecture/modern-architecture-persepolis>

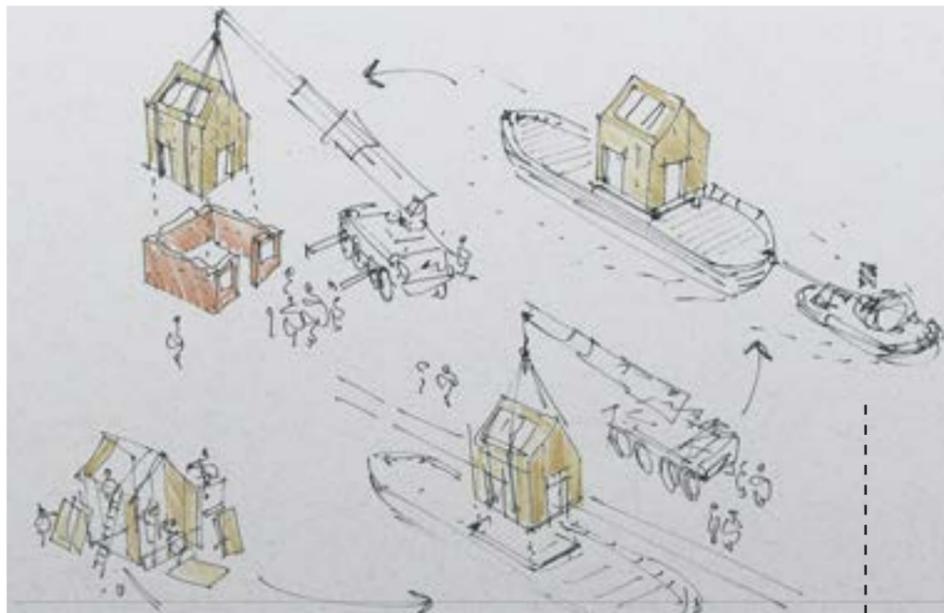
Using the negative space as a canvas for new ideas to build upon the existing enables a more coherent territory.



You can see that work has been done, but none of these historic sites are demolished or destroyed in order to make space for new and 'modern' styles. Instead these sites remain unfinished but they are added and built upon with transparency and in a way that all layers marry together.

Fig 58-59: <https://flipboard.com/topic/Frames/mohammad-hassan-forouzanfar>

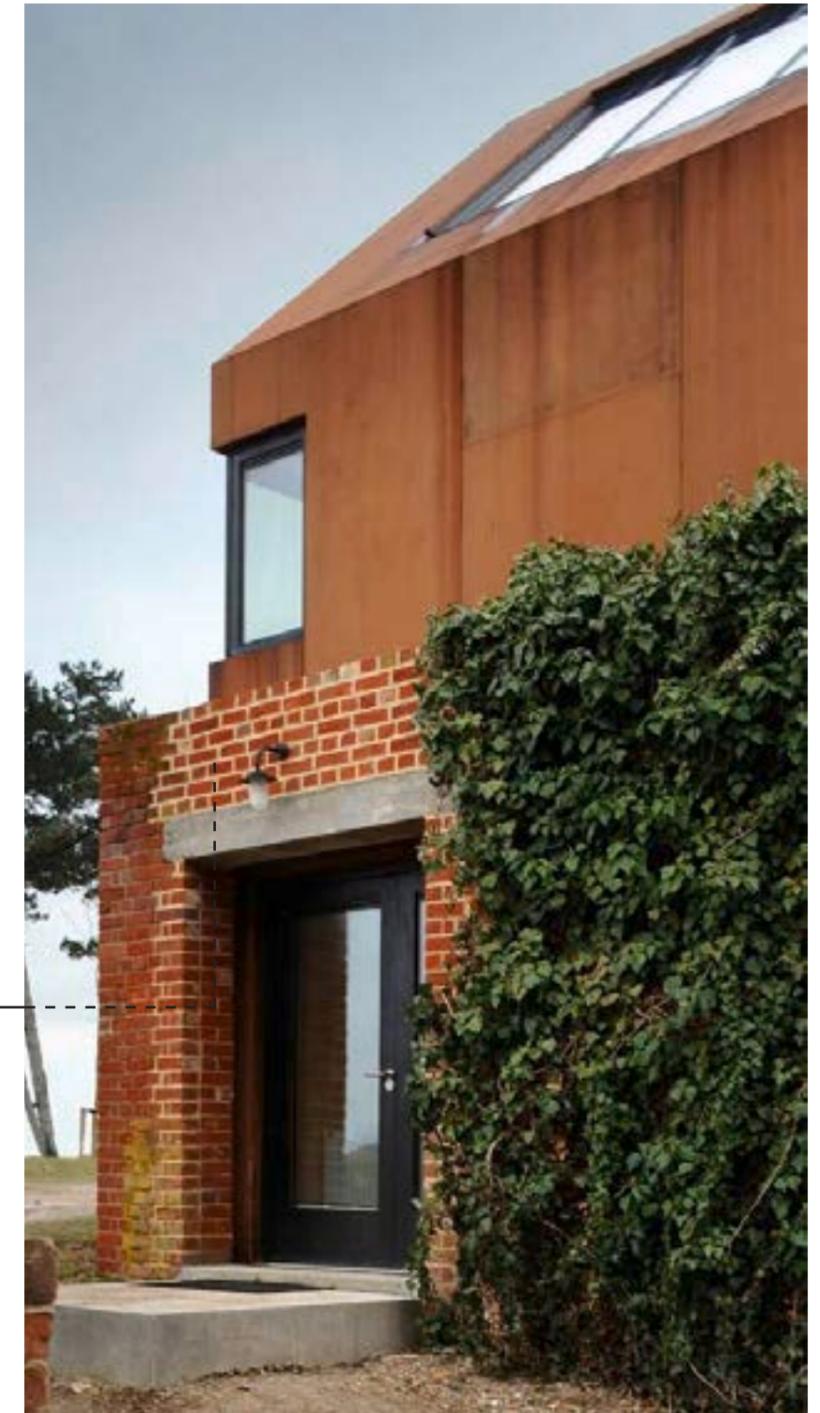
Keeping the nature around the host and those growing on the space should not be interrupted unless it is affecting the stability of the materials. This is important as nature is a key feature of my programme but also my site.



Researching into the way this space was designed is very interesting. As well as being built as a whole piece which slots into the form of the original, but the materials and colour palette are very cohesive with the host site.



The way in which the renovation has been carried out is attentive and mindful of the existing. Although the same bricks have been used, they do not mimic the natural weathering which the original bricks have endured throughout their time. This teaches me to be less 'neat' when designing which is an issue I face; spending too much time perfecting is not always necessary.



Haworth Tompkins renovated a neglected building situated on the Dovecote Studio campus, which is a beautiful example of using the ruins to create something new but in a way which does not completely dilapidate the current or does not cosndier the style and themes which is a focus of mine with any site I use. It uses rustic steel which compliments the red bricks. Although seperate the structure blends well with the shell and shows a careful process. Due to the location of this building, it is flexible enough for artits to use due to the lighting, but also allows it do be adaptable for muscicans, reharsals or even exhibitions.

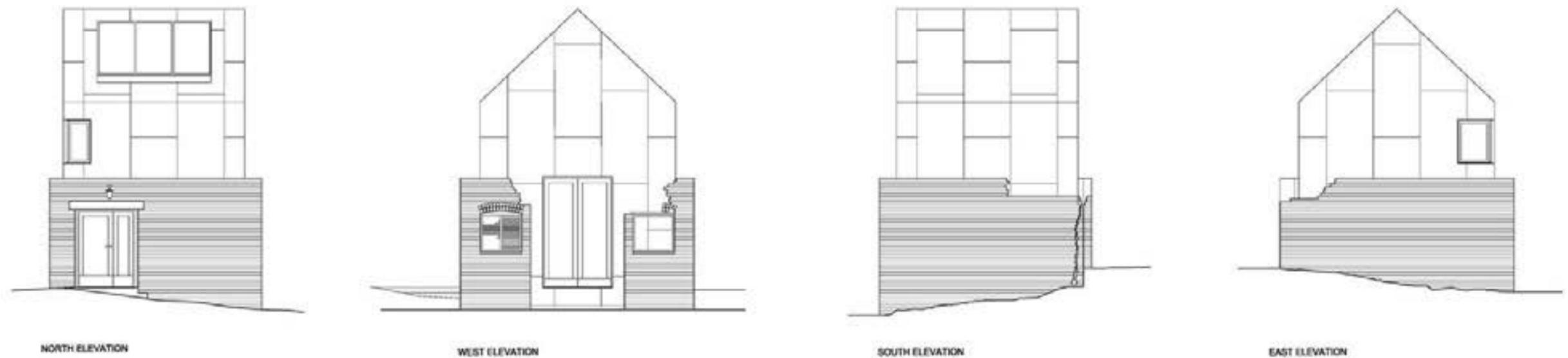


Fig 65-66: <https://www.dezeen.com/2010/02/14/the-dovecote-studio-by-haworth-tompkins/>



The design of the arch stays true to its ancient style with the thin bricks used to build around, and it gives the opportunity for natural sunlight to pour through and give it a glow.



Another example is the National Museum of Roman Art in Merida, Spain (1989). There were columns and arches placed into the space to allow artwork to be hung or placed. The space does not feel modern which is important in order to stay true to its purpose.

Again the way this has been done is very careful of the existing space and making sure it is all incorporated and it conserves the current archeology and allows it to be displayed in a new way with minimal damage and interference.

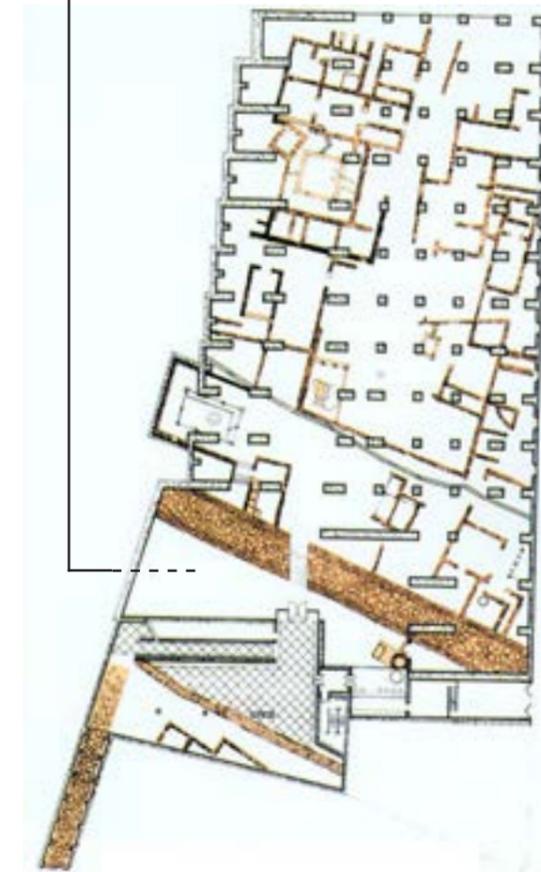


Fig 67-69: https://www.archdaily.com/625552/ad-classics-national-museum-of-roman-art-rafael-moneo?ad_medium=gallery



The entry tower to the Museum of Nature in Ontario, (designed by David Ewart) started to sink into the ground, which led to a renovation taking place. The entrance of this building was initially as tall as the rest of the site which caused the descent. It was redesigned by KPMB Architects which they called the 'Lantern'.

The atrium sits on top of the entrance which is a nice contrast from the beaux art style building, and also acts as an attraction. When looking at buildings which have been altered there are a lot of spaces which use contrasting materials. However these do not always work well with the existing, but when these have been thought through and serve a purpose than only aesthetically it makes the design stronger.

The lantern acts as a centre piece; is versatile enough to allow the theme of the museum to be visible from the outside, even to cars on the road.

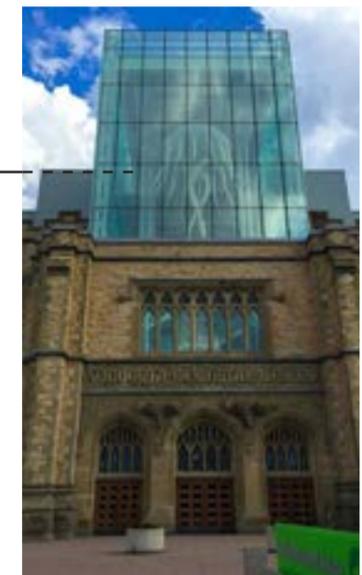


Fig 70: <https://www.youtube.com/watch?v=JAXUHWyxYzI>
71-76: <https://www.dreamstime.com/>



In 2015 a new retail centre was announced, then publically opened in 2018. This space which once was a Victorian coal drops sheds which recieved coal was transformed by Thomas Heatherwick. It now homes a range of businesses from clothing stores and shops, to cafes, bars, and restaurants.

The idea for the shape of the 'kissing roof' came from the shapes of a strip of paper when it is bent in particular ways. This teaches me to be way more experimental and creative with my ideas and to not be afraid to think feely without limiting myself to create a doable designs. There are ways to make something work and that sometimes takes a lot more thought and practice.

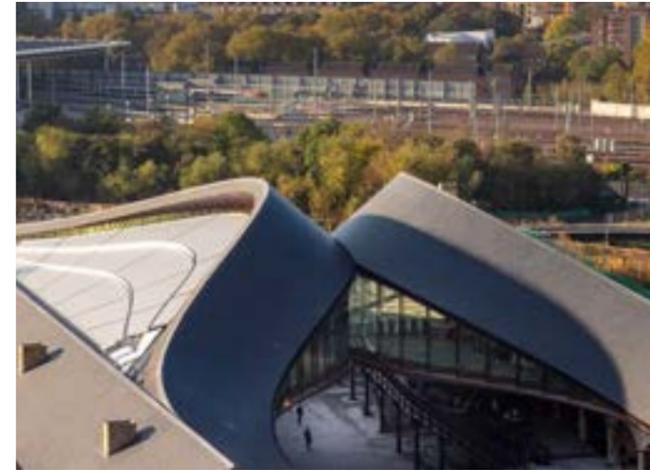
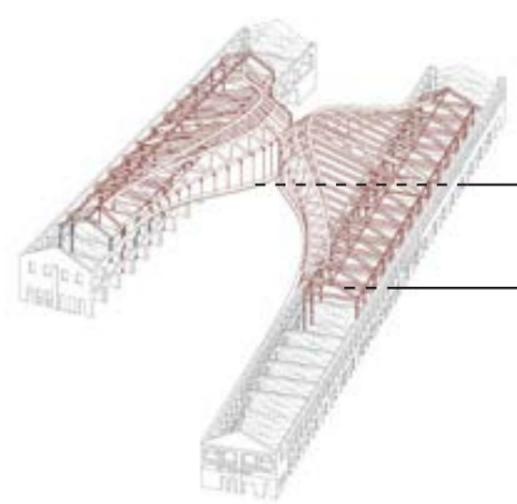
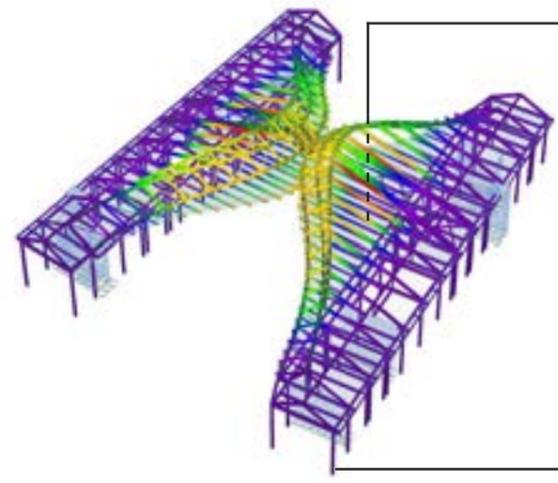


Fig 77-82: <http://www.heatherwick.com>



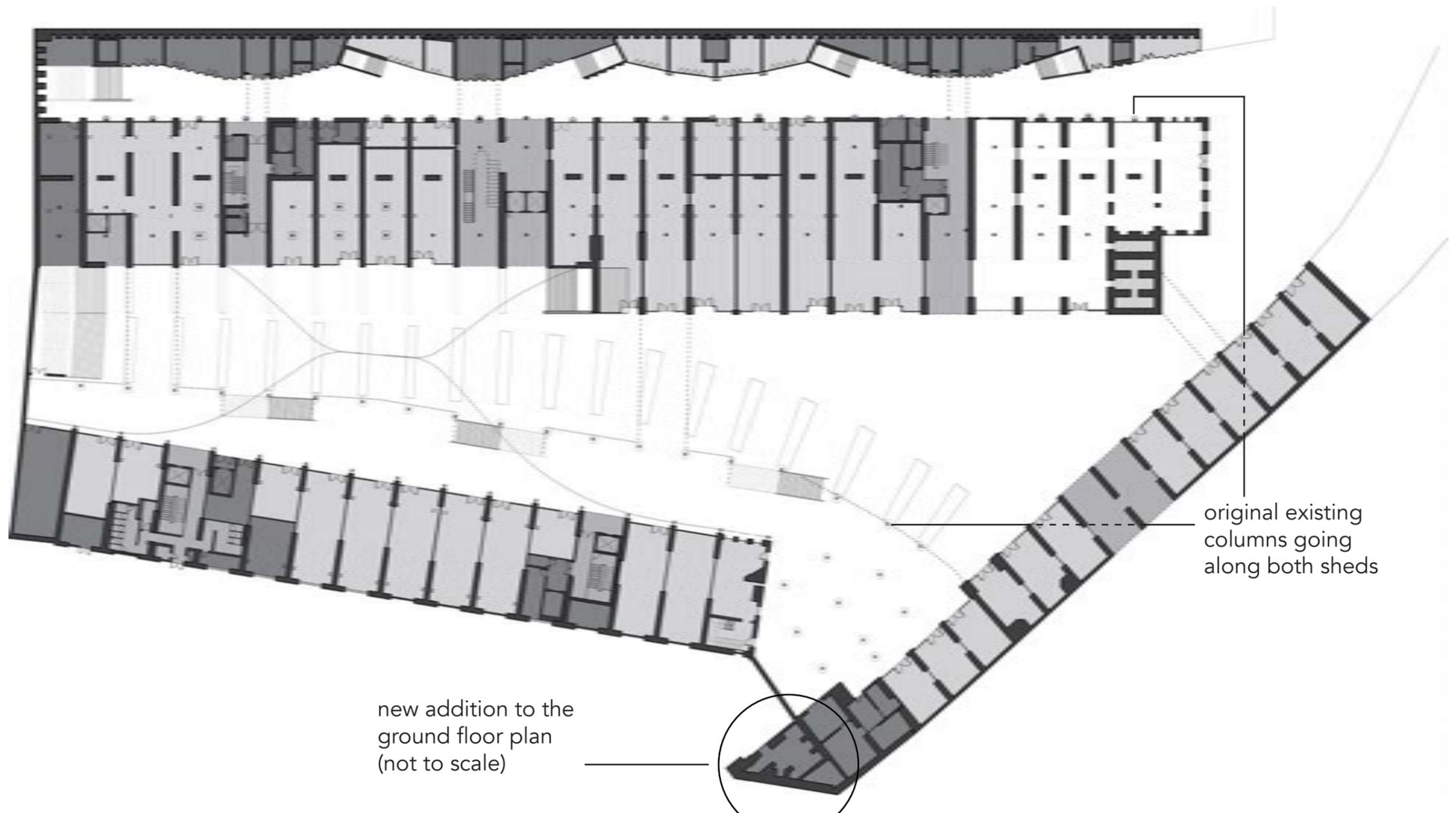
The way the floor is suspended is very clever and innovative.

The building is constructed of many new frames. The truss connects to the columns which gives the structure a lot of support.



Hollow steel tubes used in the design of the roof. This diagram shows the tension in the roof.

54 steel columns supporting the building. These support the weight of the roof addition, so that it does not have extra weight on the existing coal yard.

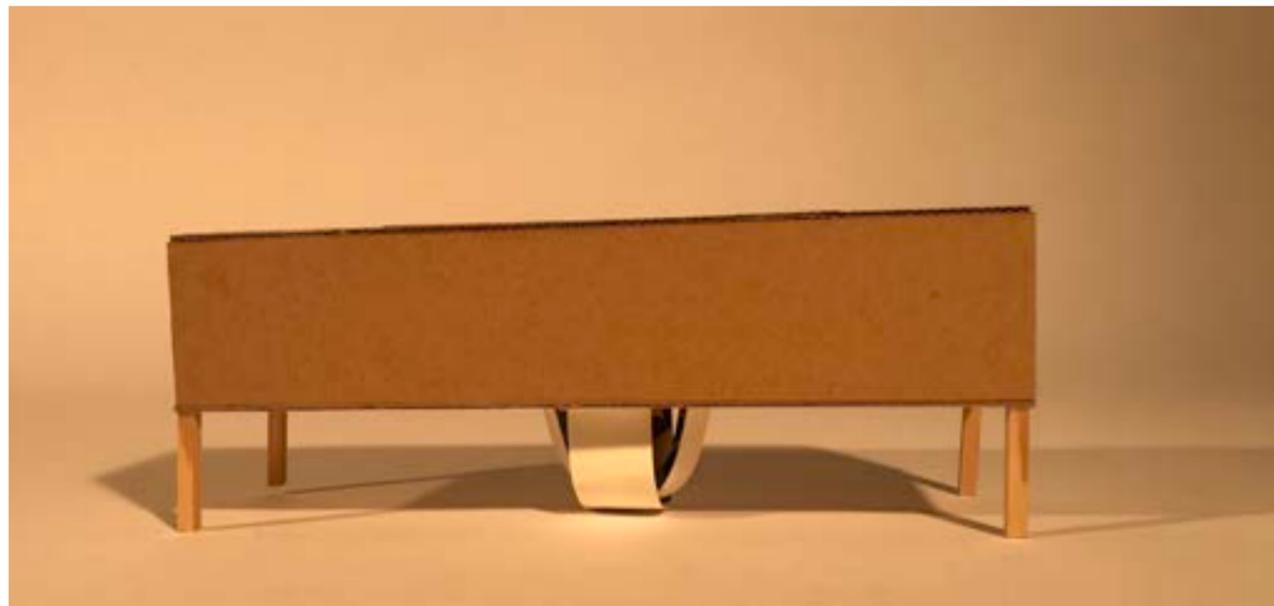
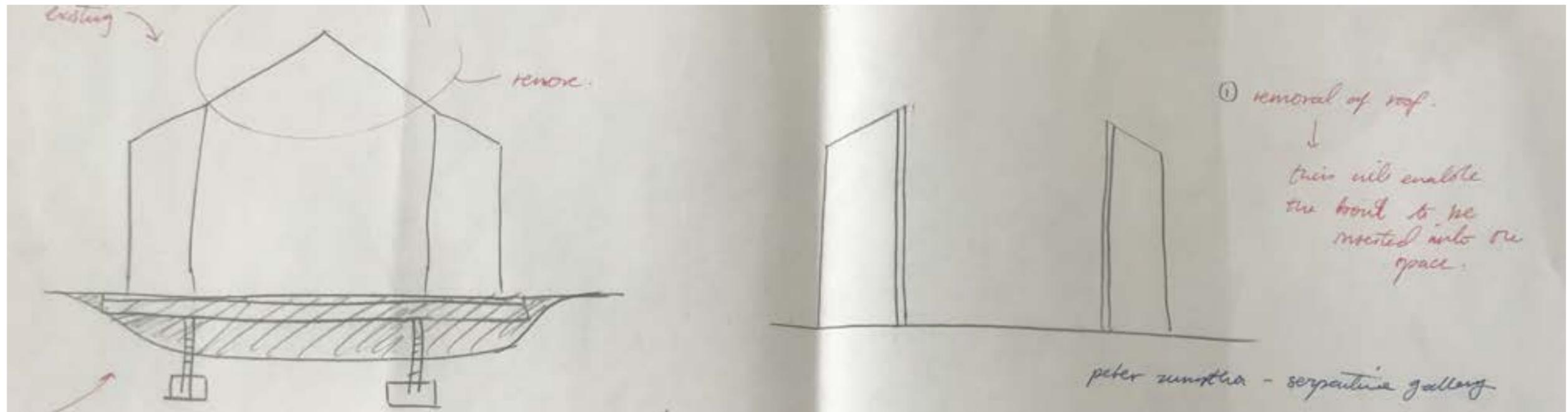


original existing columns going along both sheds

new addition to the ground floor plan (not to scale)

Fig 83-85: <https://www.dezeen.com/2018/11/01/thomas-heatherwicks-coal-drops-yard-360-degree-movie-architecture/>

5 Keys Research



Taking off the roof of the host building is a big architectural move which enables the outside and inside space to merge into one homogeneous space. It will be replaced with materials which are more permeable and attracting to bees.

The model shows the roof being opened up bit, but a roof still existing. However as the design continues to develop, the roof completely disappears.

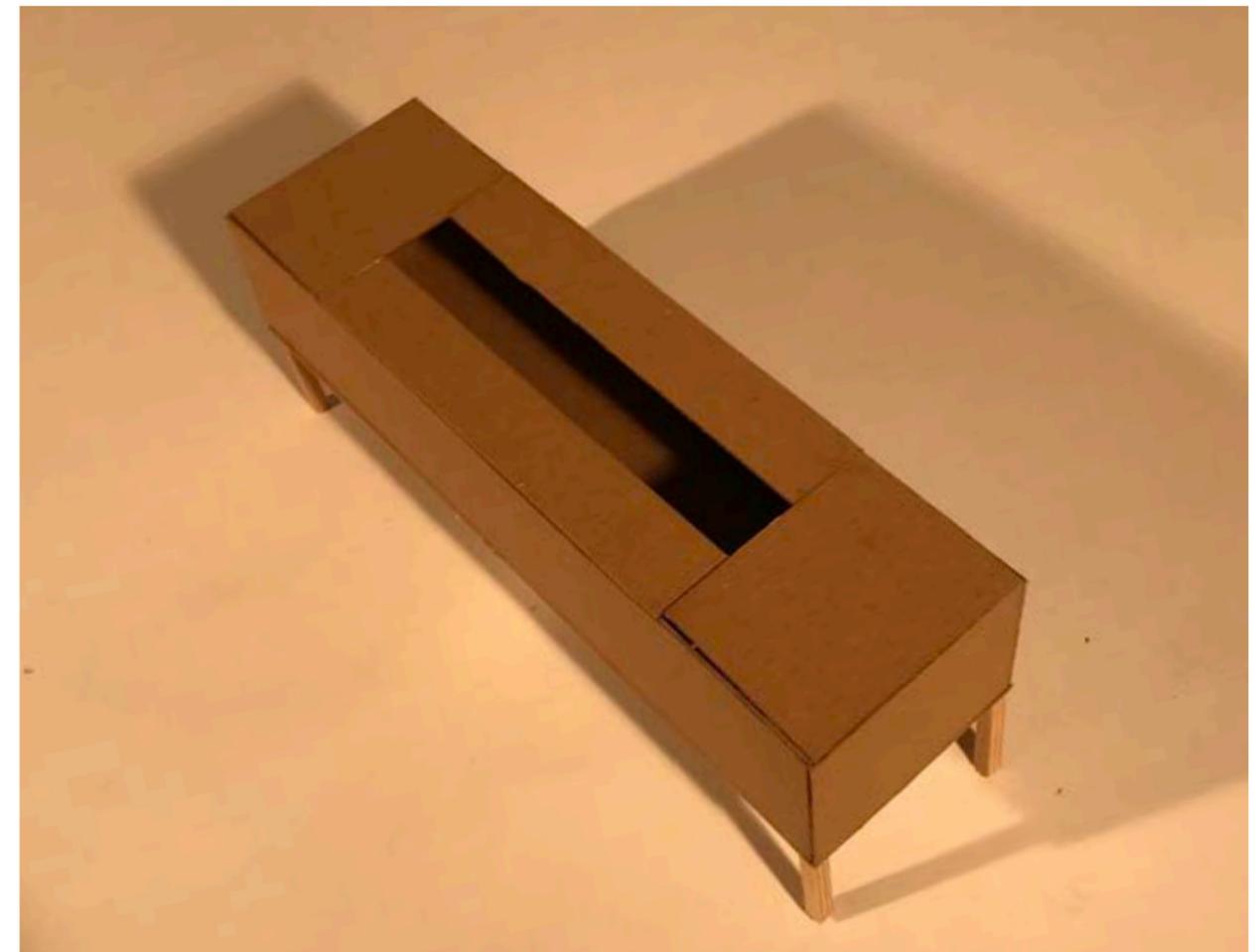
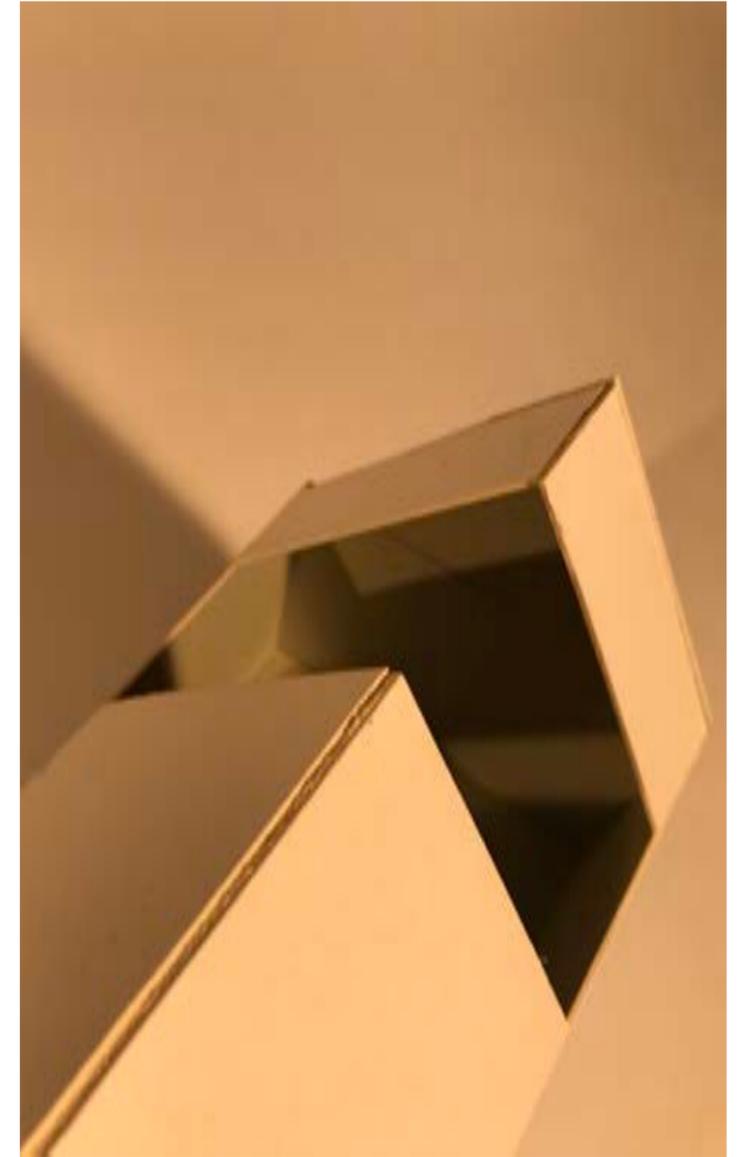


Fig 86-88: authors own sketches and photographs



This is another variation of the way the roof can be constructed. This was inspired by my monument which also has a peak to attract people/bees and can be seen from afar.

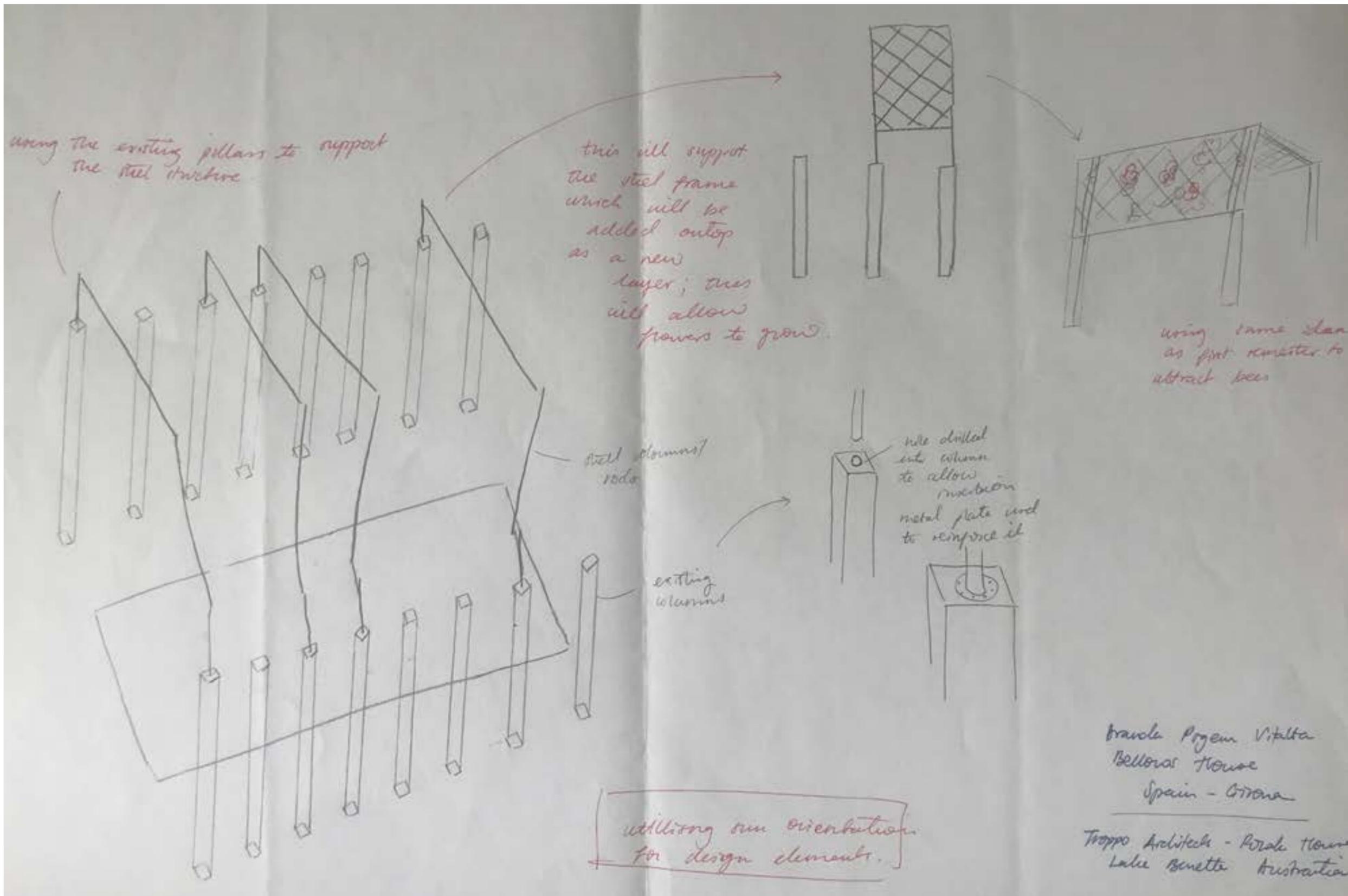


Fig 92: authors own sketches

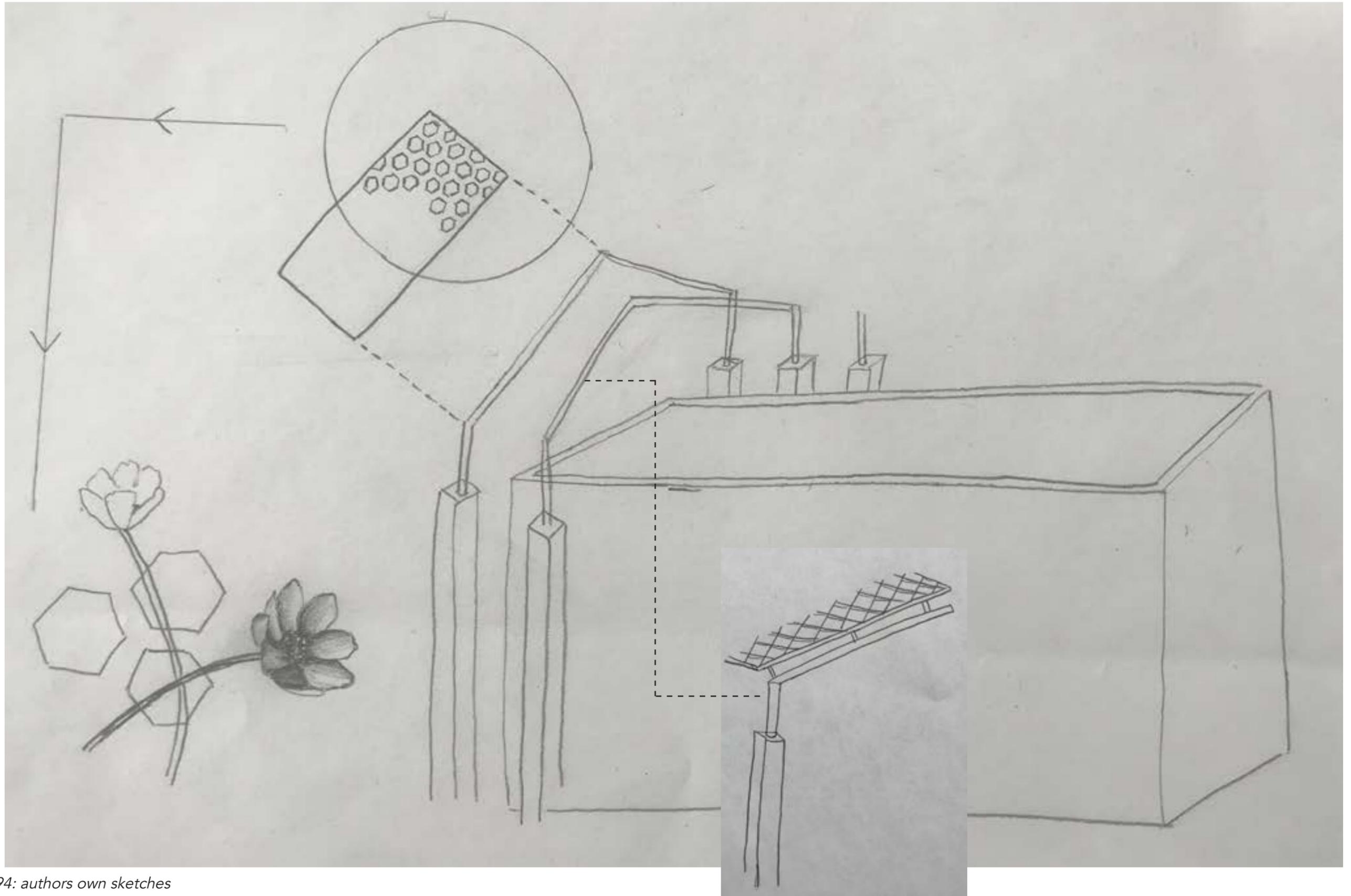
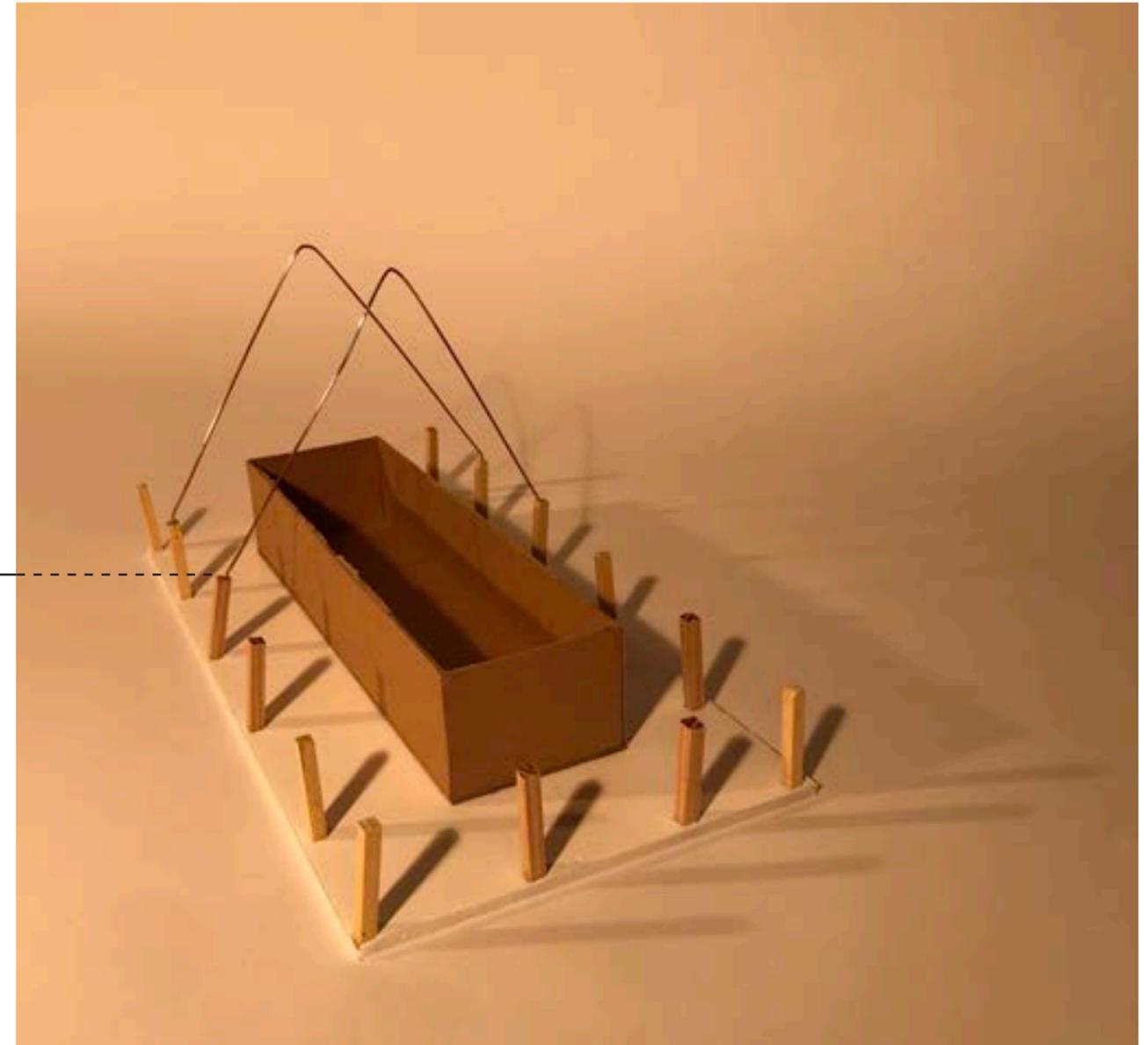
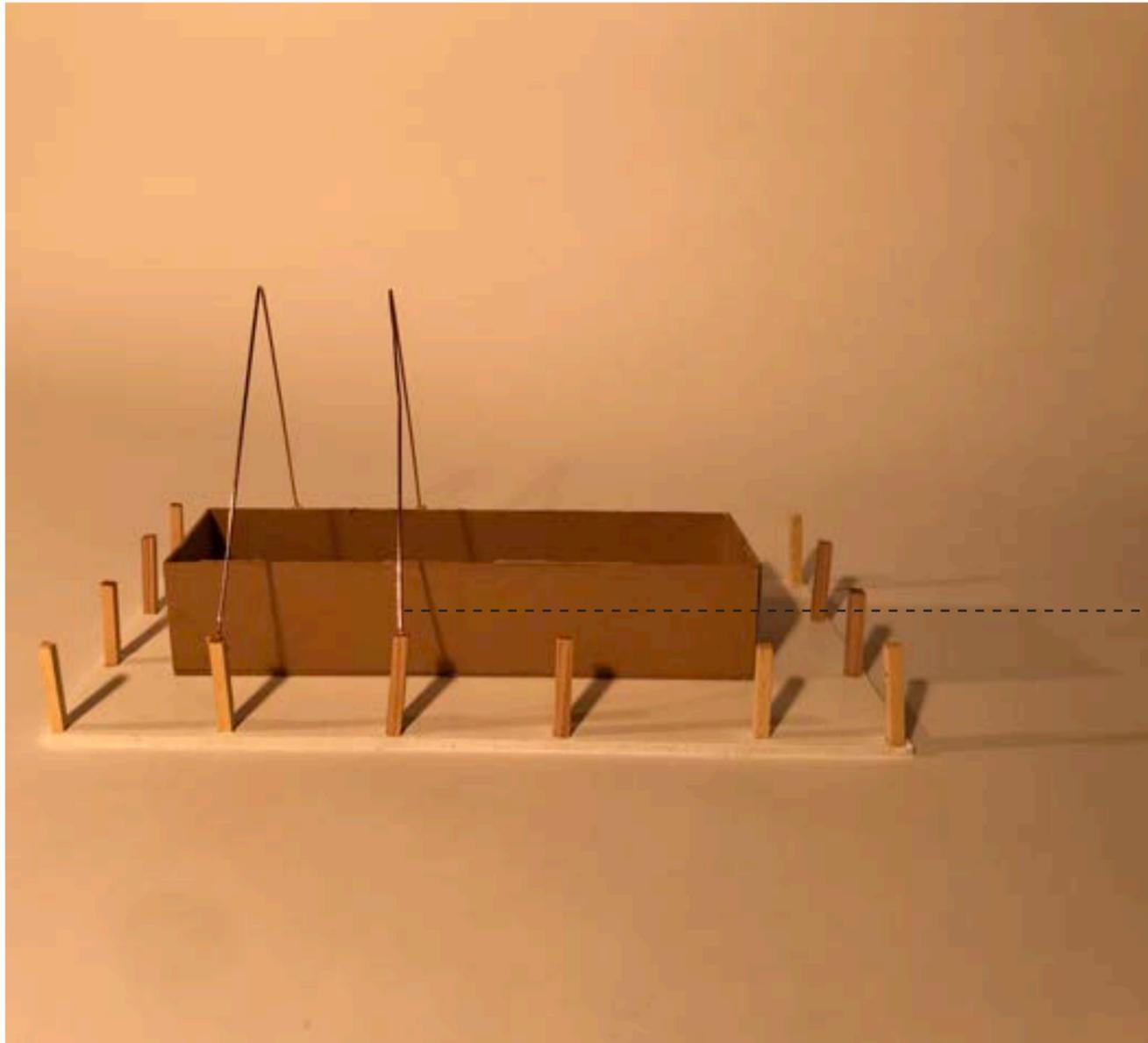


Fig 93-94: authors own sketches

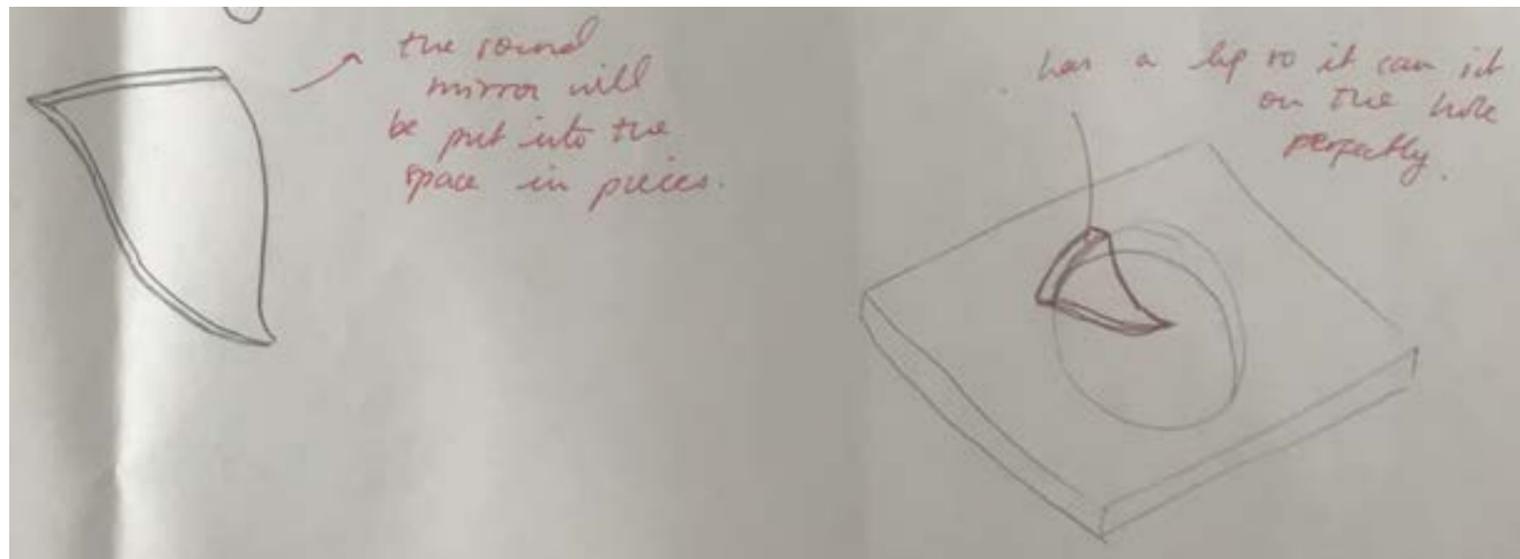
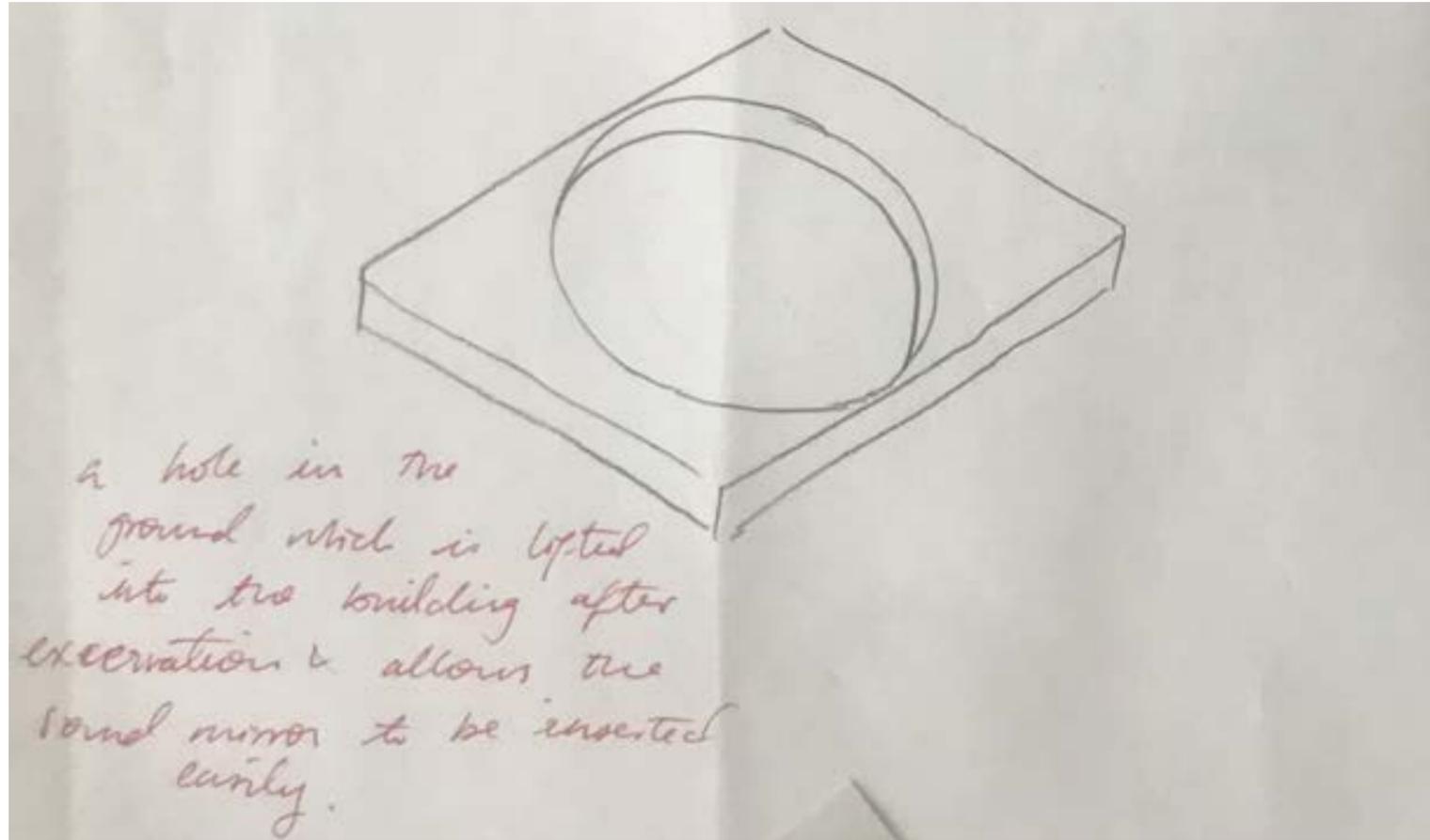


Initially using the existing posts which support the roof of this site was going to support the new metal structure which the panelling then would have been attached to (as you can see from the diagram). However this is not the best idea due to creating a lot of waste material when the building already has trusses which can be used instead, which would be a better environmental move.



Back in the day before radars were created, these massive sound mirrors were created to send out waves miles away to alert those when an areoplane was coming. The same concept can be applied to smaller scale beings or objects.

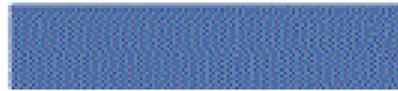
This was a key part of my monument which I also want to incorporate into the new site, as it has a similar concept.



This drawing shows the the process of the sound mirror being made and inserted into the site through the roof. Having the sound mirror come in as slices which sit on the lip on the cut out in the ground is one way this can be done. It can easily come through the roof (as it has been removed). However more ways need to be explored.

Fig 97-98: <http://www.amusingplanet.com/2016/07/the-sound-mirrors-of-great-britain.html>
99-100: authors own sketches

Reflection



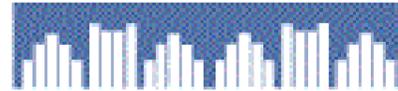
There are many types of room reflection: all affect the sound of your system. A reflection off a nearby hard surface may be almost as loud as the original sound!

Absorption



The most common way of controlling unwanted reflections is through the use of sound-absorbing foam or fiberglass.

Diffusion



A diffusive surface doesn't directly reflect or absorb sound, but scatters it in many directions. Recent diffuser designs use irregular surfaces based on mathematical number theory.



From these two material studies you can see from the images on the left that denser materials with smoother surfaces reflect more sound. This is why concrete will be used in the making of the sound mirror.

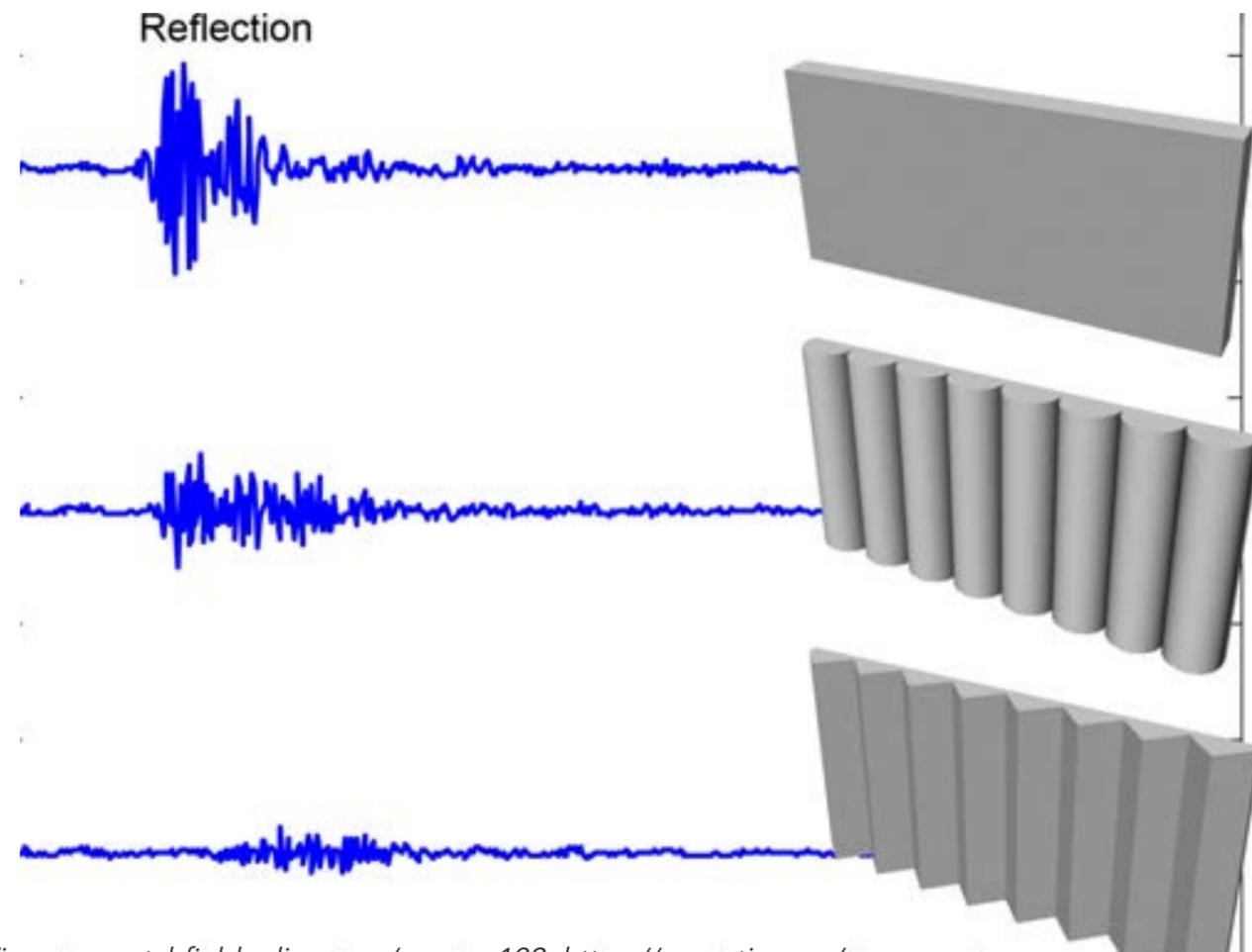
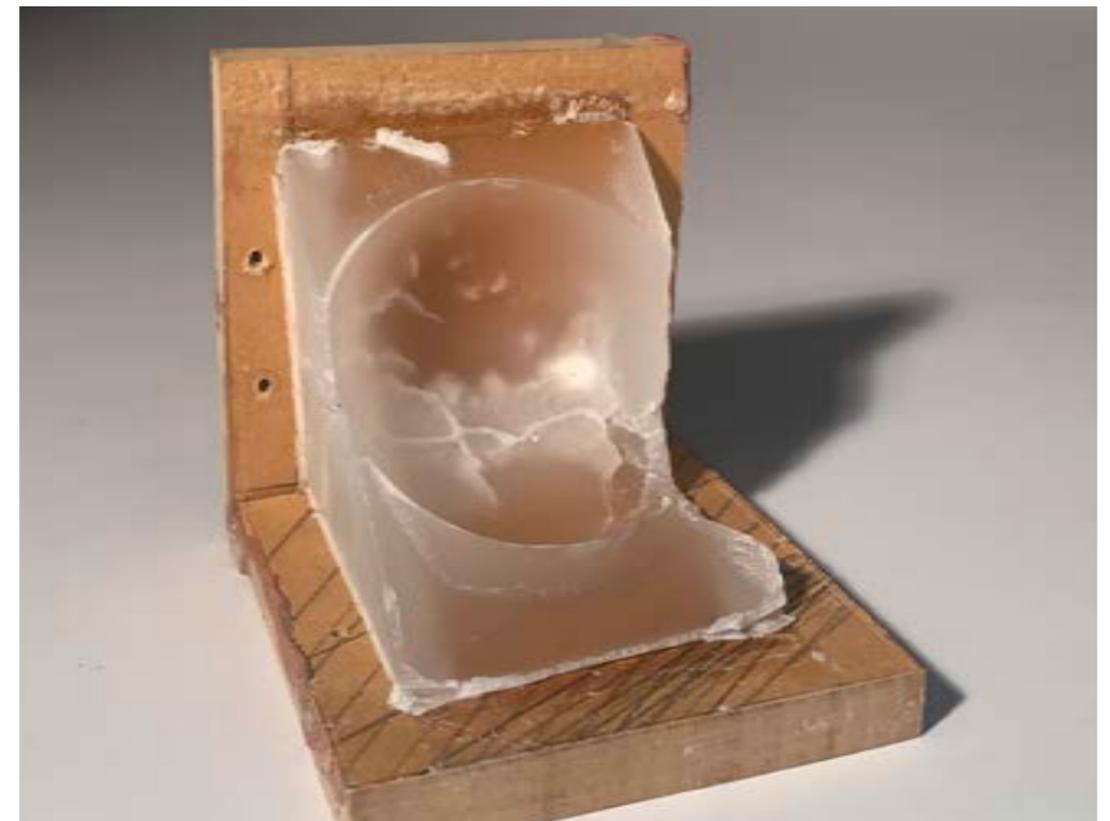
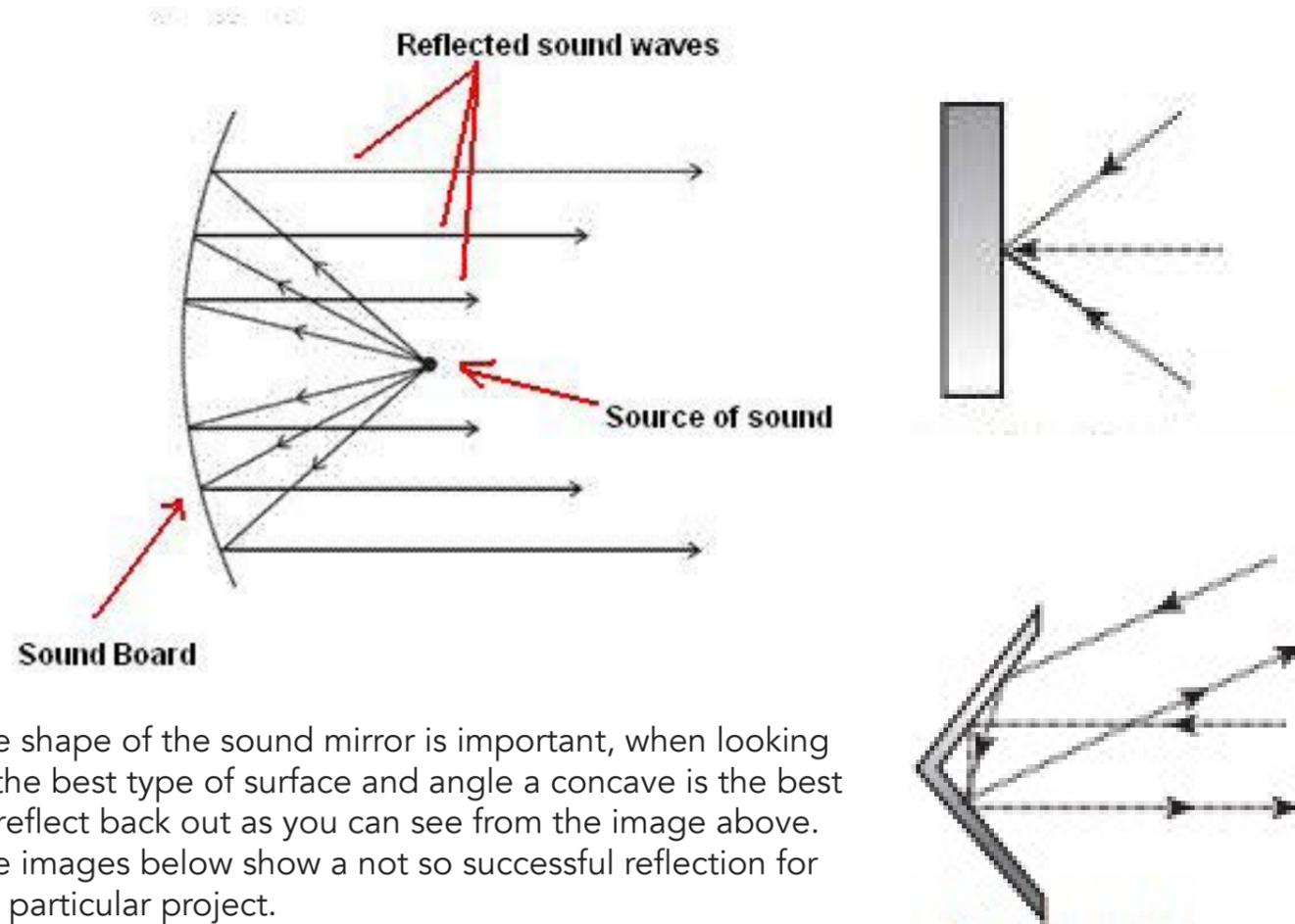


Fig 101: <https://images.crutchfieldonline.com/103-104>: authors own photographs

102: <https://acoustics.org/>





The shape of the sound mirror is important, when looking at the best type of surface and angle a concave is the best to reflect back out as you can see from the image above. The images below show a not so successful reflection for my particular project.



The shape, material and finish of some skate parks is very similar to the aesthetic I want to achieve with the sound mirror in my site. The way in which skating bowls are made is a very interesting process which can be applied to my concave and to understand the possible ways of making.

Fig 105-107: <https://i.pinimg.com/736x/b3/54/c6/b354c689c8e23b4d1d12c62e3a1dfd56--sound-waves-physics.jpg>

108: <https://d8ni2q4fyw-flywheel.netdna-ssl.com/wp-content/uploads/2017/10/Sole-Power-Skate-Parks-Bowls-1440x955.jpg>

109: <http://skatethecradle.com/>



Fig 110-114: screenshots from youtube



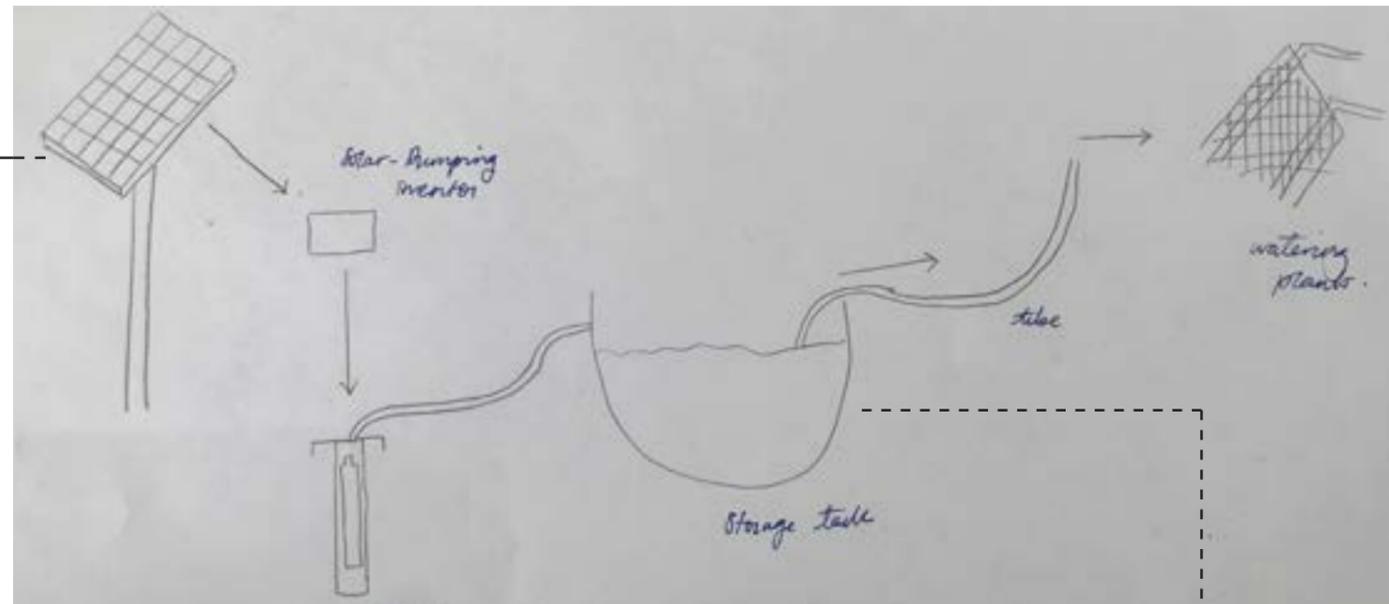
Pouring concrete into the netting which has been moulded into the shape wanted is one way of creating this sound mirror. This is a similar process to the way the skate park bowls are made.

Another way this can be made is by creating the form wanted from a mould or an existing shape, and pouring the mixture on top and letting it set. This can then be used to create the sound mirror. This would have to be done in a few layers to create a thicker form.

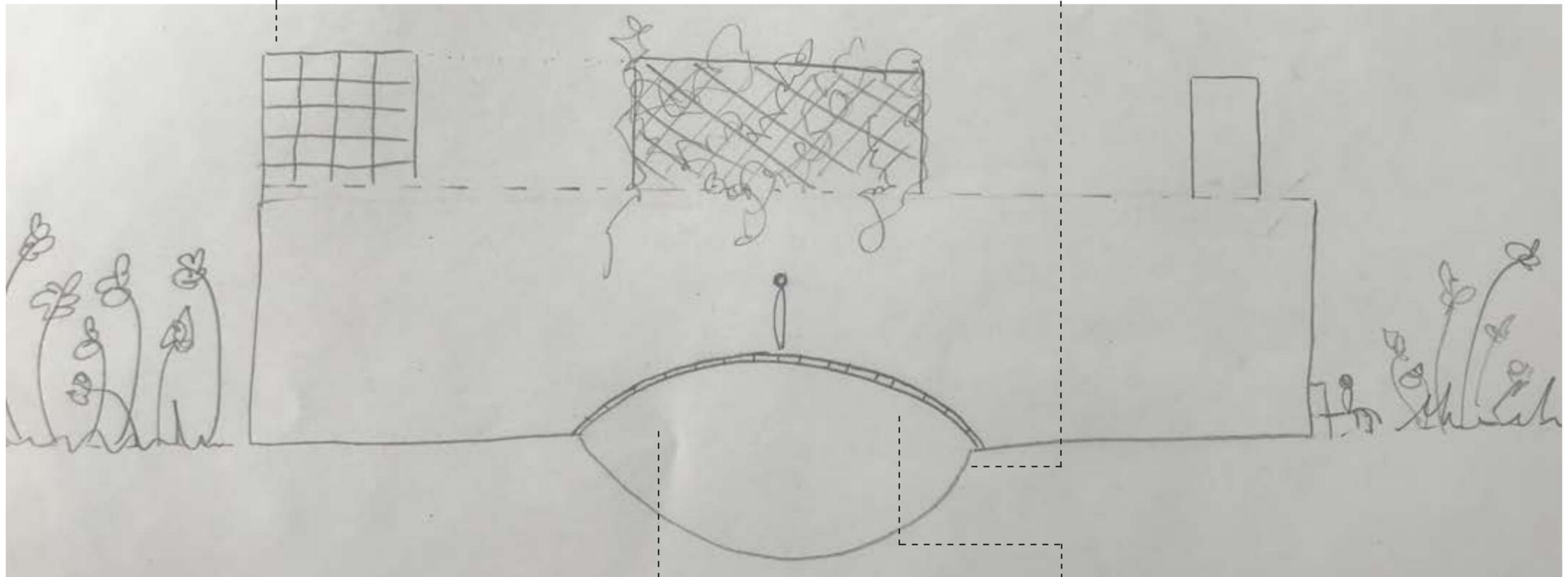


Fig 115-118: screenshots from youtube (<https://www.youtube.com/watch?v=qjfzLAGG4YY>)

The solar panel or PV ray on the roof of the design will generate electricity which will be what powers the pump.



The pump will then transfer the rain water which has collected in the sound mirror over time due to the open roof, and use this to water the plants growing on the roof and around the site. This will mean that it will not overflow over time, but it will also be used in an ecofriendly way.



Excavating below the host building will allow the sound mirror to be seen from the outside. It will also add an element of elevation and floatation which will show a holiness as the space would be on a pedestal.

A bridge on the inside that goes across the sound mirror will allow the habitant to experience a more one on one connection when speaking into the concave. It also gives people a different angle to view the space from.

Having a mechanical water pump also attached and allows people to use it if they want (not for personal drinking use). Helping to water the flowers may make some people feel more connected to the bees and as though they are giving back in some way.

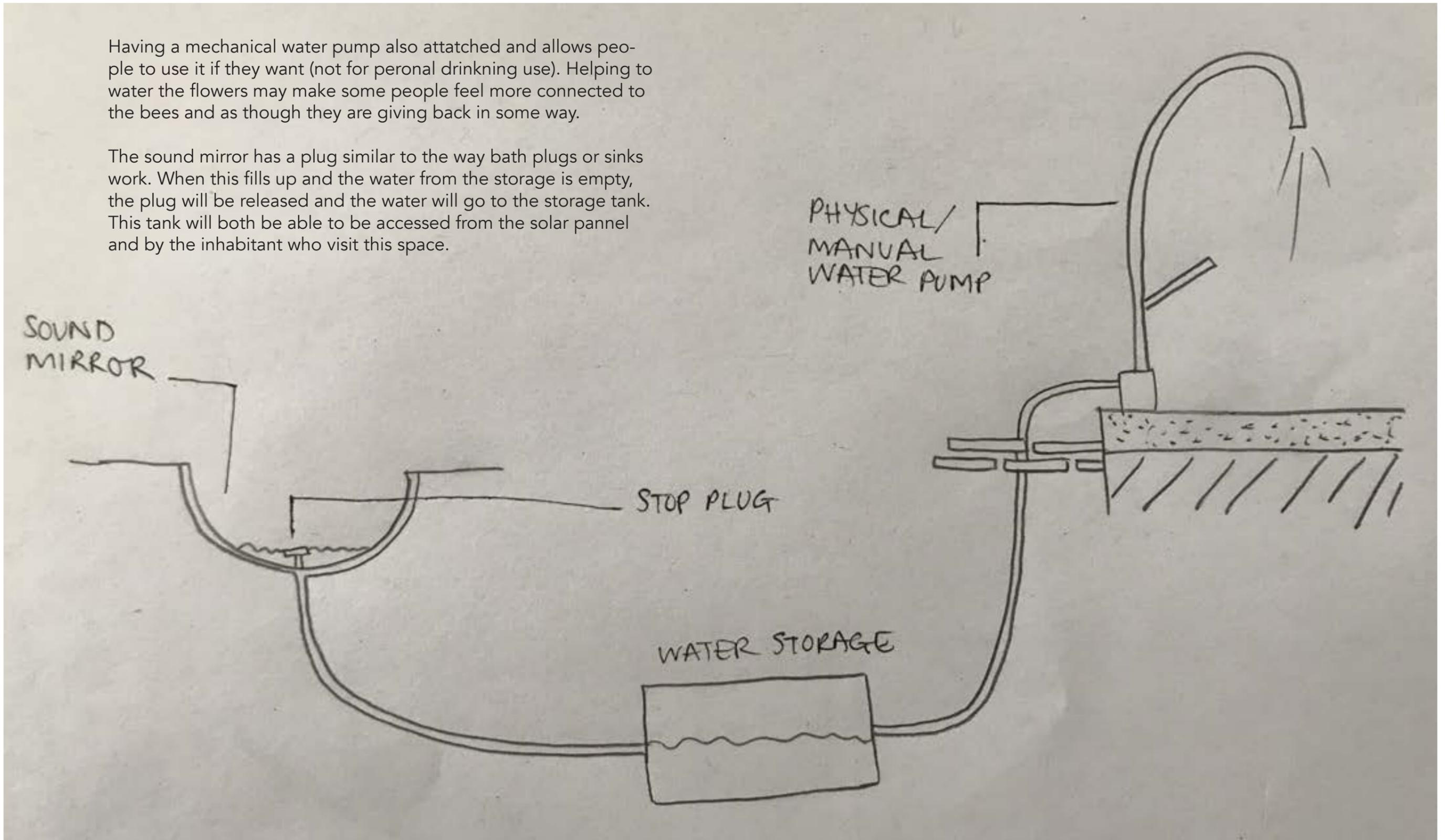
The sound mirror has a plug similar to the way bath plugs or sinks work. When this fills up and the water from the storage is empty, the plug will be released and the water will go to the storage tank. This tank will both be able to be accessed from the solar panel and by the inhabitant who visit this space.

SOUND MIRROR

STOP PLUG

WATER STORAGE

PHYSICAL/
MANUAL
WATER PUMP





“In construction terms, excavation is the process of removing earth to form a cavity in the ground.

Common types of materials being excavated:

- Topsoil excavation:

This involves the removal of the exposed layer of the earth’s surface, including any vegetation or decaying matter which could make the soil compressible and therefore unsuitable for bearing structural loads. The depth will vary from site to site, but is usually in a range of 150-300 mm.

- Earth excavation:

This involves the removal of the layer of soil directly beneath the topsoil. The removed material (referred to as ‘spoil’) is often stockpiled and used to construct embankments and foundations.

- Rock excavation:

This is the removal of material that cannot be excavated without using special excavation methods such as drilling (by hand or with heavy machinery) or blasting with explosives.

- Muck excavation:

This is the removal of excessively wet material and soil that is unsuitable for stockpiling.”



The reasons people do this may be because they want to create a basement in their house which doesn't already have one, or because they want to move their whole house to a different location (with everything such as furniture still in tact and inside).



Fig 124-125: screenshots from youtube video 'how to move an entire house' <https://www.youtube.com/watch?v=b0kqz2VJMUI>



Fig 126-129: screenshots from youtube video 'how to move an entire house' <https://www.youtube.com/watch?v=b0kqz2VJMUI>

Process of lifting an existing building.

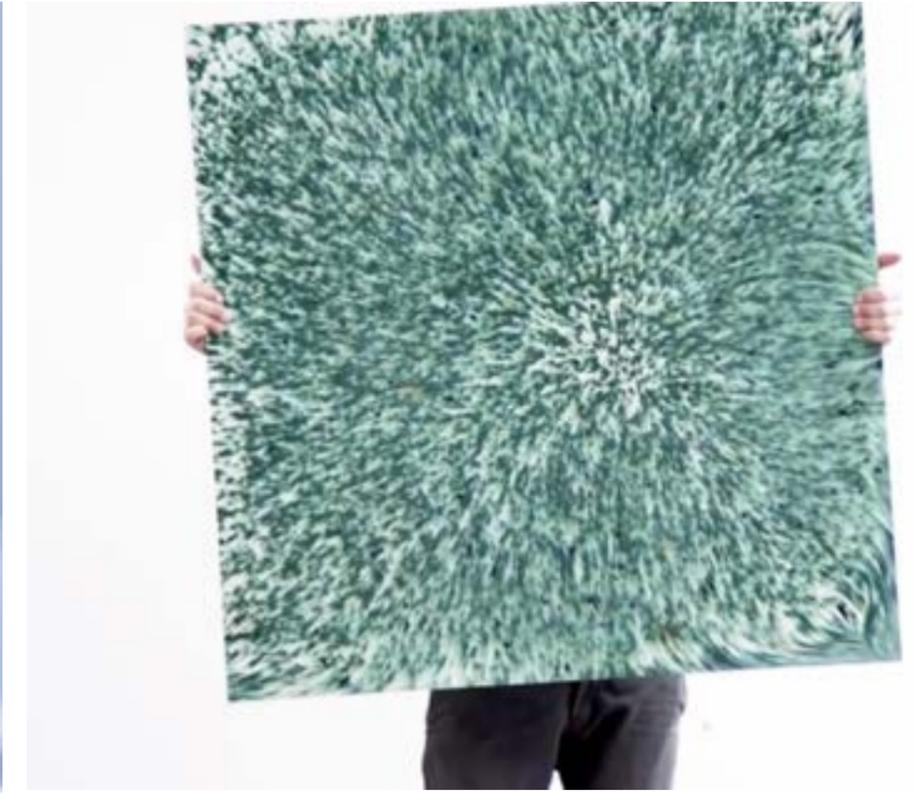
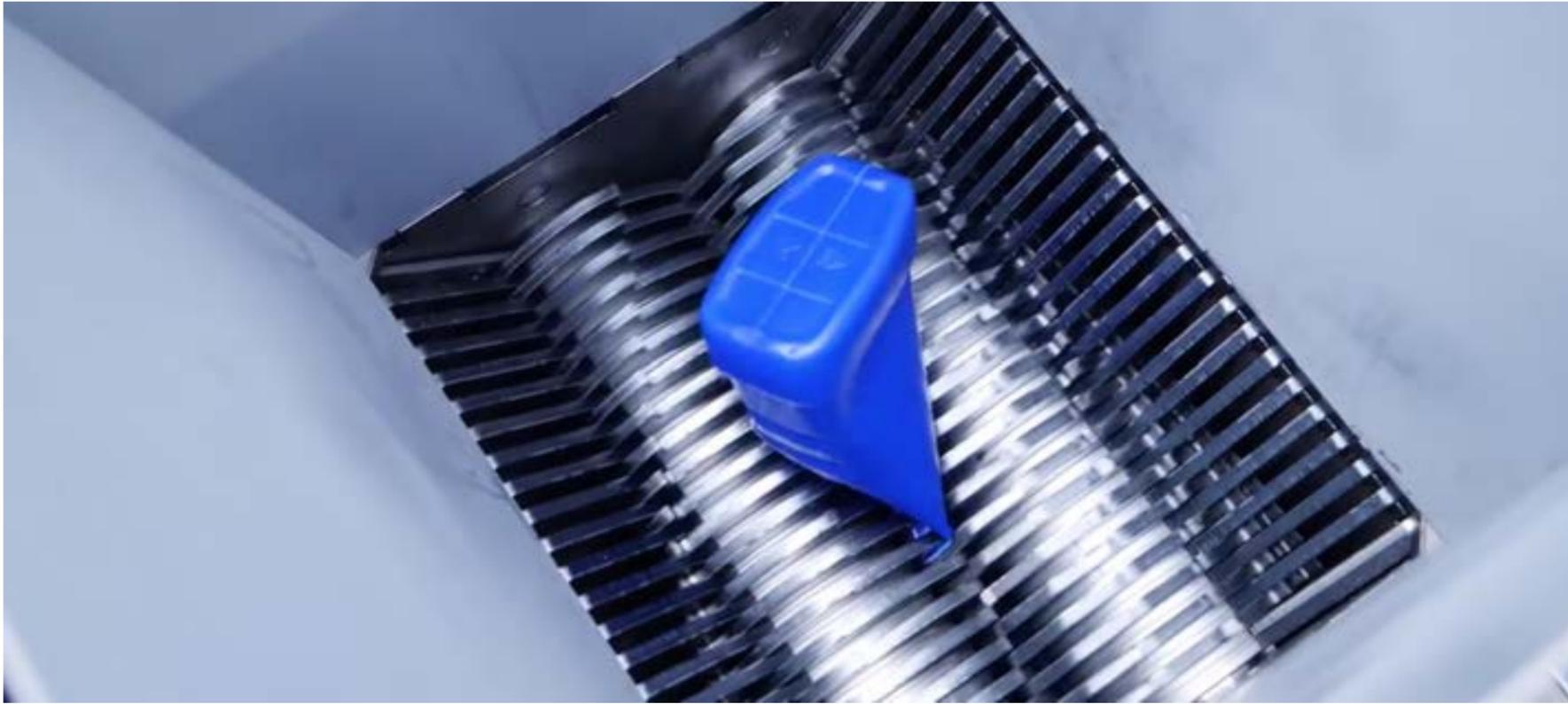


A student from Denmark has been working to turn plastic and waste into building materials. "In the first stage, the plastic garbage is collected and washed, if necessary. Then villagers grind it into small pieces. Initially, this can be done by simply cutting the trash with scissors or knives. After that, the plastic particles are stuffed in a mold and placed into a sun grill, which heats the plastic using just the power of the sun. After about one hour on the grill, the plastic has melted. In the final step, the cooled down plastic is removed from the mold to reveal a plastic brick." These bricks have two holes in the to make it easy to stack these using bamboo poles which is more accessible.

"These plastic walls act as a foundation, similar to the traditional mud bricks used in villages in India and can be covered with a layer of clay just like traditional houses. This has the positive side effect of protecting the plastic from the sun. But these homes would also have a notable advantage. Whereas mud bricks often can't withstand monsoon rains and houses are frequently washed away, houses with plastic frames should be more durable."



Plastic is the biggest waste material on earth which takes a longer time to recycle compared to other materials such as paper or cardboard. I am looking at ways I can use these and incorporate them into the site, but unfortunately the aesthetic does not go with the programme I am designing.



When looking deeper into ways plastic can be recycled I came across 'The Precious Plastic Universe' which is a group of people across the planet who are collection plastic and using specific machinery to create products to sell such as plugs, chairs and tiles (image on the left).

Since the previous method of reusing plastic was very unappealing viisually for my project, looking at the image above where plastic has been used to make these beautiful sheets which can be used as a glaze for the tiles the interior of the host building will be using.

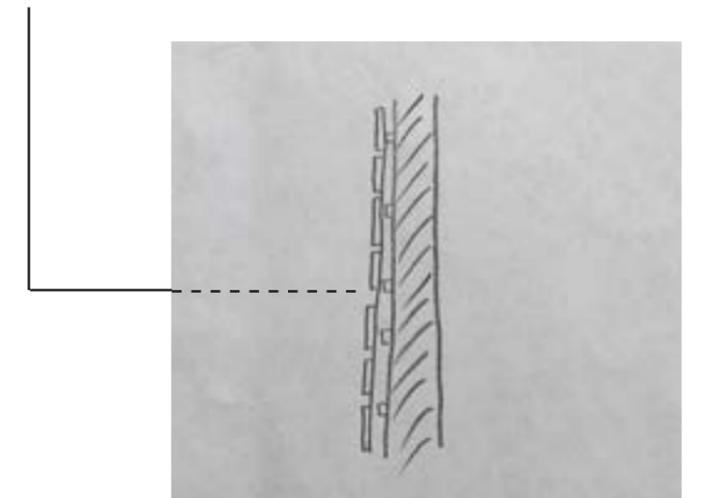


Fig 132-134: <https://preciousplastic.com>
135: authors own sketch



Looking at how colours work when a bee is flying past is a little study I carried out to see the effects of each one.

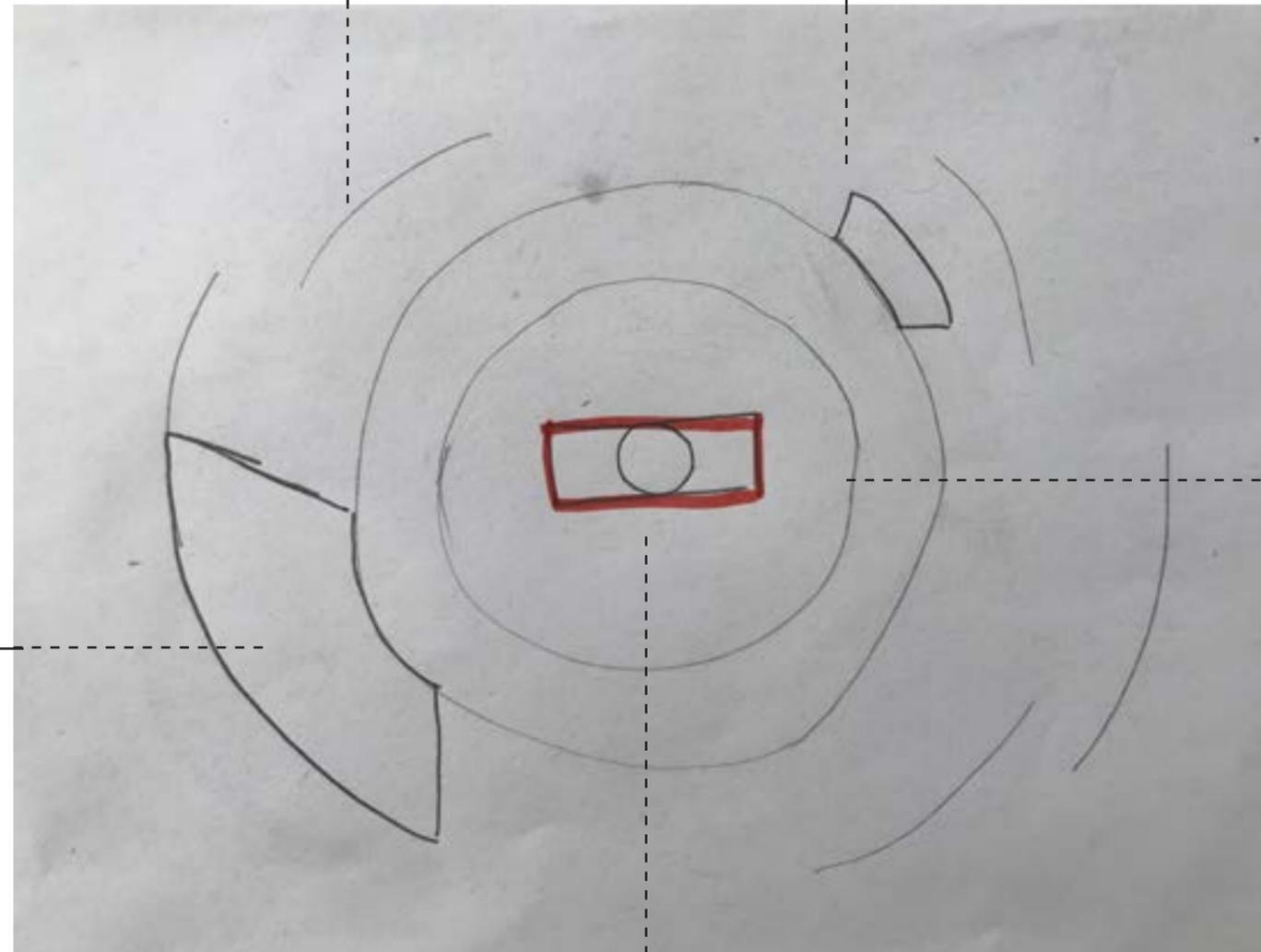
These tiles will vary in plain and beautifully painted pieces which communicate some important information through the medium of art and diagrams.



Fig 136-142: authors own photographs
143: <https://pinterest.com>
144: <https://etsy.co.uk> (mexican tiles)

A 'slice' of the sound mirror which is dotted around the site with some tile work. Others with mesh and flowers to attract bees. Some with poems and others with information such as maps.

A bench also surrounded with a garden of flowers.



The activities inside the space are too intimate for there to be toilets inside or very nearby. Which is why one of these 'pods' will also home some toilets (disabled access also).

Ripples that mimic sound waves will surround the space and these will be a guide for where I will be placing other pieces of this space around the park.

Host Building

Fig 145: authors own sketch