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**Scholarship 2023**  
**Design and Visual Communication 93602**

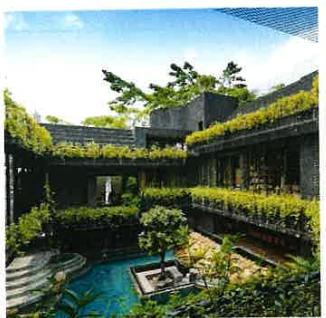
**OUTSTANDING SCHOLARSHIP  
EXEMPLAR**

# THE CAUSTICS HOUSE

## LEVEL 3

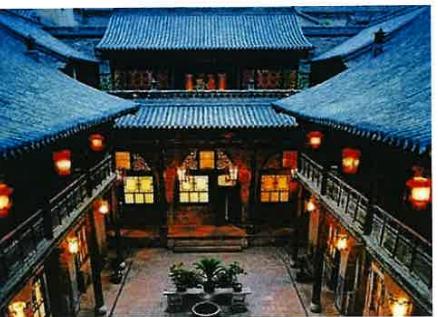


# RESEARCH ANALYSIS

 Ties in elements of traditional Japanese architecture: Wooden flooring + functional/aesthetic garden spaces.

 Walls/windows with thick cross design. Not much functional purpose but I enjoy the aesthetic.

 Very much nature incorporated design conscious.

 I like the idea of nature playing a functional & aesthetic role.

 Shingles are stacked on top of one another to create the layered effect sought after in many contemporary designs.

 Inner courtyard with walls facing in on other sides. Could be a location for gathering and recreational use, perfect for a multi-generational family.

 Use of wood for an "unfurnished" look. No paint or texturing.

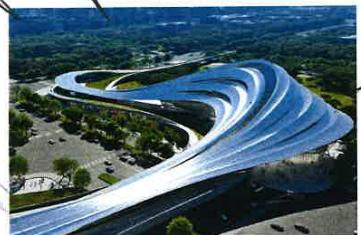
# - DESIGNER STUDY -



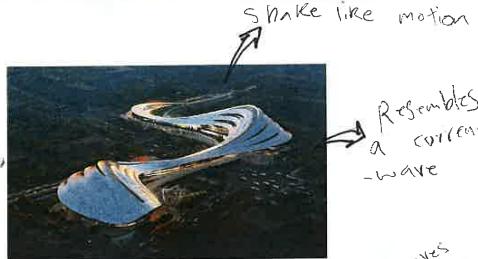
Zaha Hadid was an Iraqi-British artist and designer recognised as a major figure in architecture of the late 20th and early 21st centuries.

Her work is heavily inspired by forms found naturally within nature. The movements of waves, light and flora all play subtle large roles within her work.

*Big concrete formation = dominance*



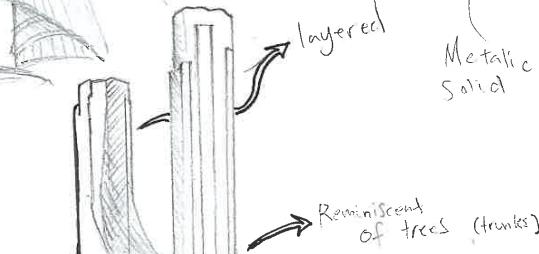
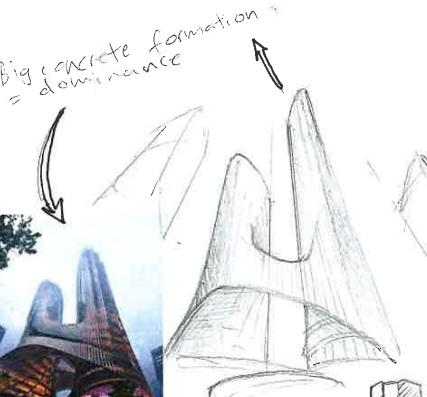
Organic curves



shake like motion

Resembles a current wave

Weaving motion



layered

Metallic and solid but wavy

Reminiscent of trees (trunks)



Modern & unique



Tree trunk looking structure again



tiered buildings



tree canopy



organic

wavy design



Shapes layered on top of each other

Holes

Rounded corners (no sharp edges)



waterfall?



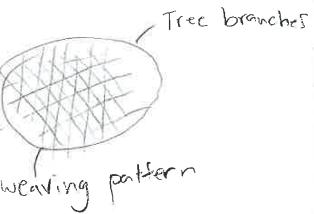
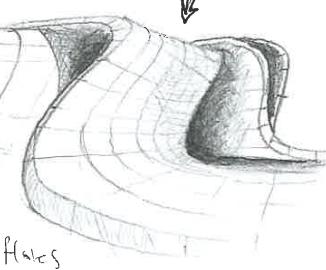
Rock like formation  
Stacked Stories

flowing Wavelike shape



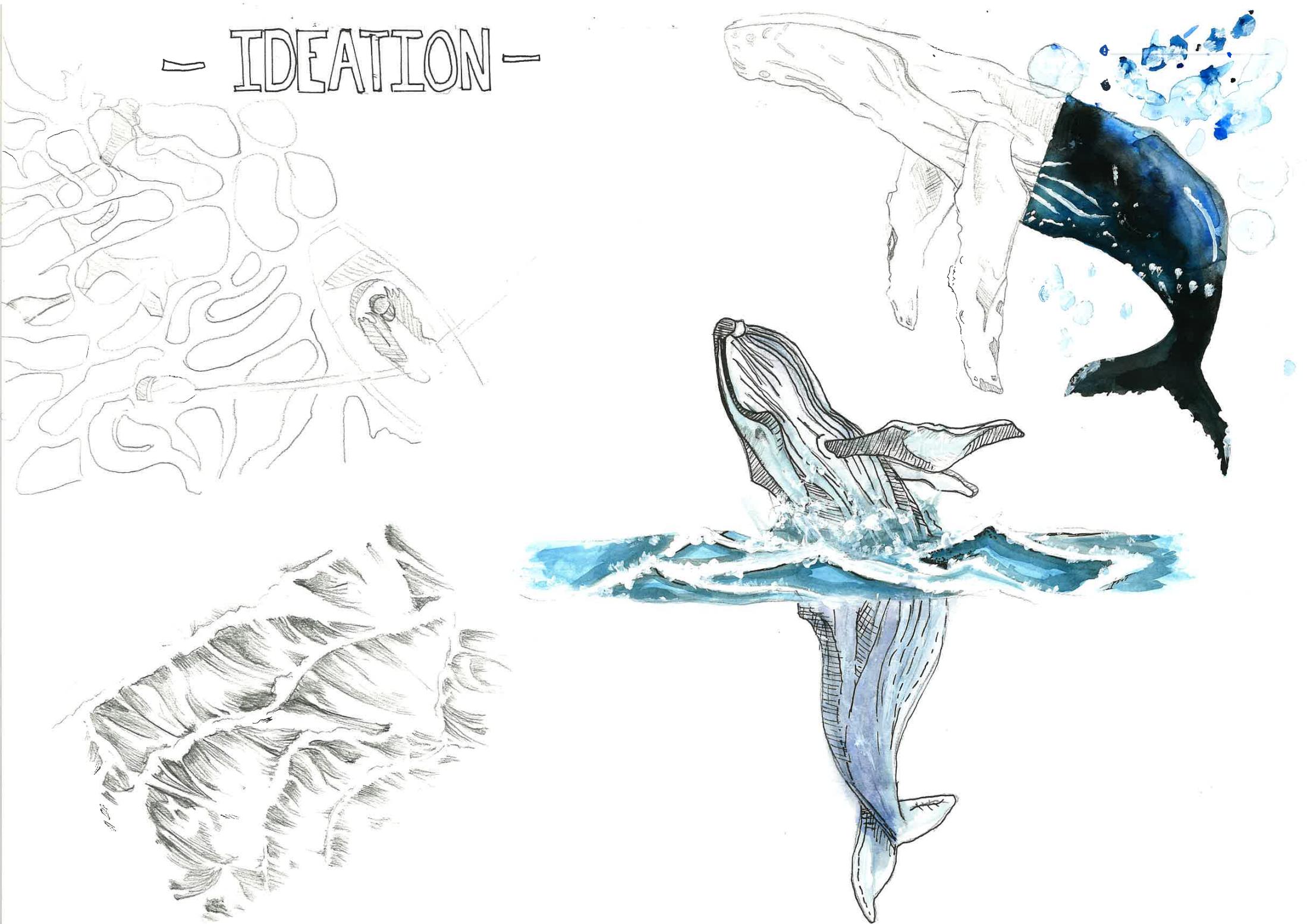
stacked

Holes



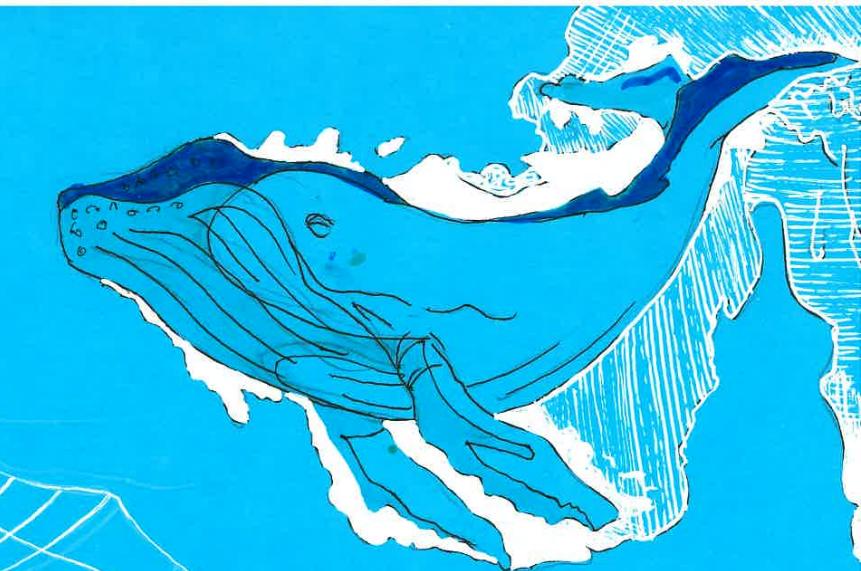
Tree branches  
weaving pattern

# - IDEATION -

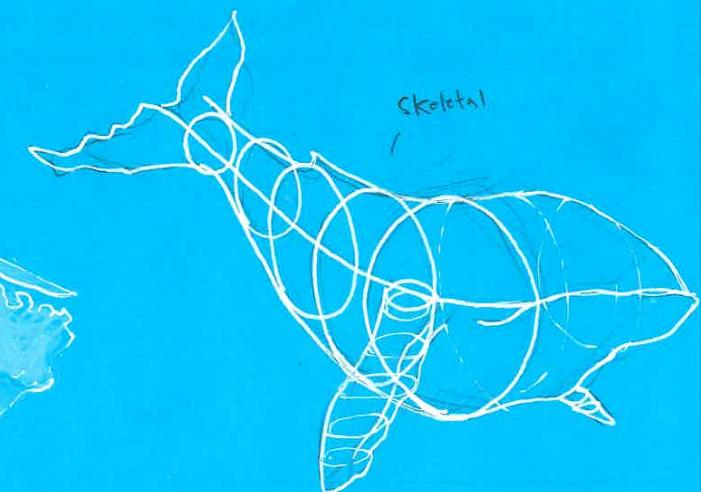




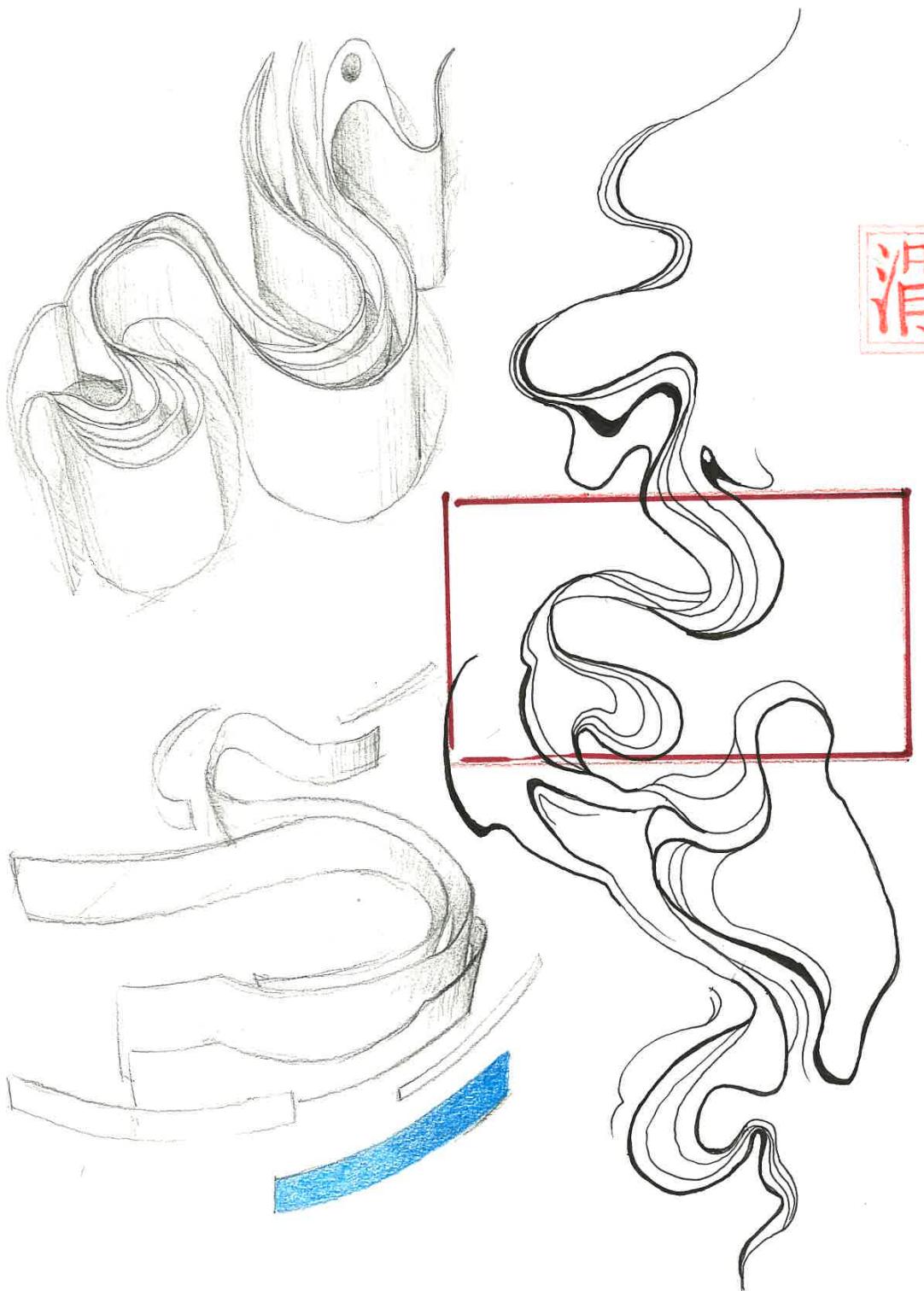
Wave Skeleton  
Mesh



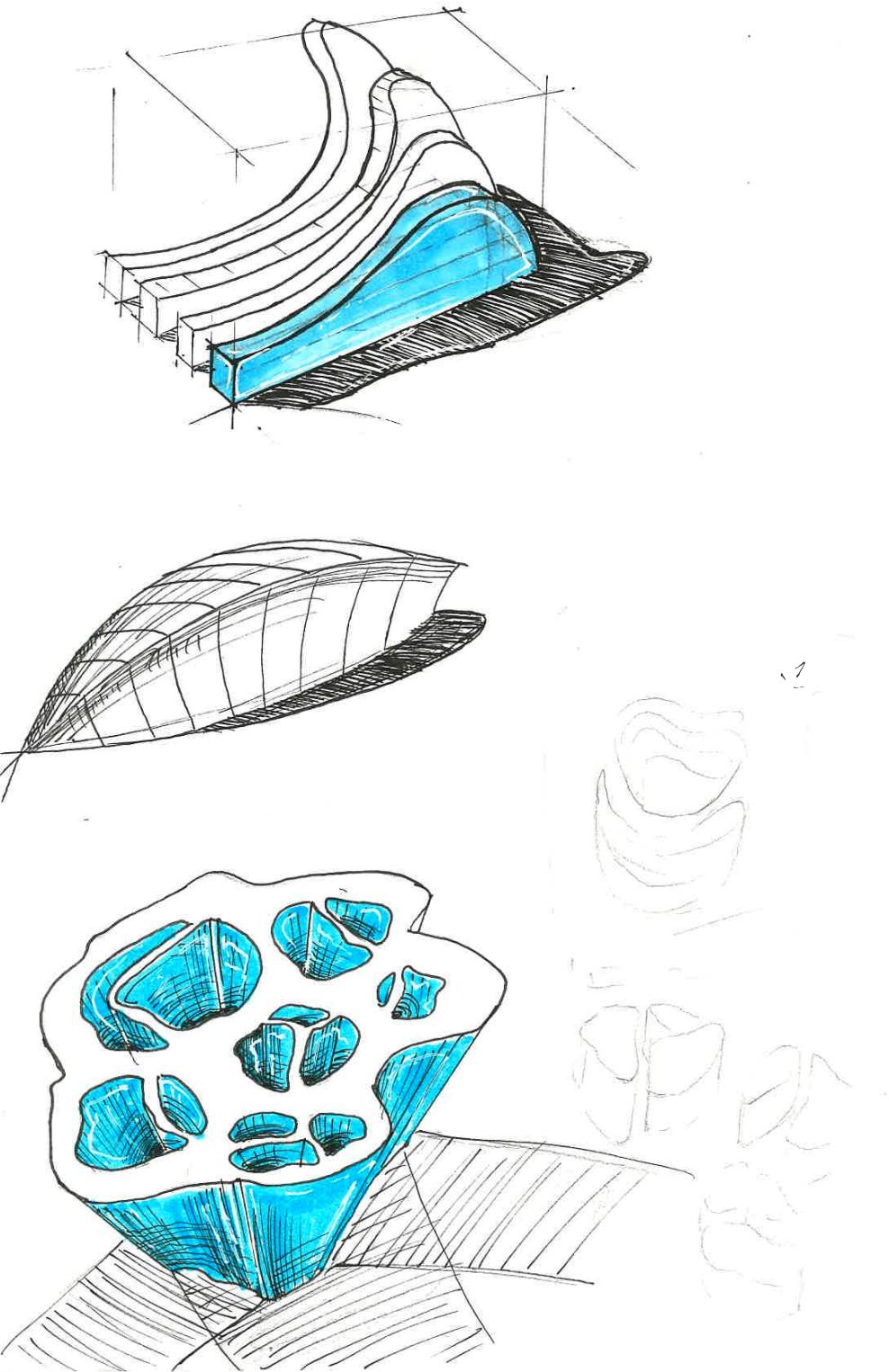
whale diving  
into ocean

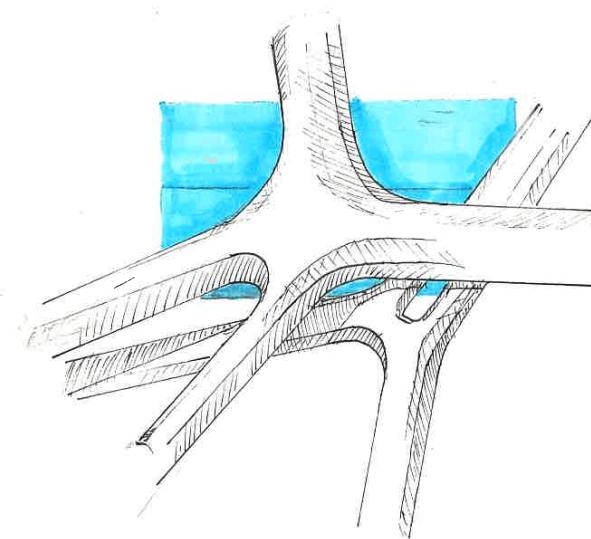
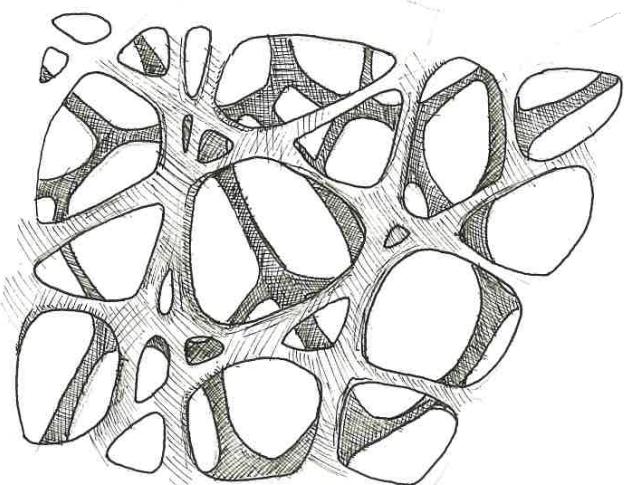
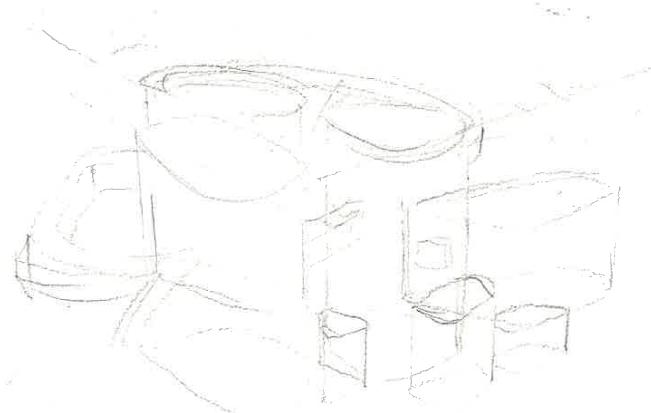
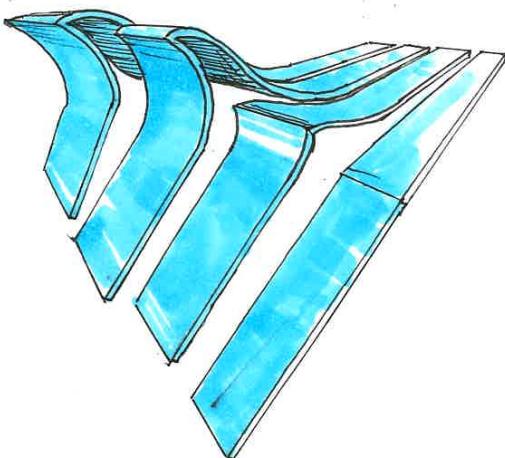
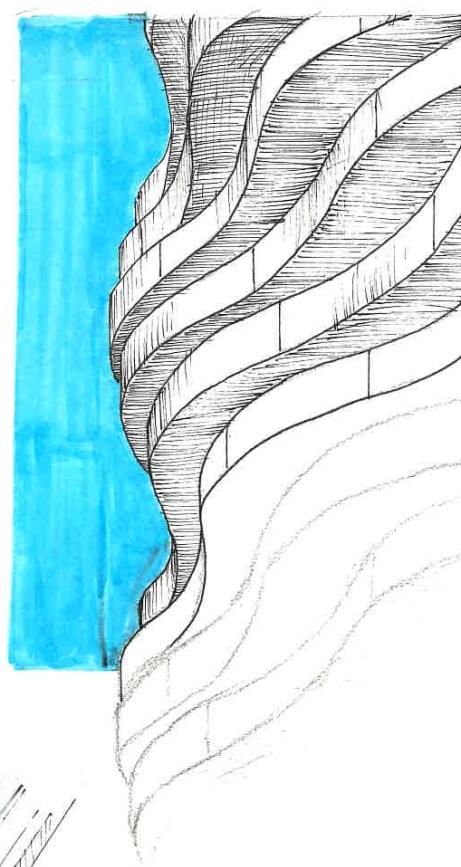
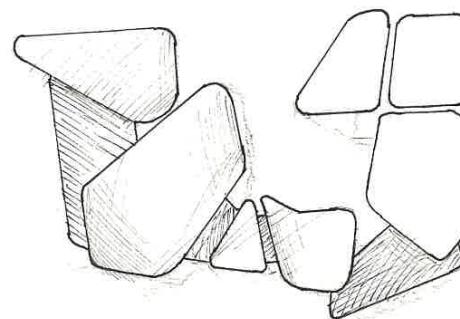
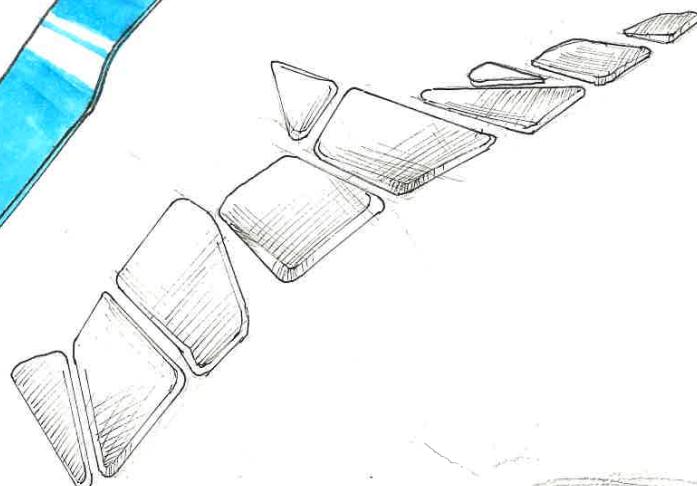
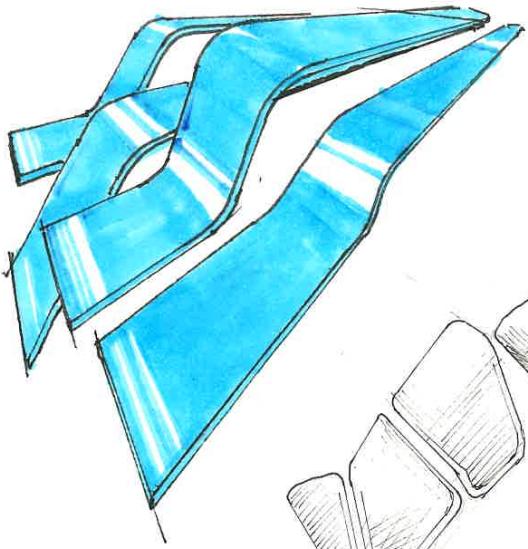


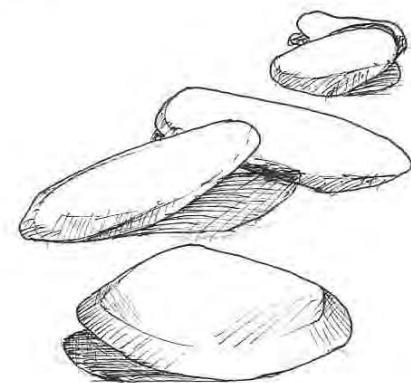
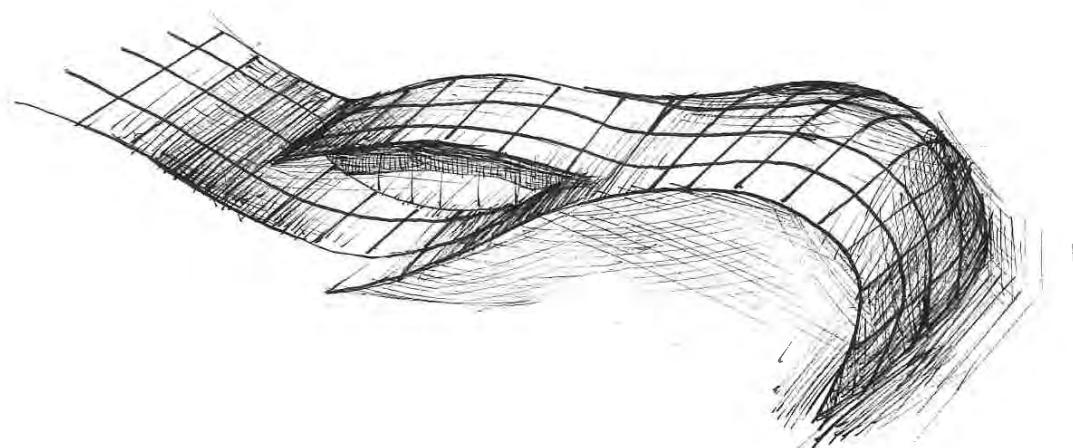
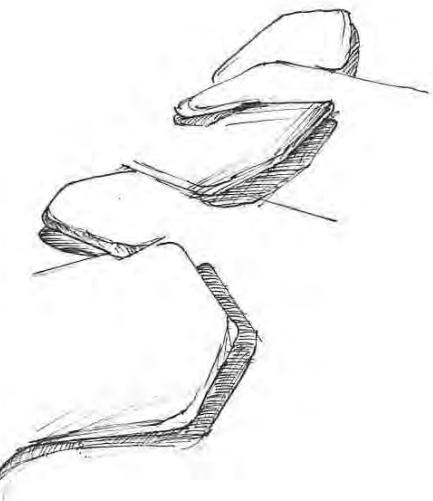
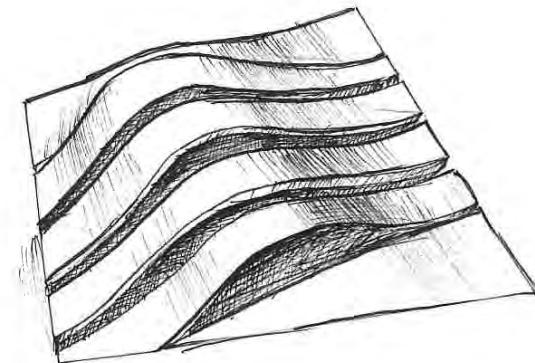
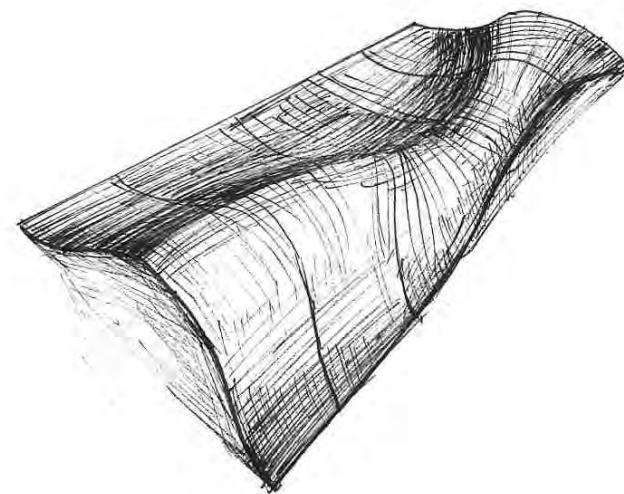
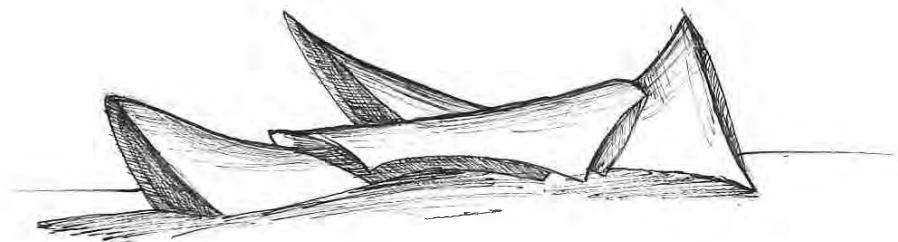
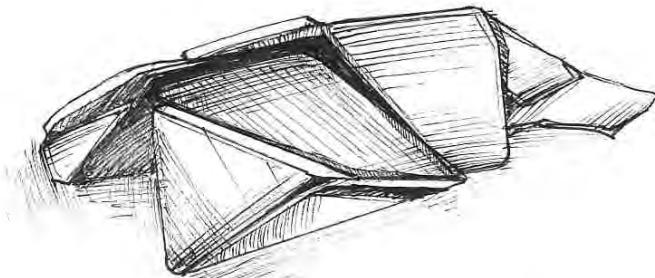
Skeletal

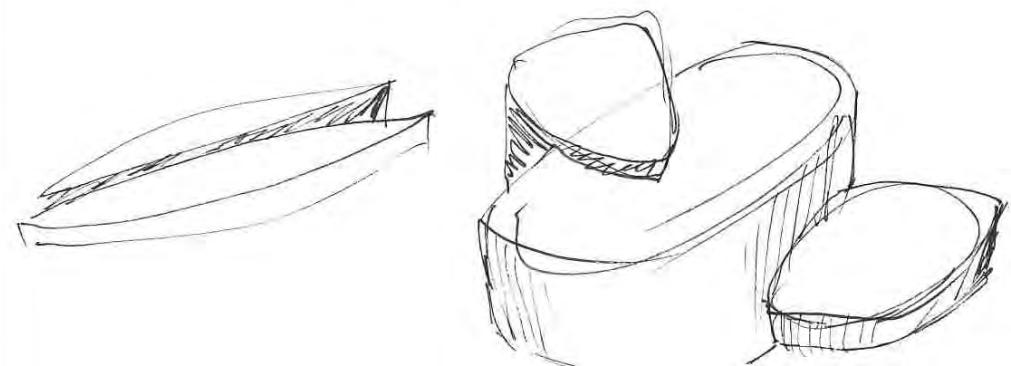
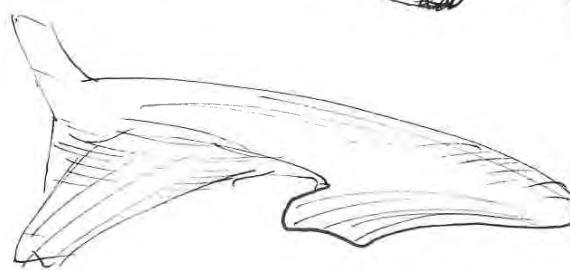
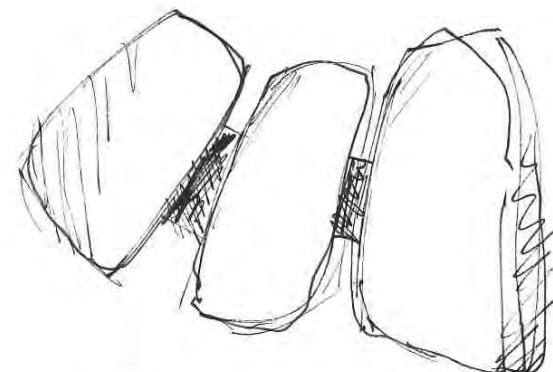
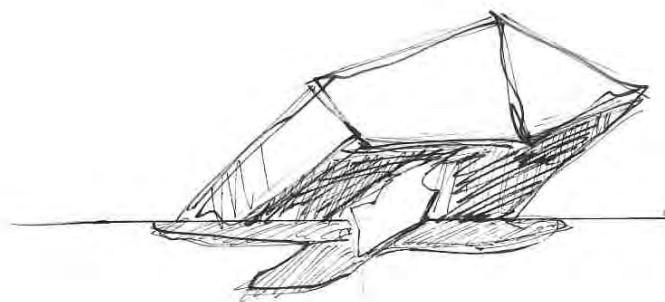
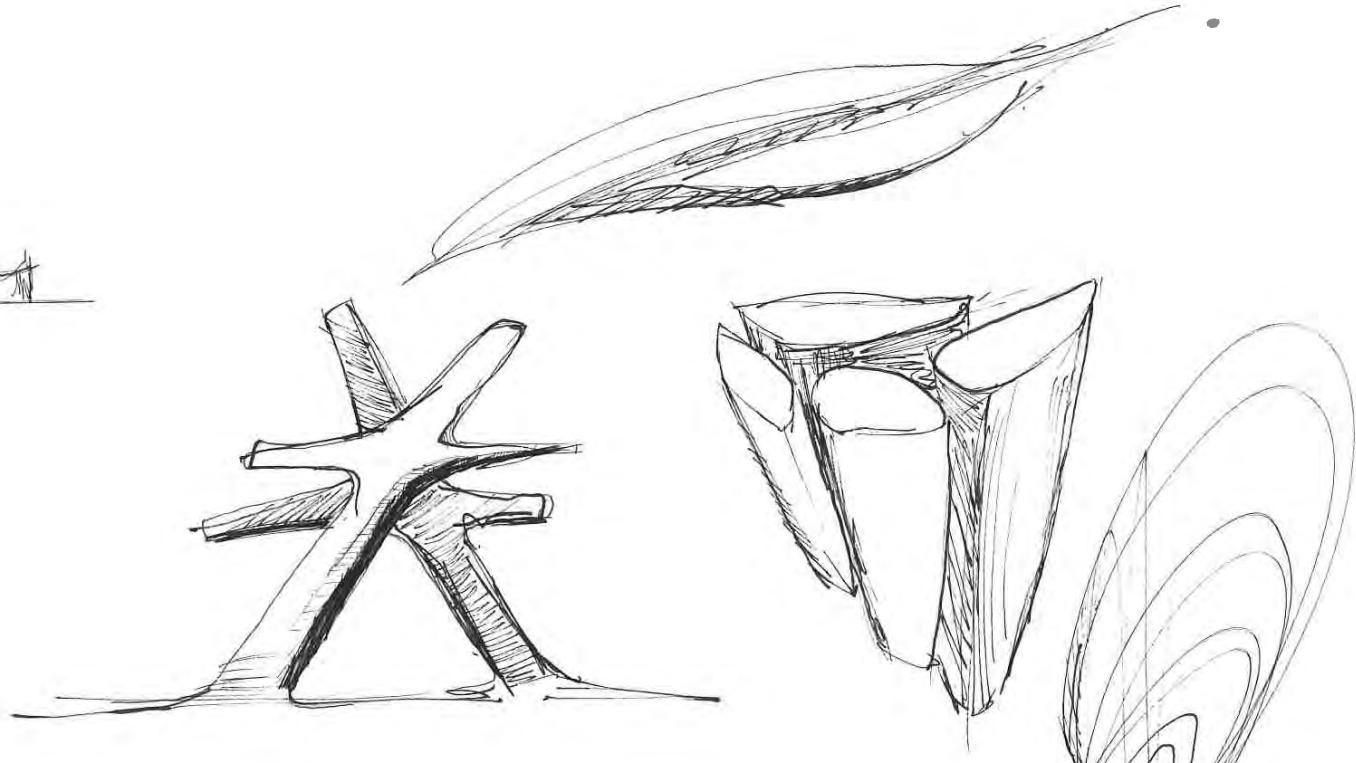
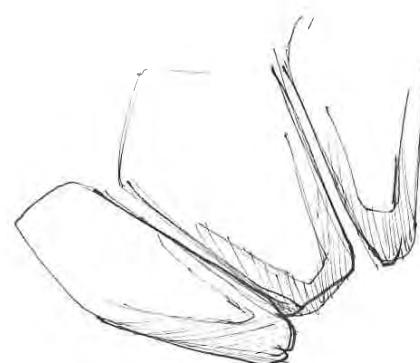
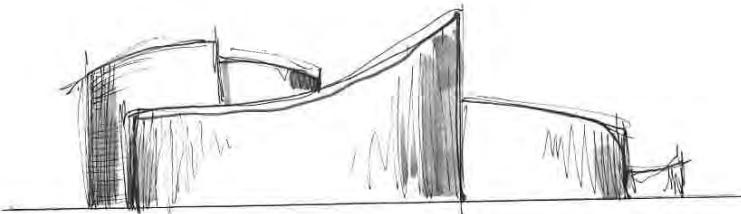


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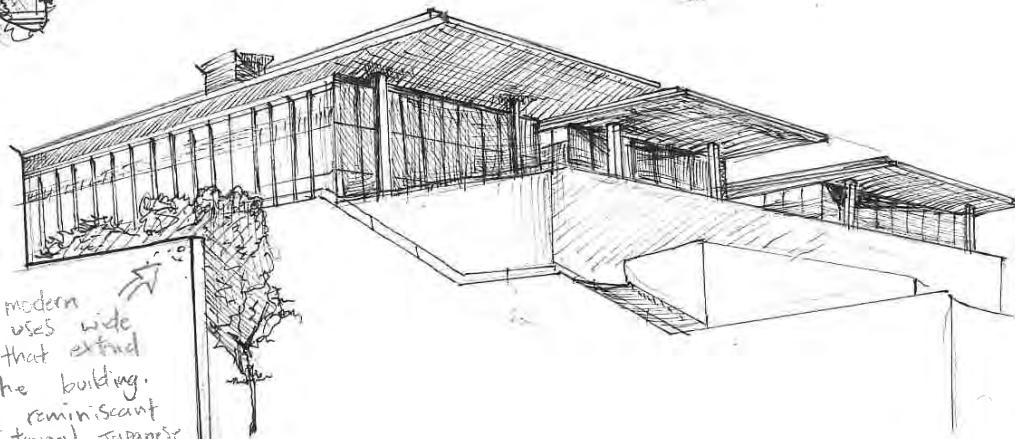
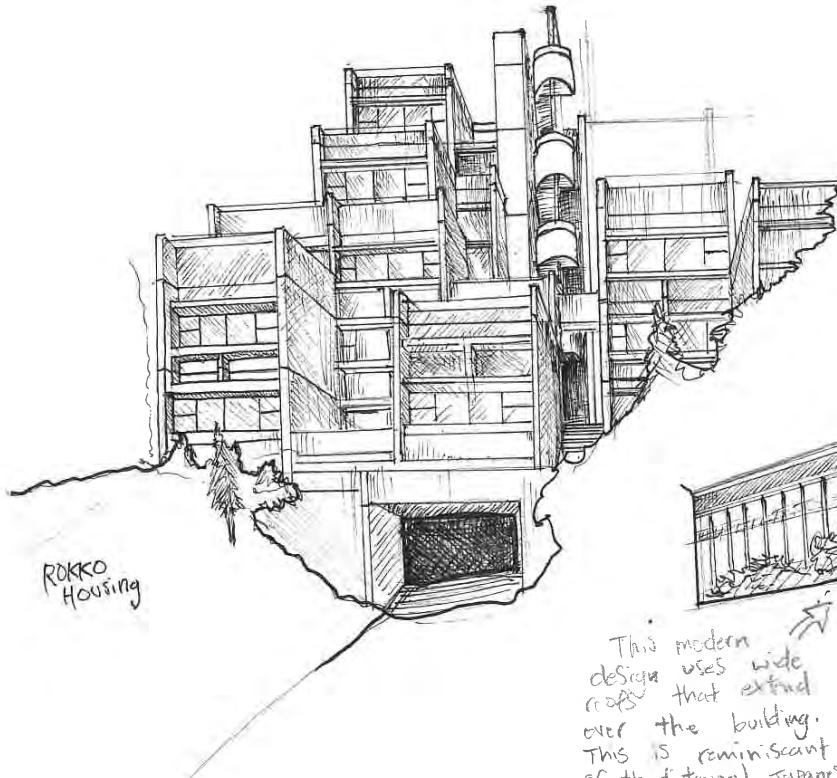




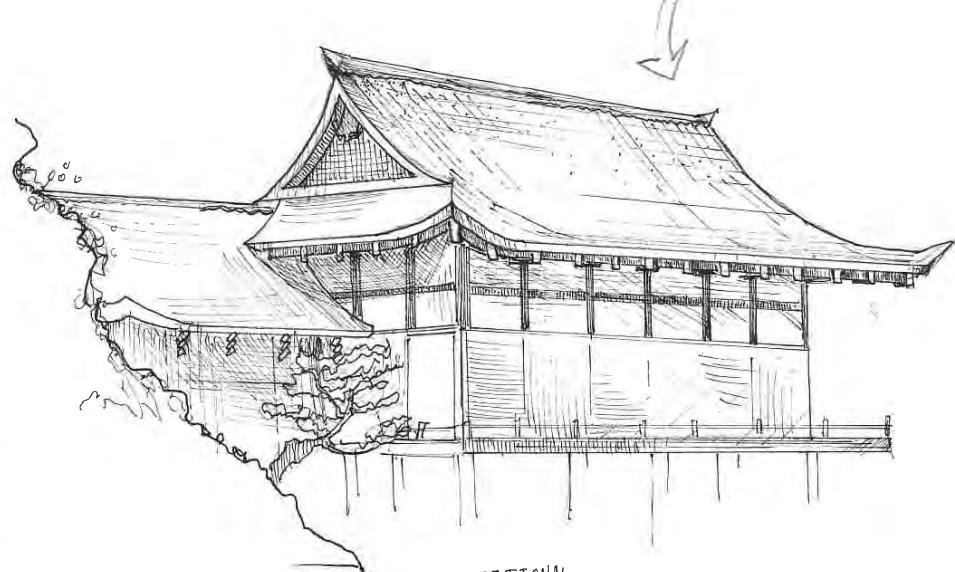


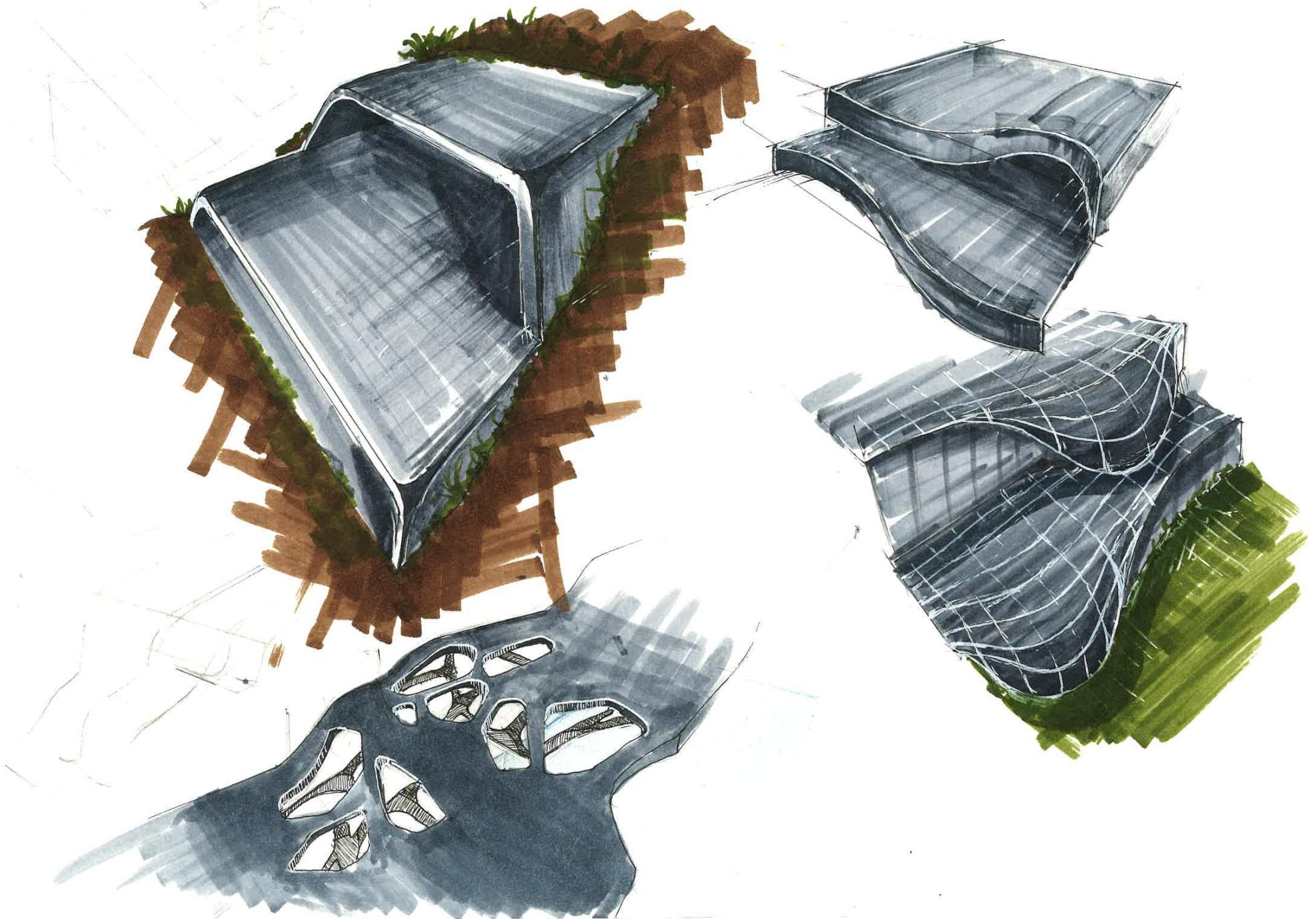


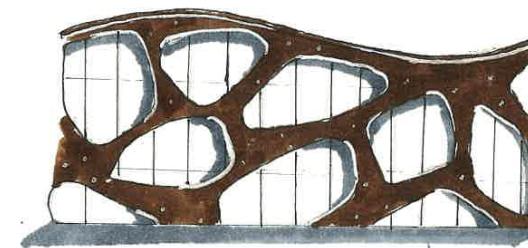
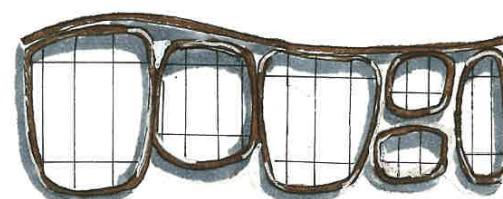
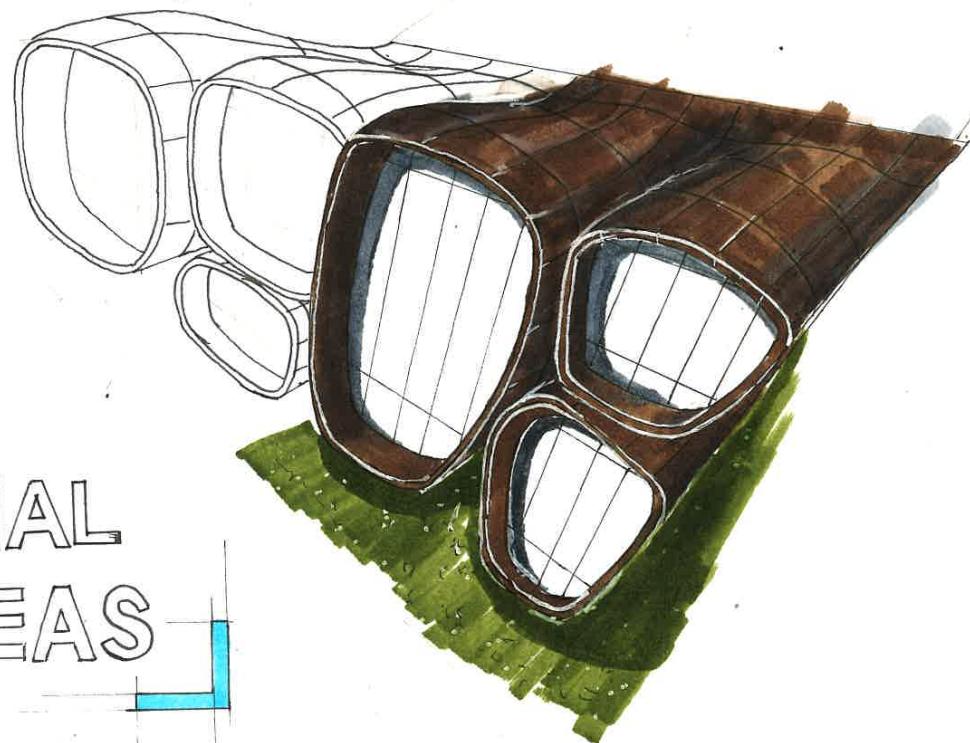
# JAPANESE ARCHITECTURE



HYOGO PREFECTURAL MUSEUM OF ART

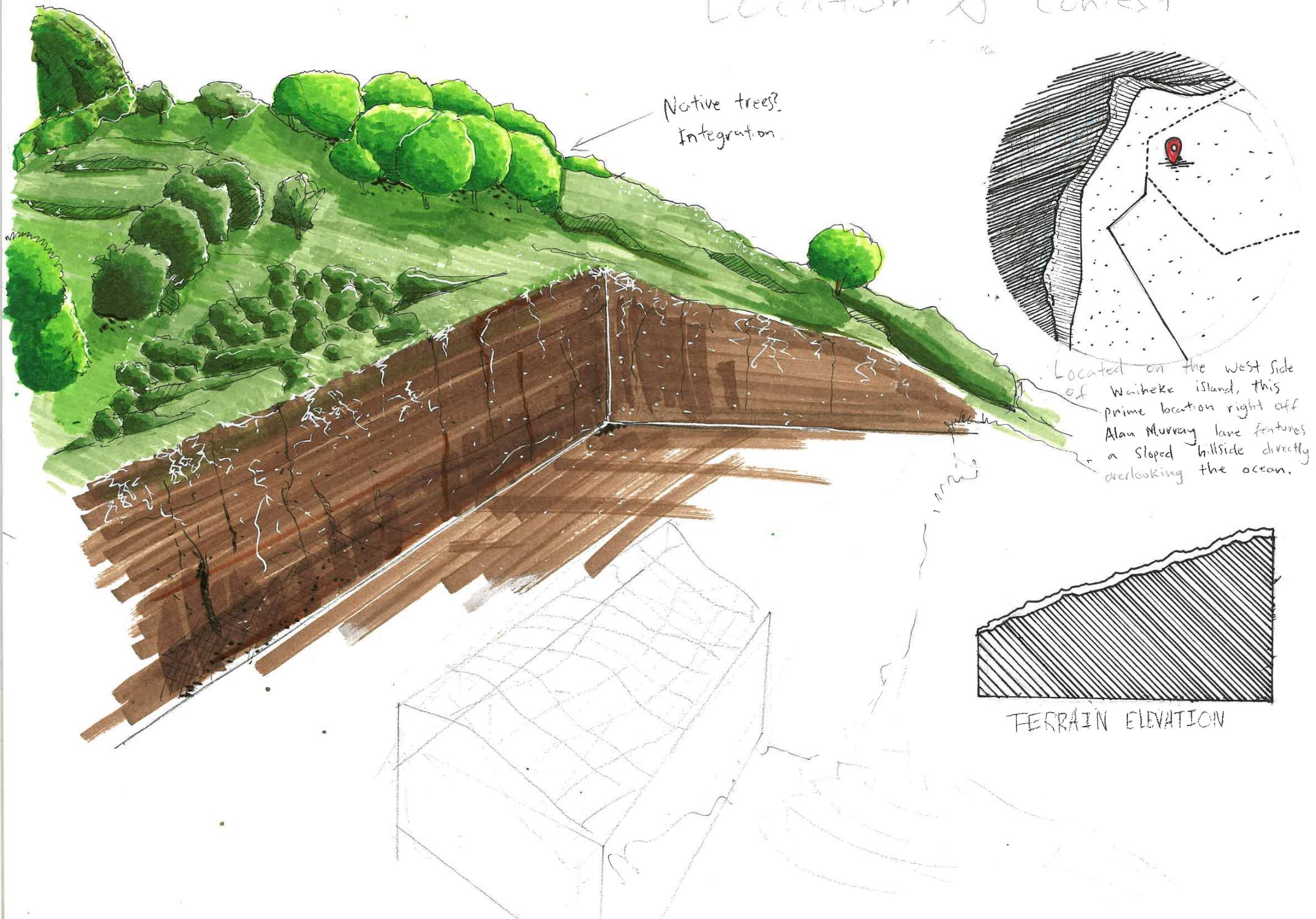


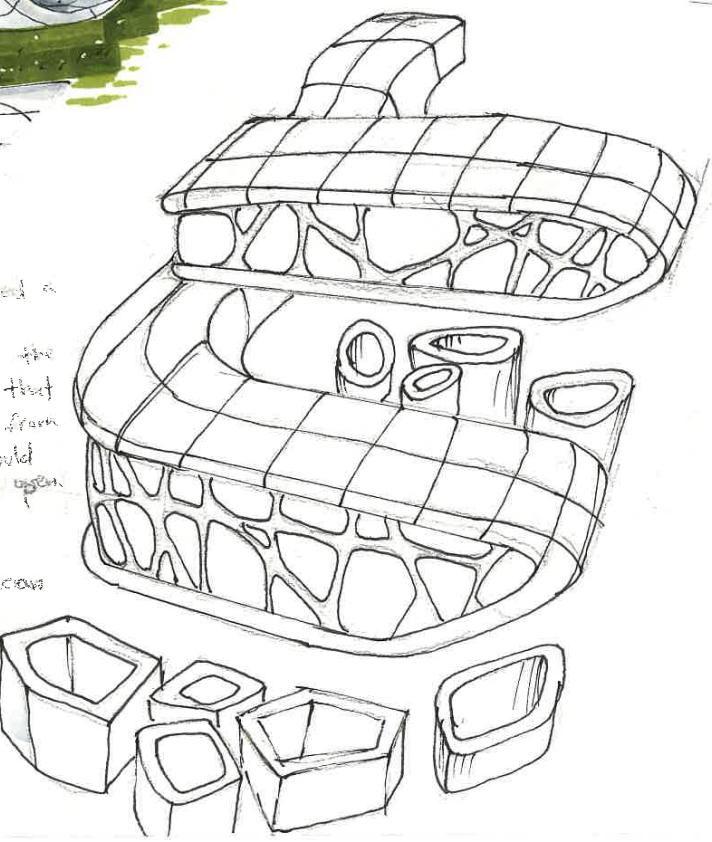
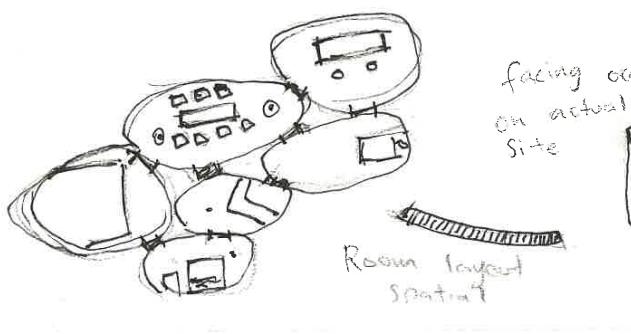
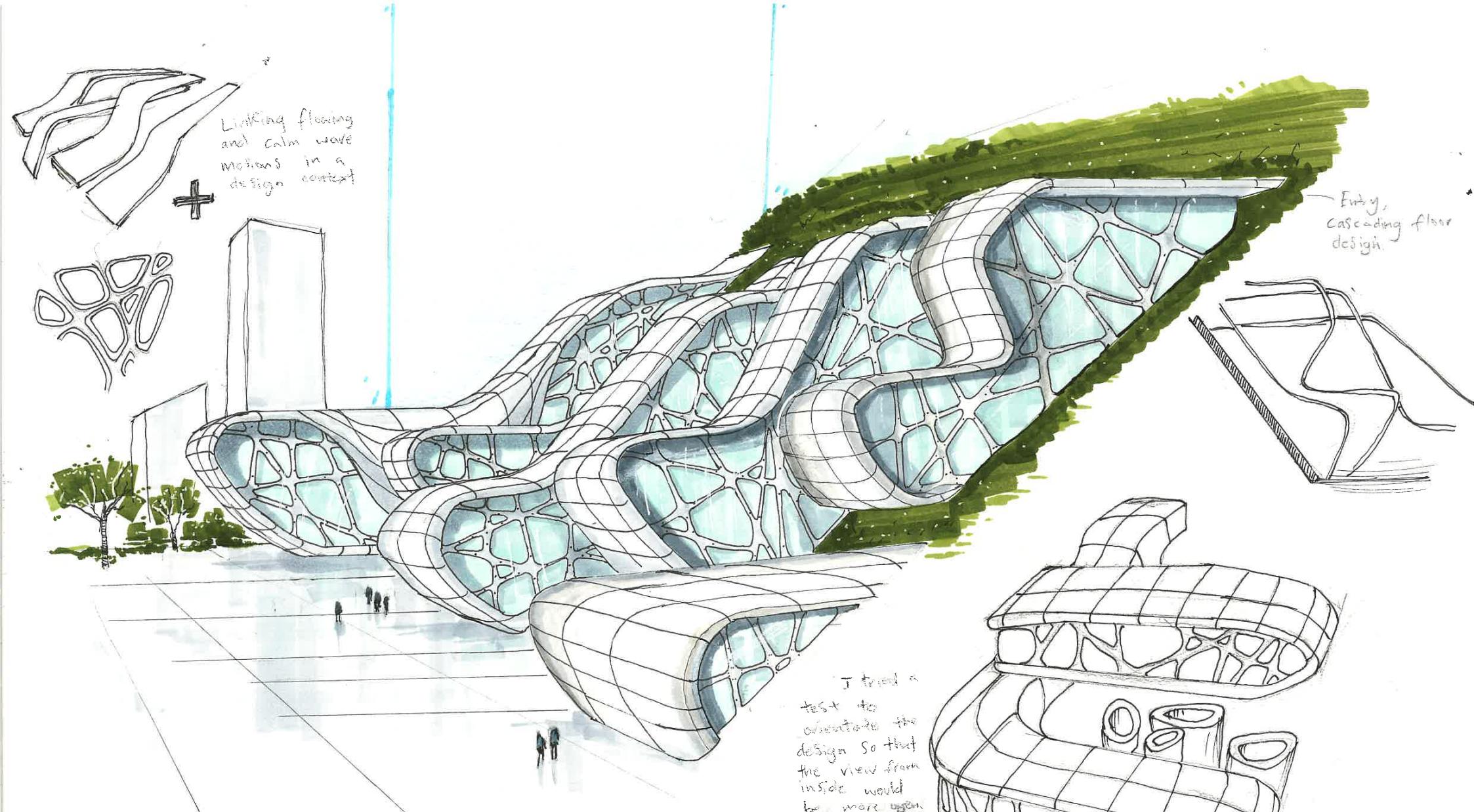




INITIAL  
IDEAS

# Location & Context

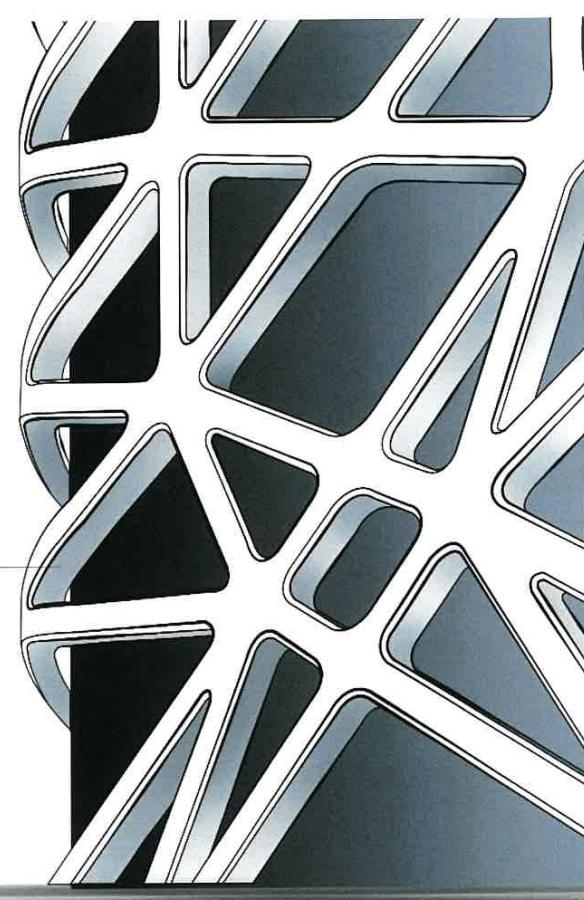
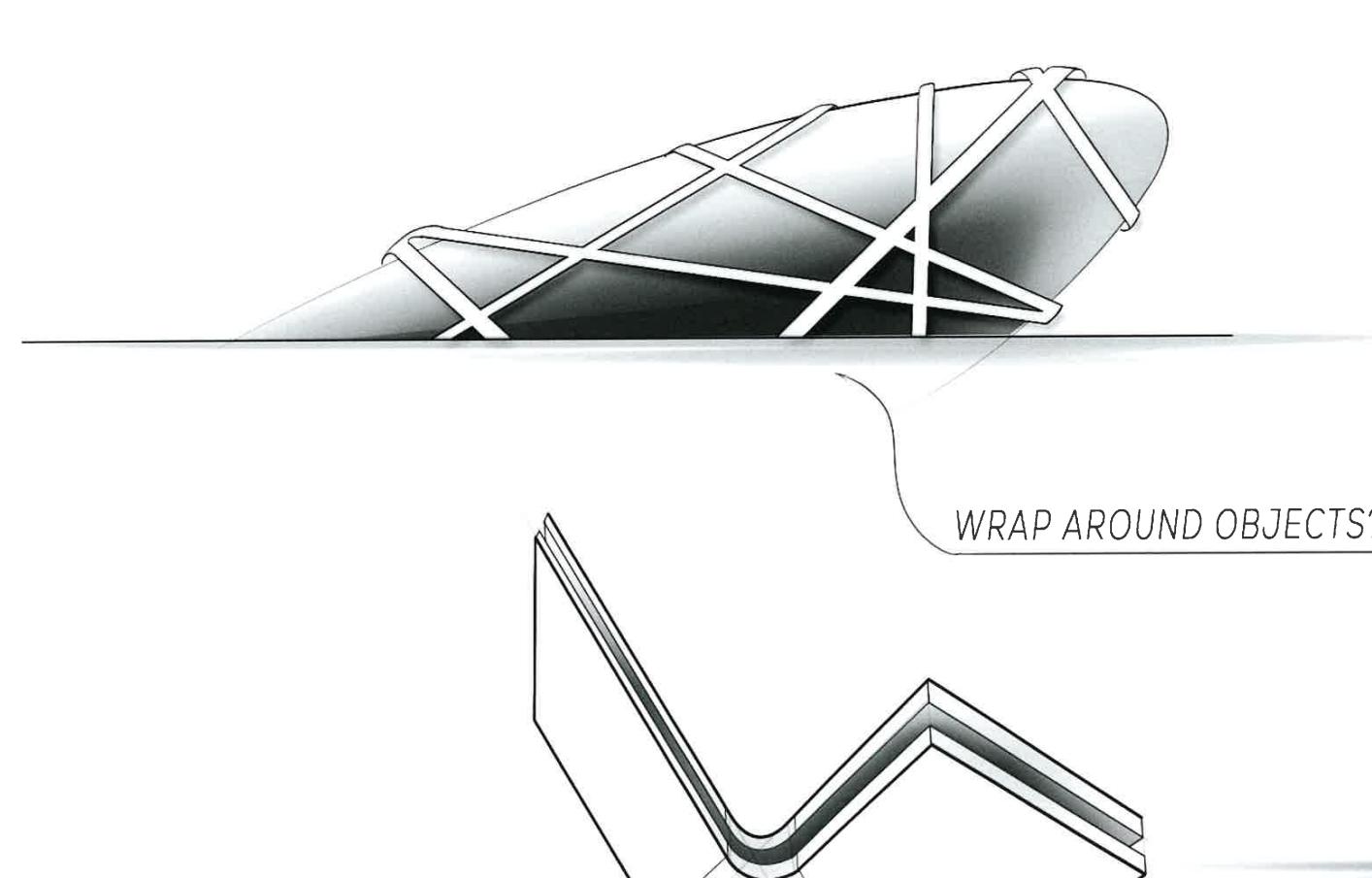
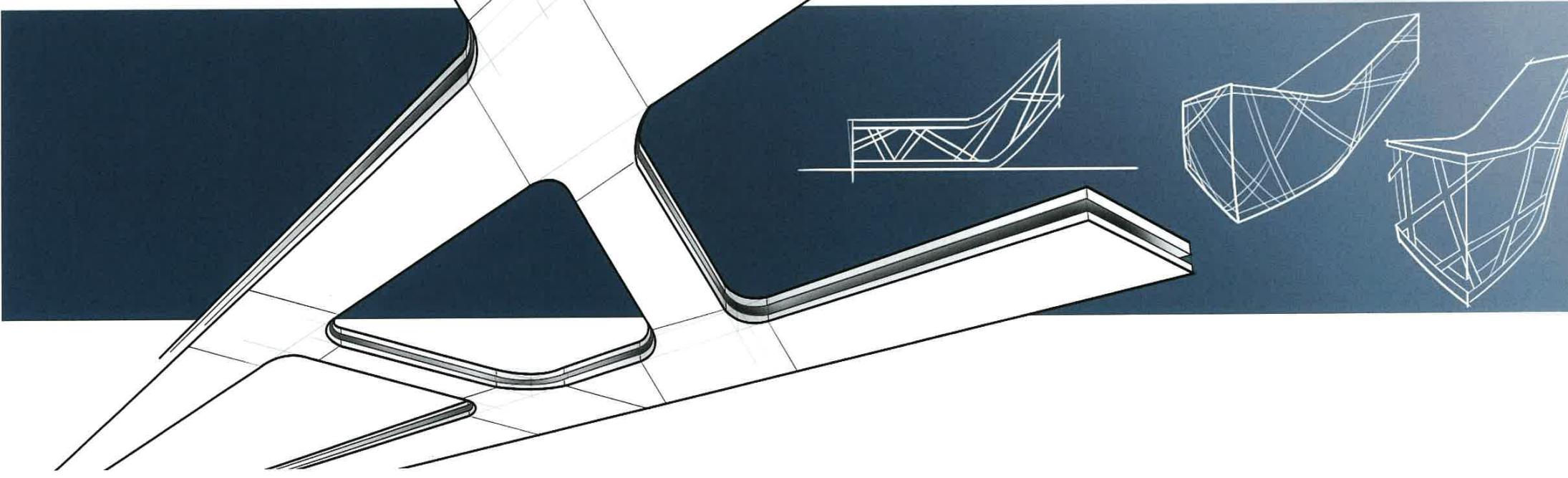


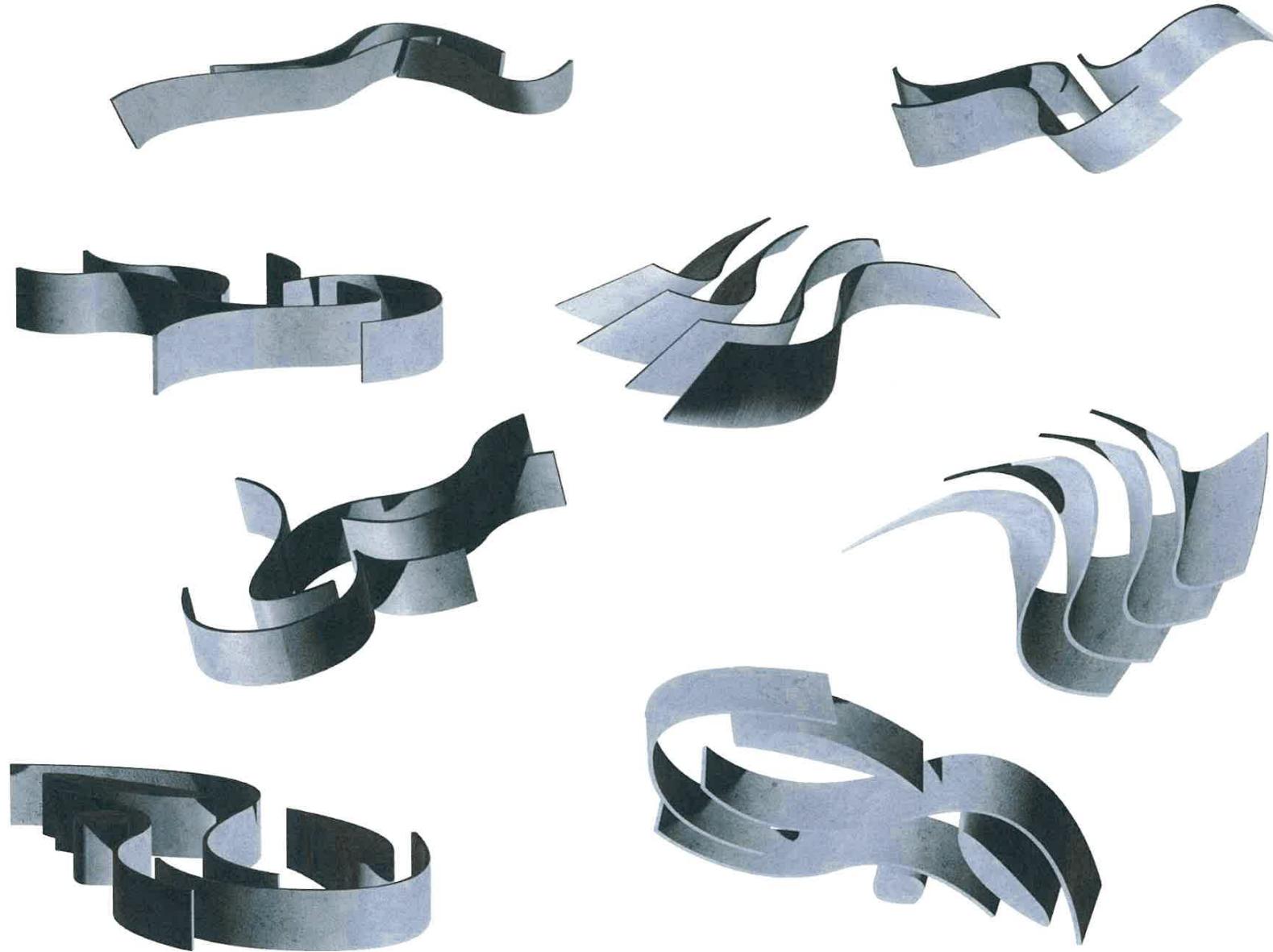






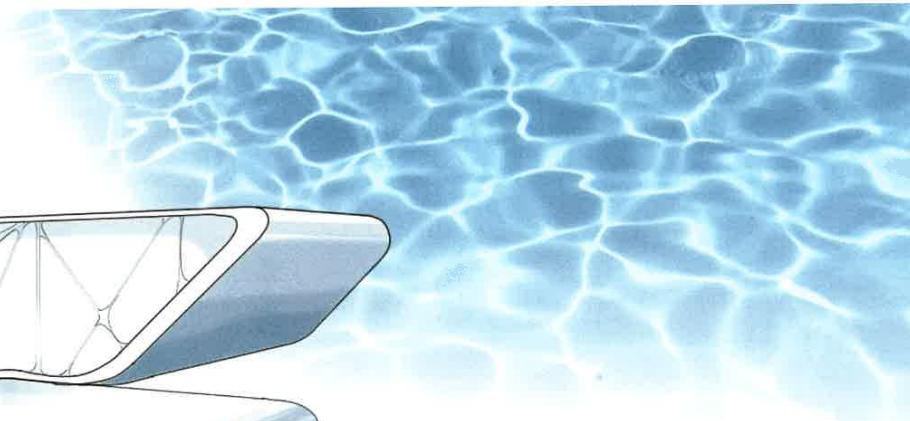
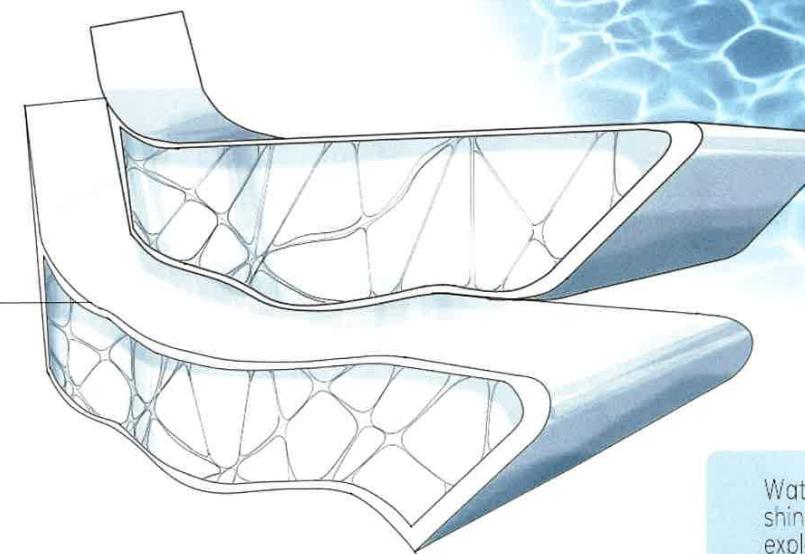
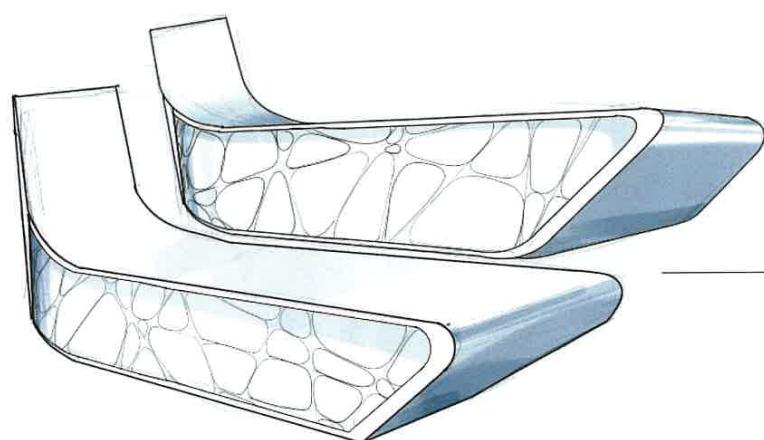
WRAP AROUND OBJECTS?



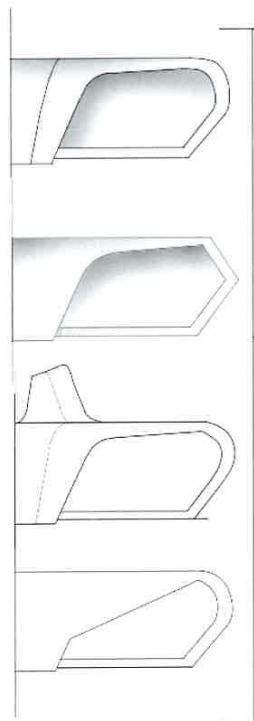


In this page I am exploring the use of 3D software to create interesting shapes that are inspired by the ideation and resolving process. Using these 3D tools allowed me to create shapes that could inspire or resemble buildings. I will most likely be pulling out ideas from these developments further down in the design process.

## DEVELOPMENT

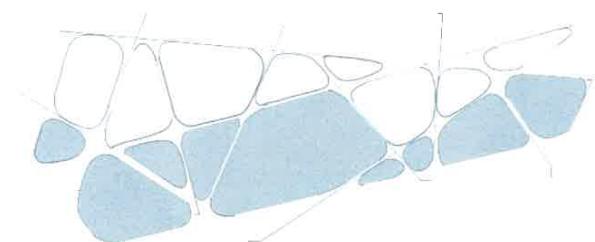
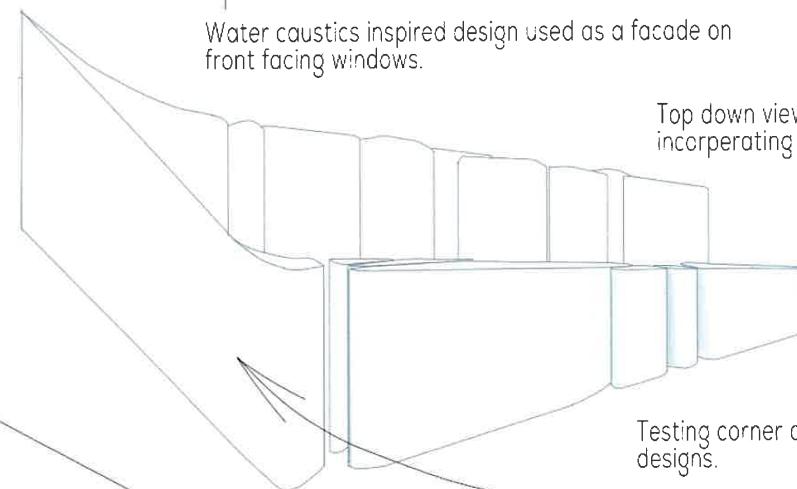


Water caustics are commonly formed when light shines through waves on a body of water. I have explored this movement idea in my design process and am using it to direct the creative direction of the current design iterations.

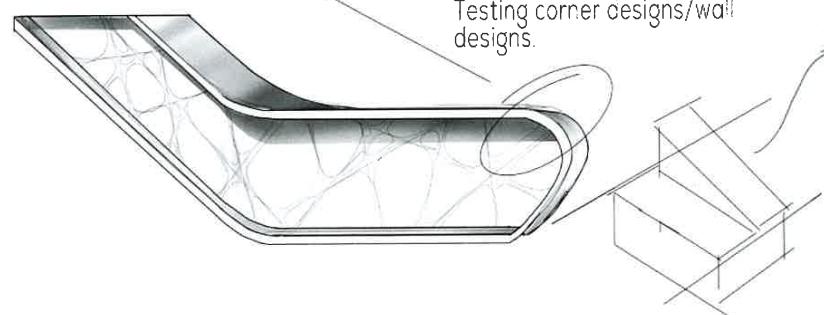


Water caustics inspired design used as a facade on front facing windows.

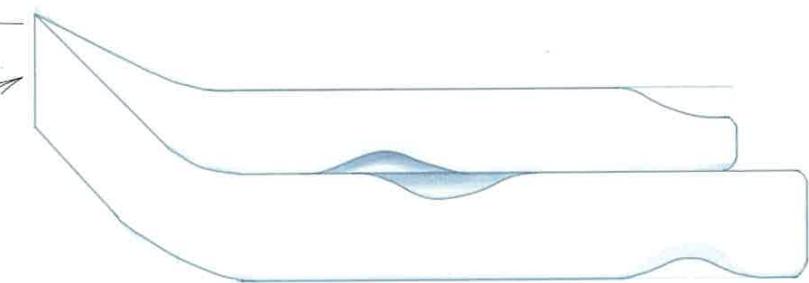
Top down view of what this may look like, incorporating characteristics of water movement.



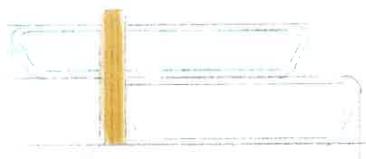
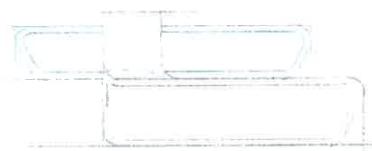
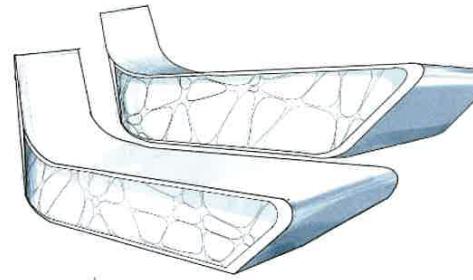
Testing corner designs/wall designs.



Testing corner designs/wall designs.



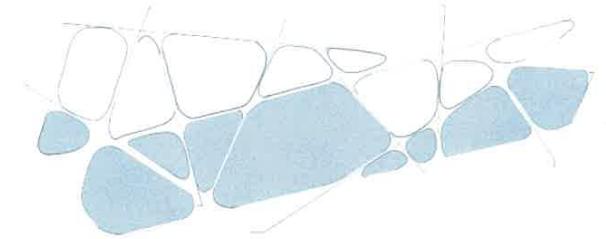
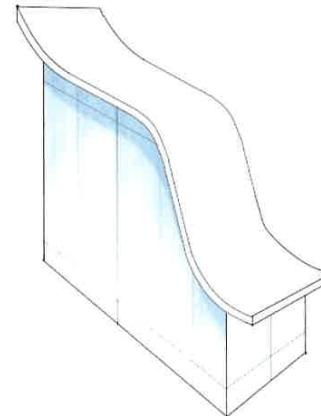
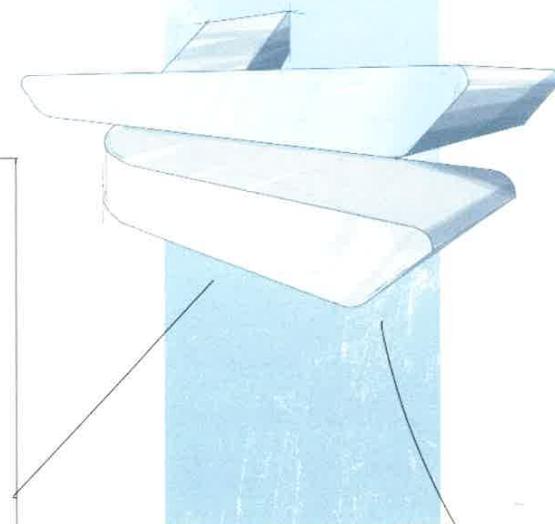
## DEVELOPMENT



For simplicity purposes, I have developed the design in this page without the front facing facade which will be incorporated back into later iterations of the design.

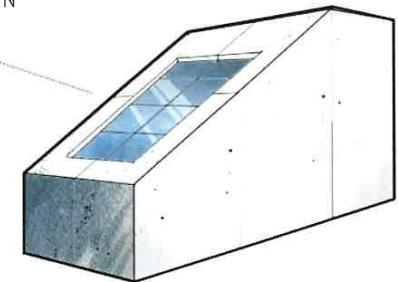
On the left I am exploring spatial positioning in regards to the different spaces in my design so far. I am exploring the orientation and layering of shapes in order to achieve an end result that is more practical and functions like a home/intended purpose.

TIMBER CLADDING?

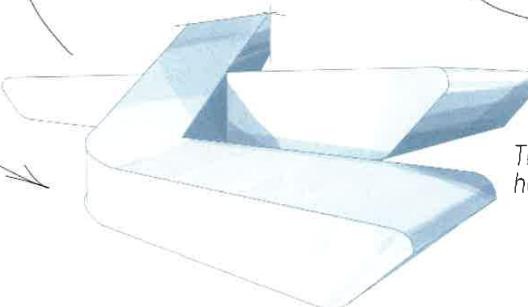
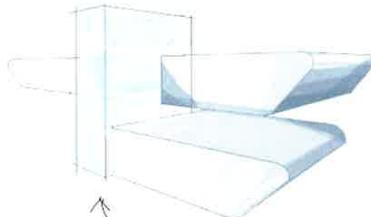
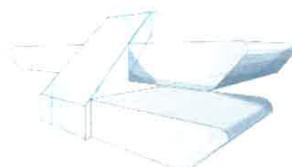


Exploring different functions and designs for the highlighted space.

OPENING/WINDOW OPTION

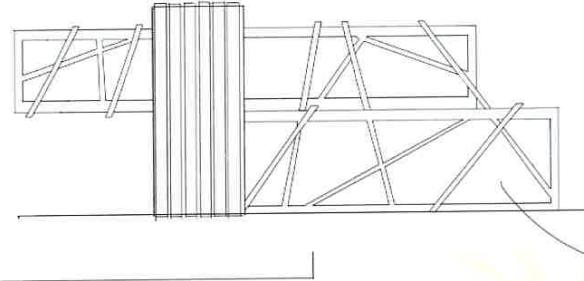
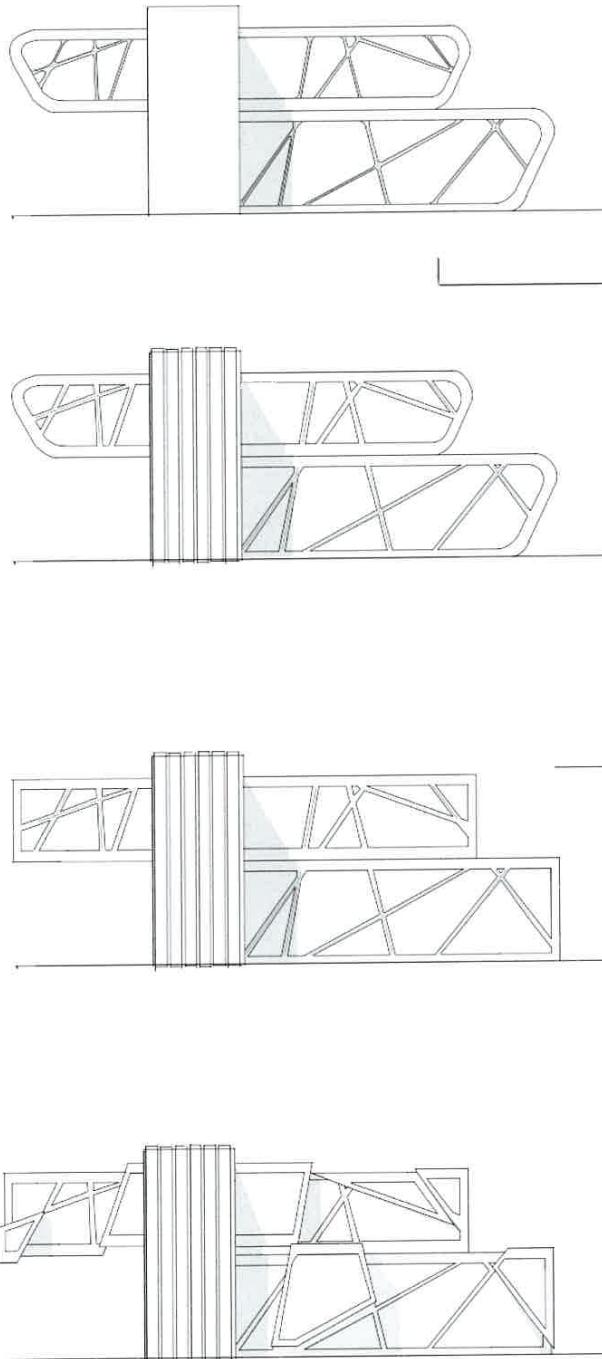


The highlighted shape by going through this design process has now become its own distinct shape and will probably function separately from other sections.



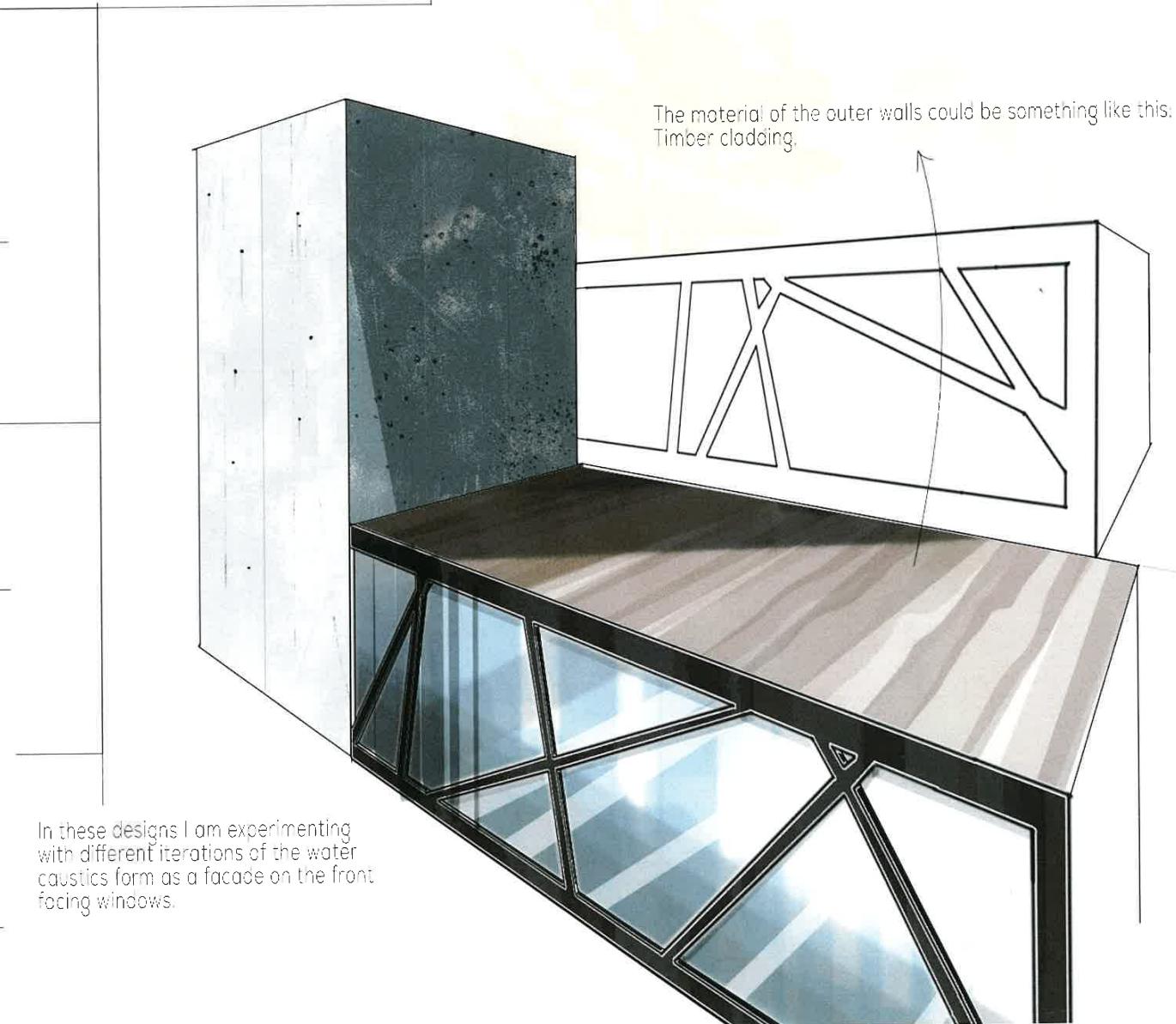
This space could potentially house a hallway or serve as a transitional space.

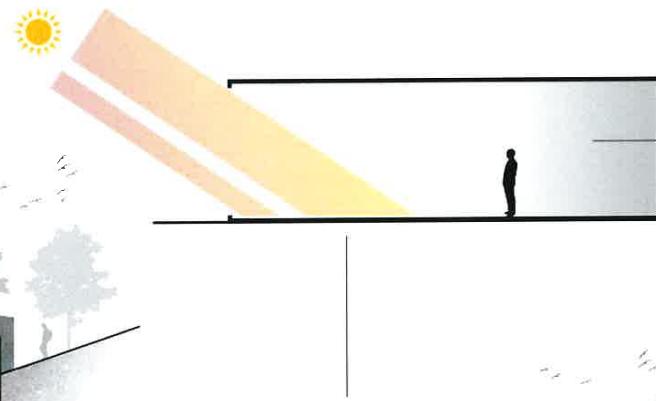
FRONT ELEVATION IDEAS



Things I need to consider:  
How does the facade affect the view looking out the window?  
How can it serve as both a functional and aesthetic aspect of the design?

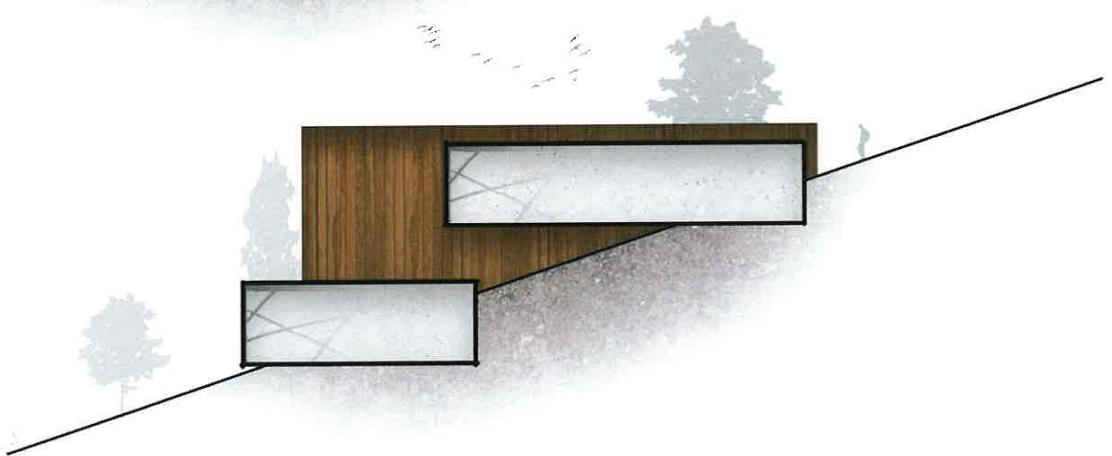
The material of the outer walls could be something like this:  
Timber cladding.



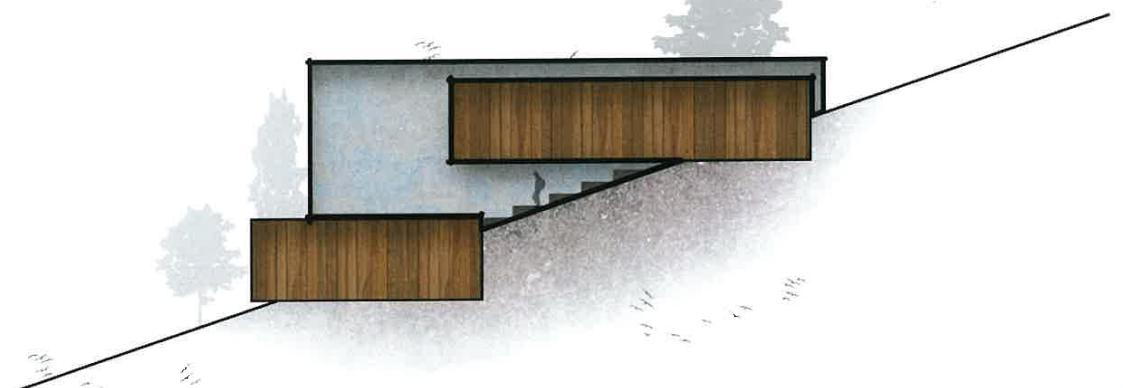


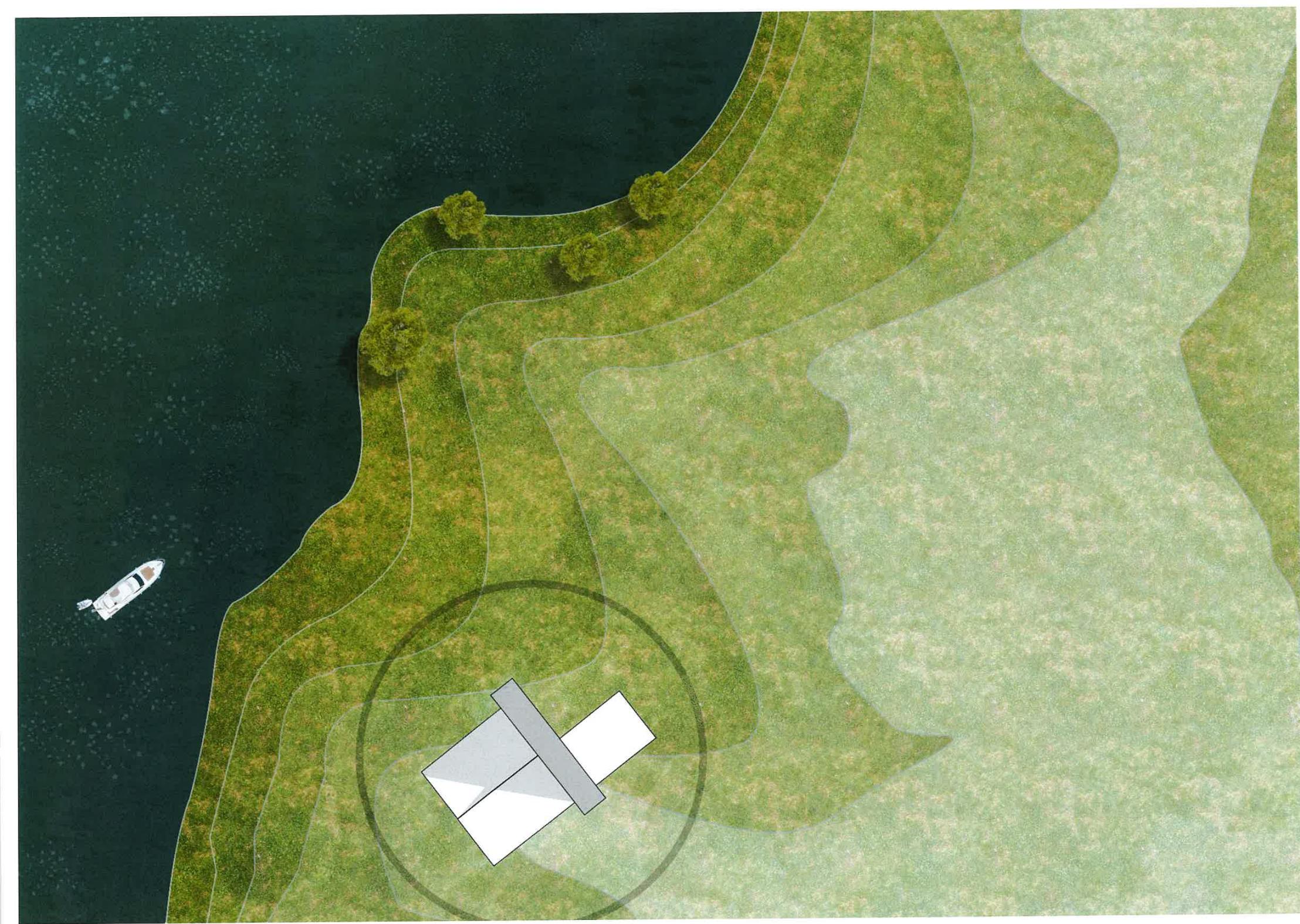
Dark space, light doesn't reach

The only window being at the front, the light doesn't travel and illuminate the areas toward the end of the building

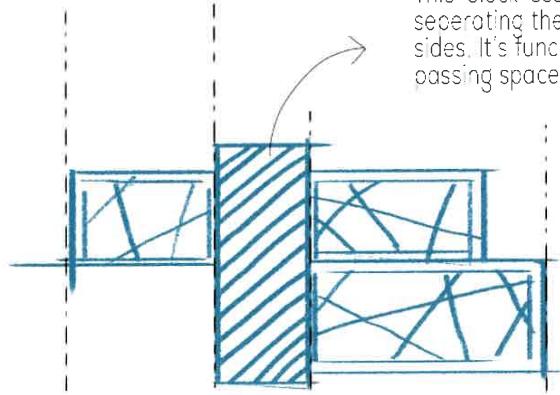


This is a cut-away elevation of how the design may look like.  
The stairs serve the function of travelling through the two sections.

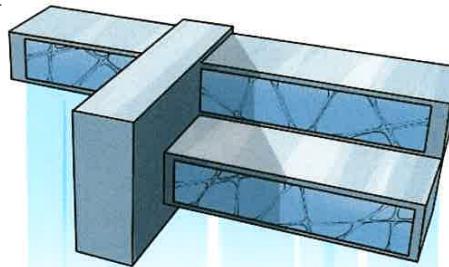




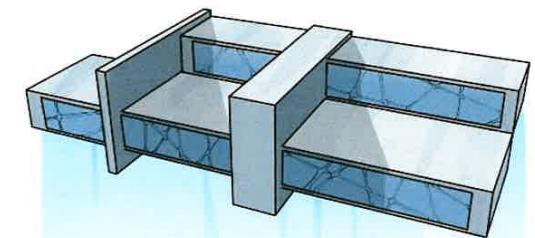
POTENTIAL OUTHOUSE/SEPERATED SECTION?



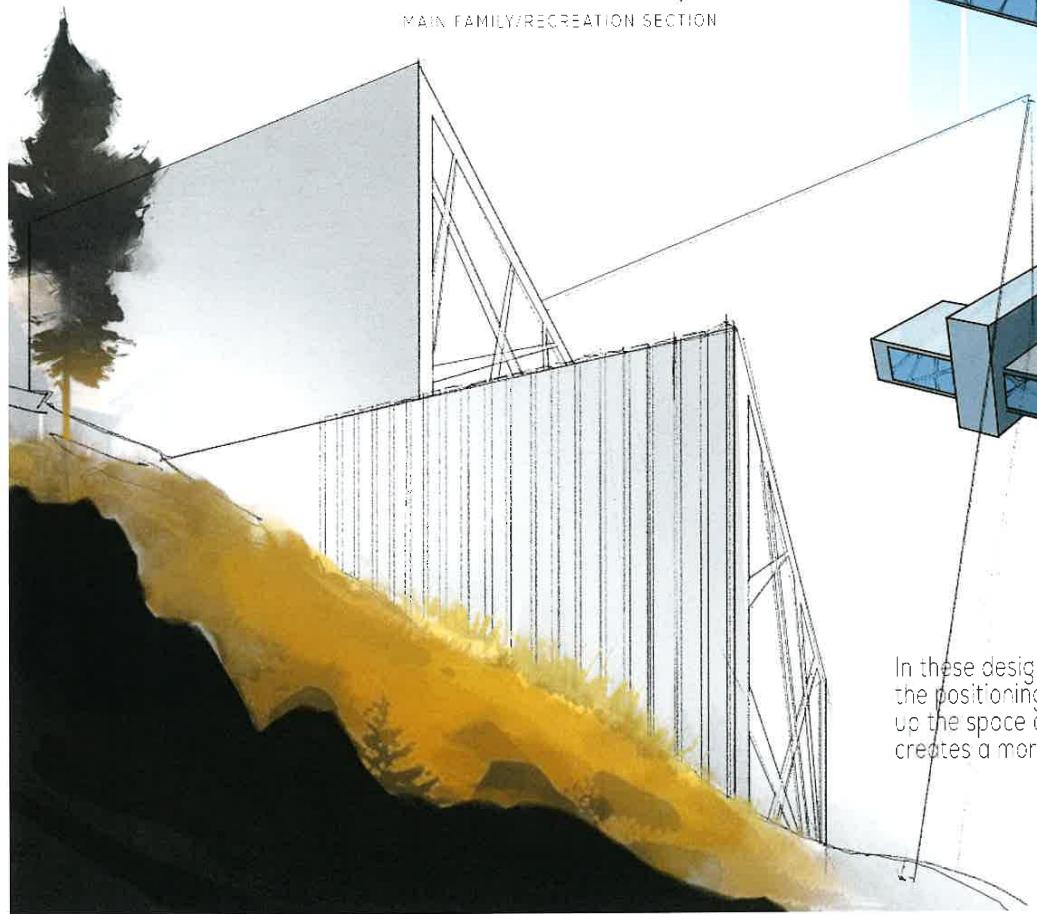
This 'block' essentially serves as a divider, separating the house into two separate sides. Its functionality will be that of a passing space/hallway.



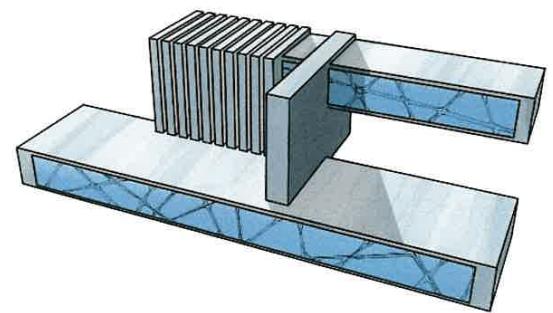
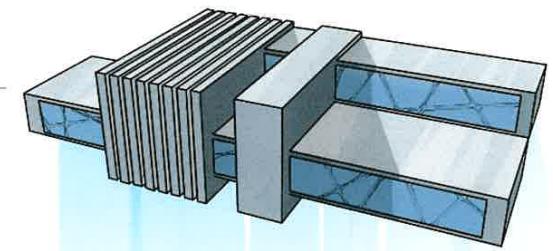
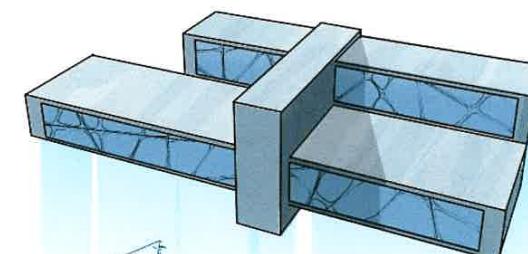
Moving and manipulating block along this axis.

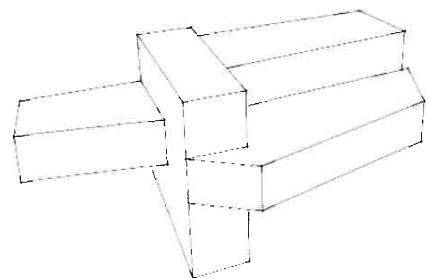
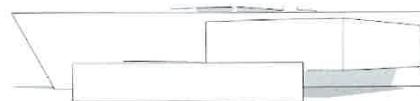
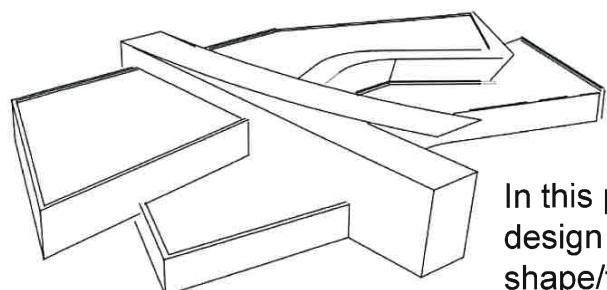
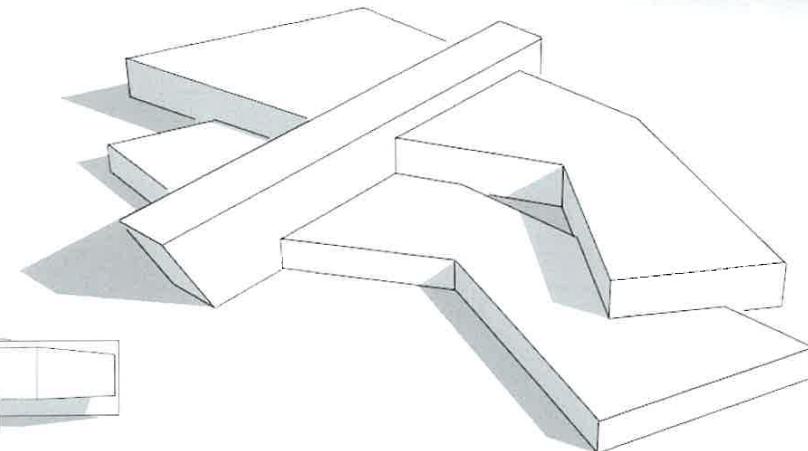
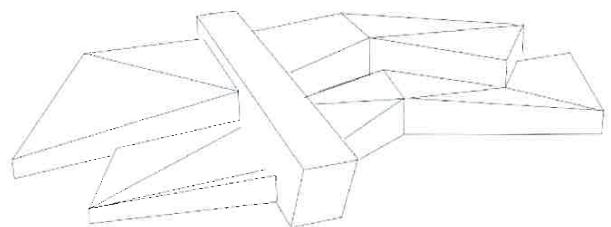
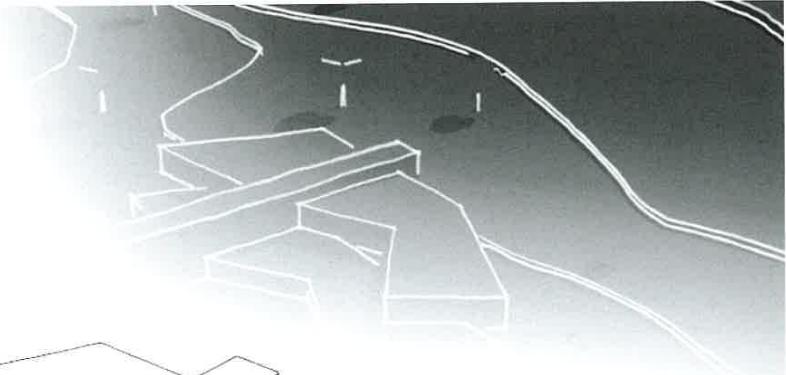
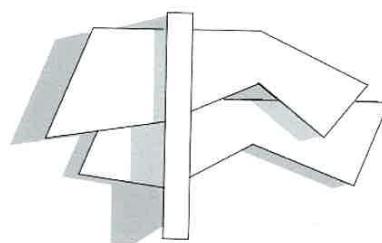
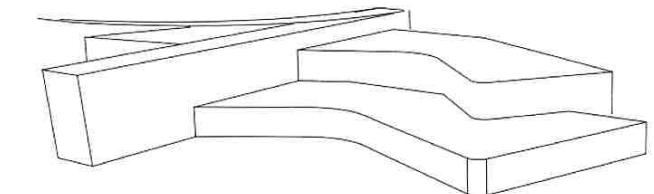


MAIN FAMILY/RECREATION SECTION

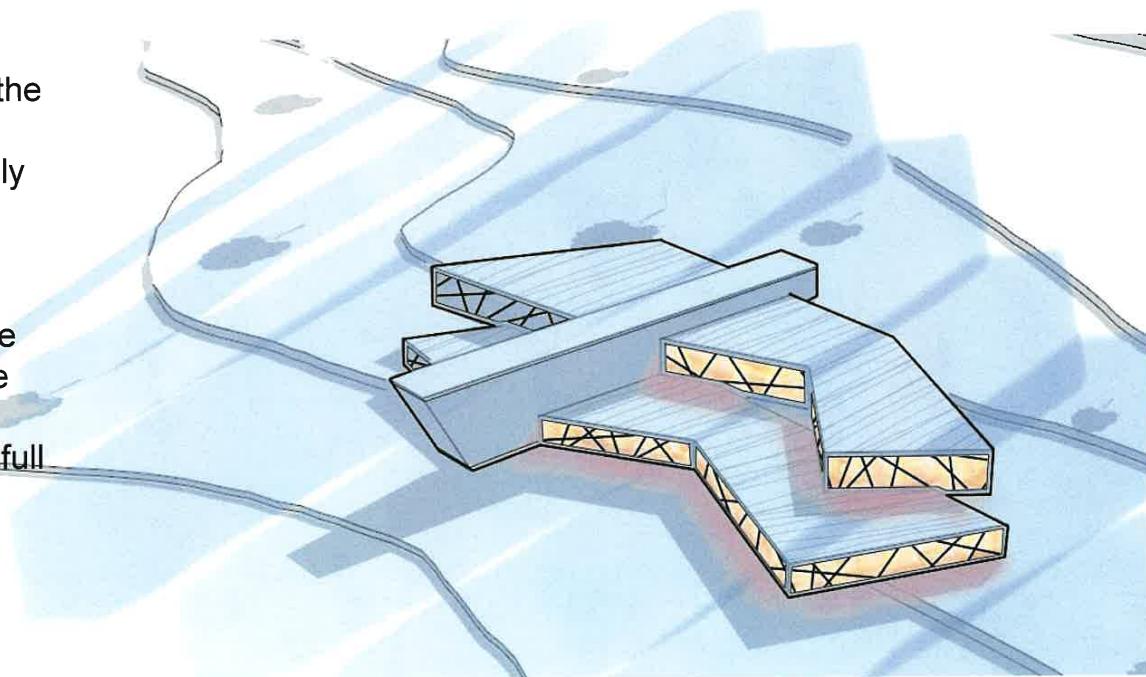


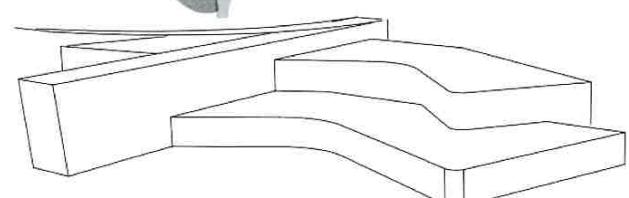
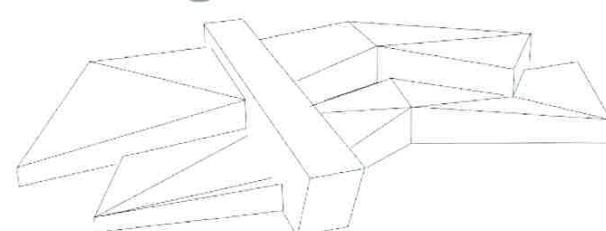
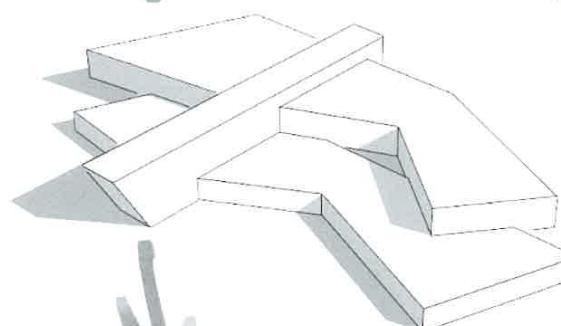
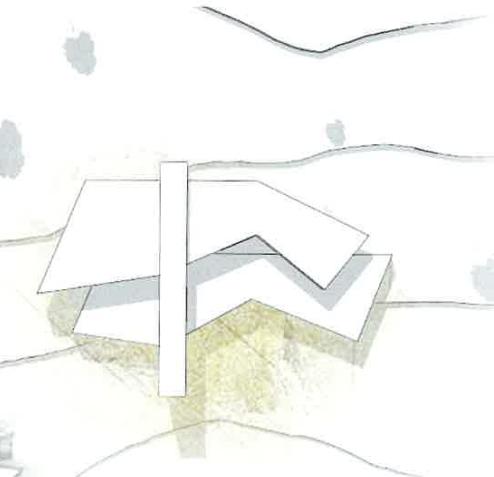
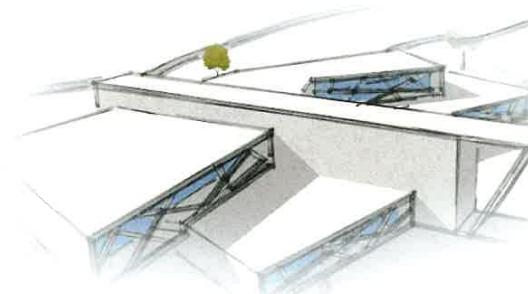
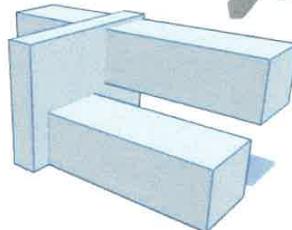
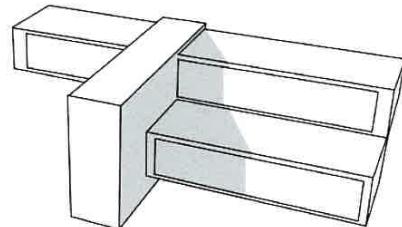
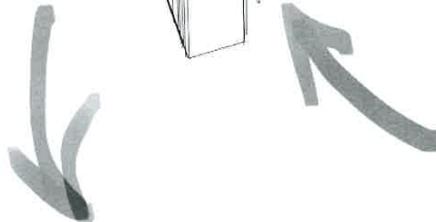
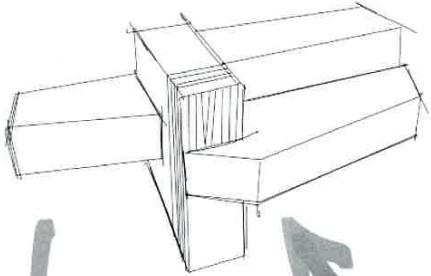
In these design iterations I am experimenting with the positioning and use of the 'block' in order to break up the space and make it more dynamic. This also creates a more aesthetically engaging design.



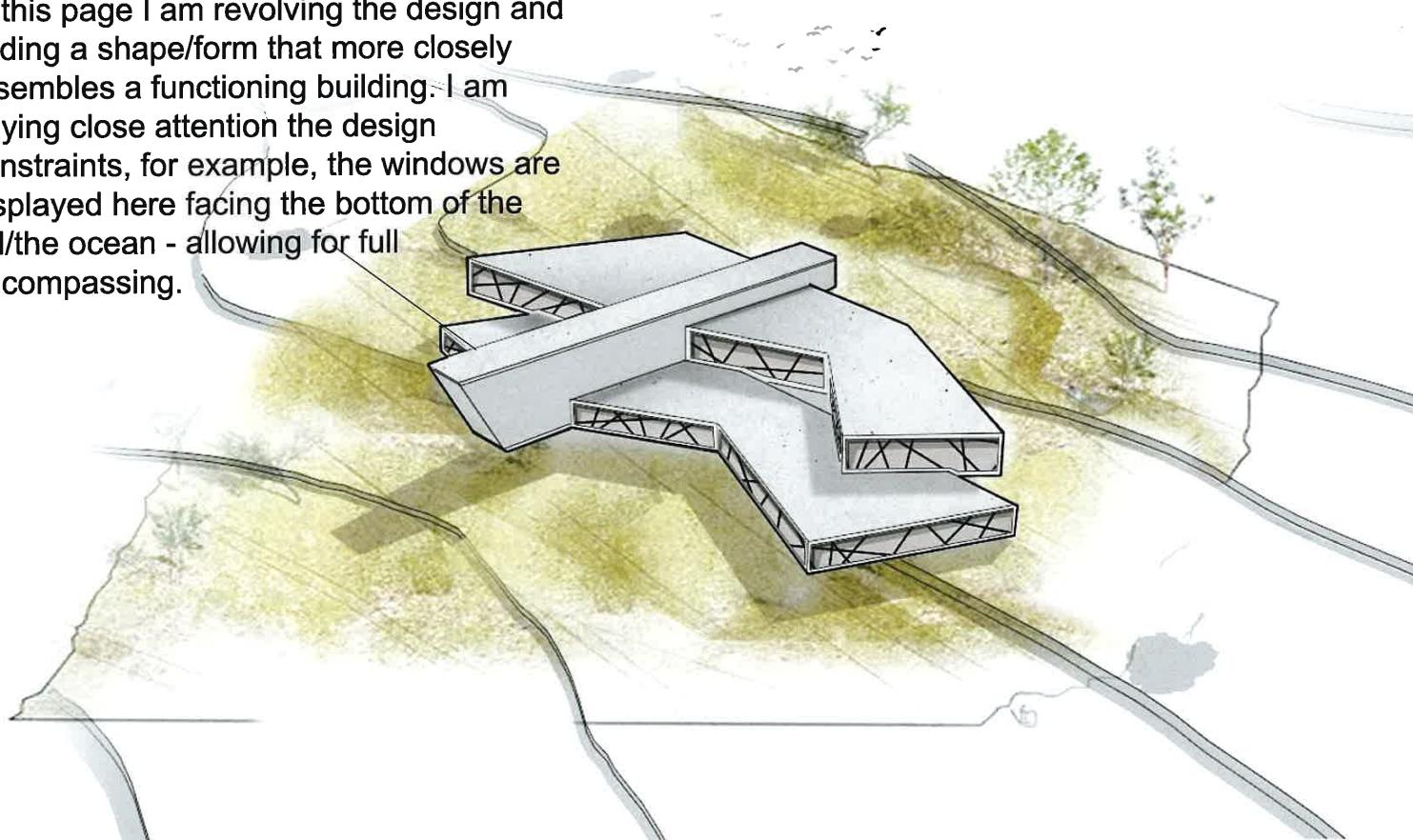


In this page I am revolving the design and finding a shape/form that more closely resembles a functioning building. I am paying close attention the design constraints, for example, the windows are displayed here facing the bottom of the hill/the ocean - allowing for full encompassing.

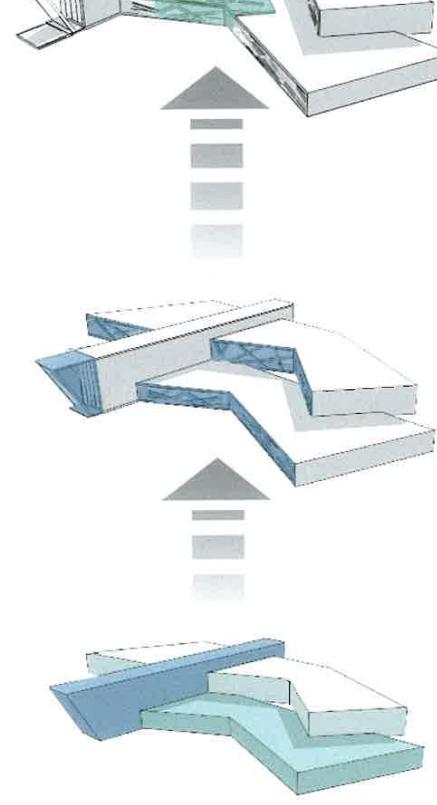
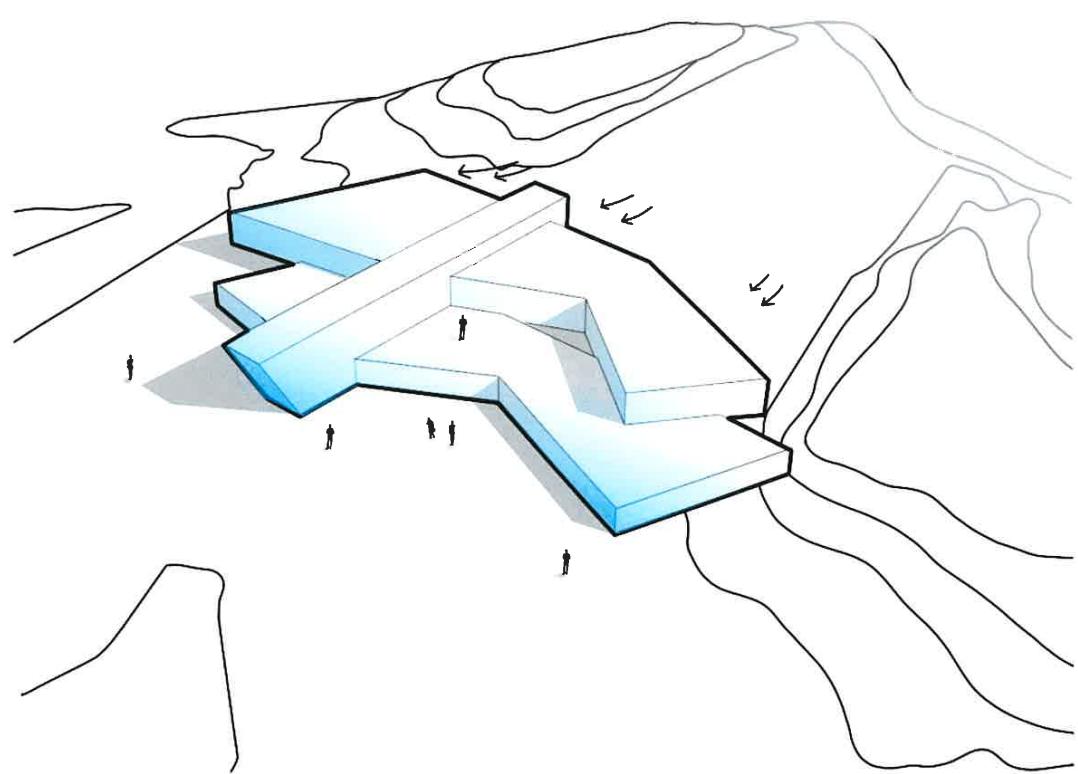
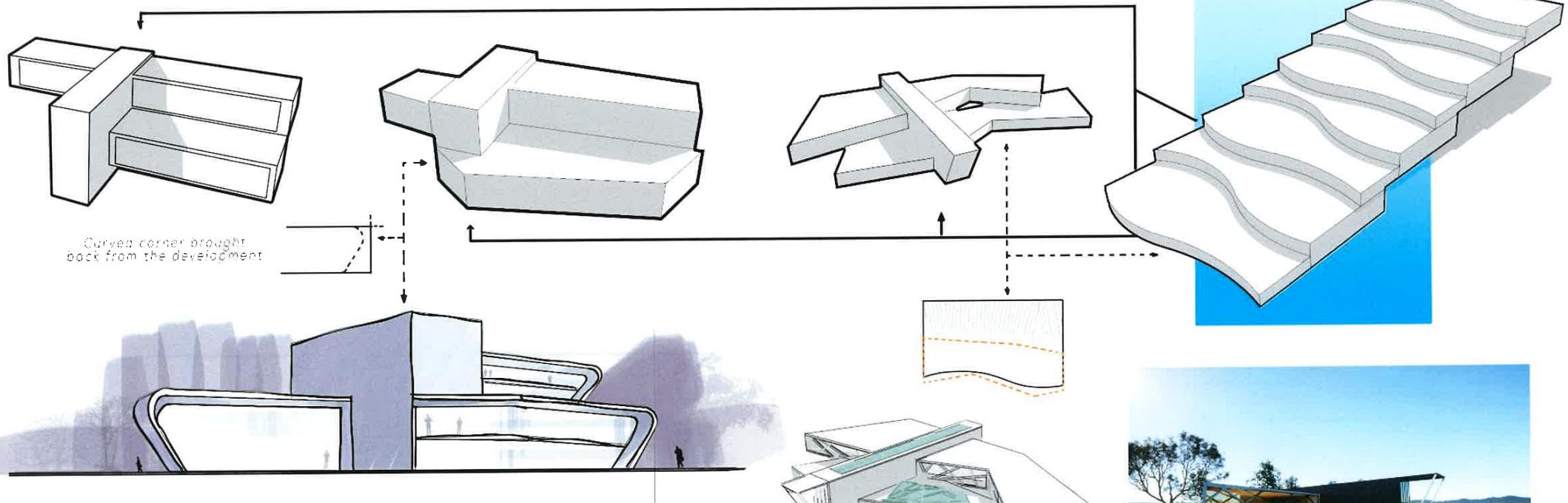


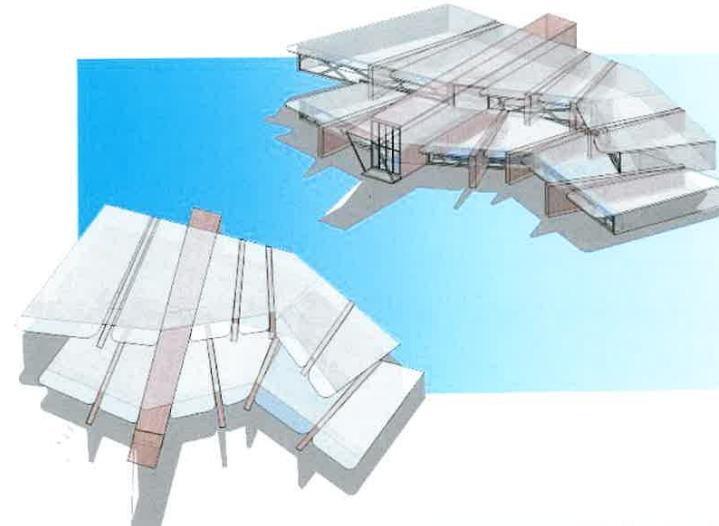
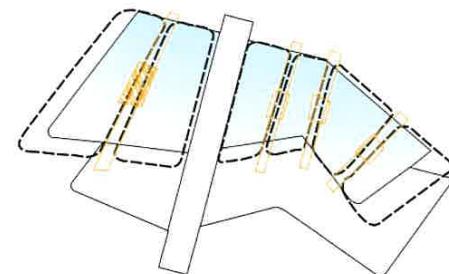
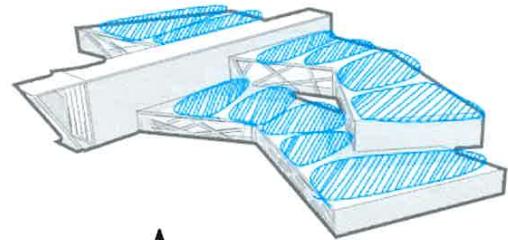


In this page I am revolving the design and finding a shape/form that more closely resembles a functioning building. I am paying close attention the design constraints, for example, the windows are displayed here facing the bottom of the hill/the ocean - allowing for full encompassing.

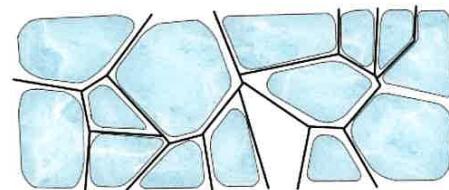
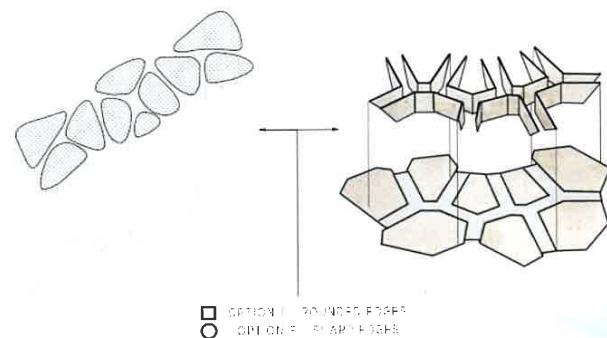
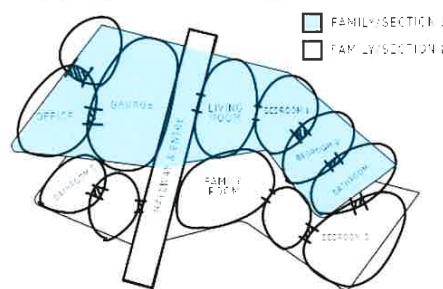




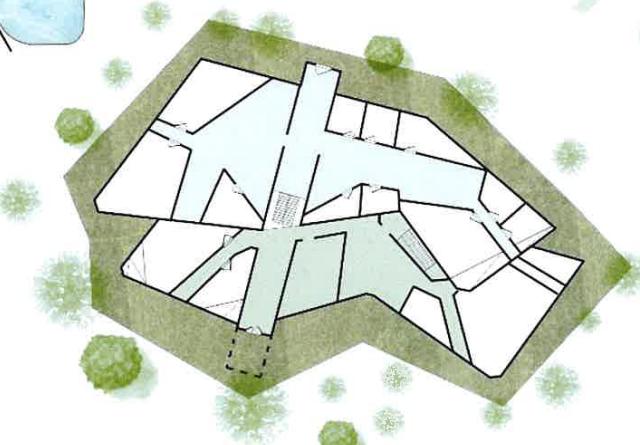
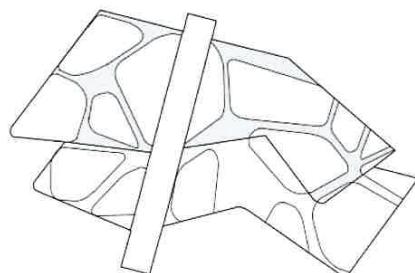
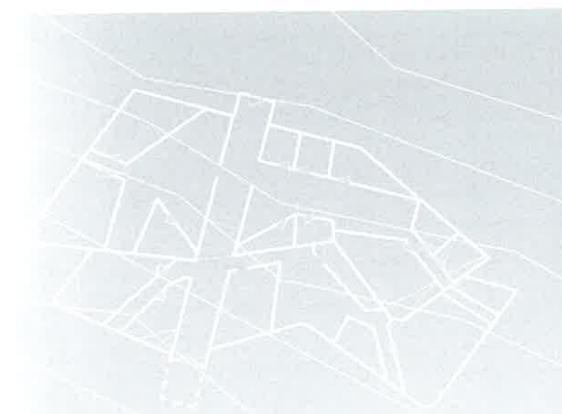
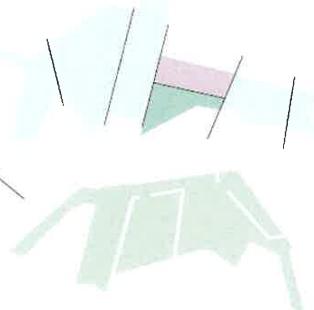




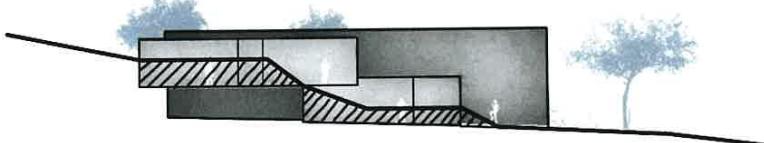
TWO INDEPENDANT SECTIONS - ONE ENCLURE

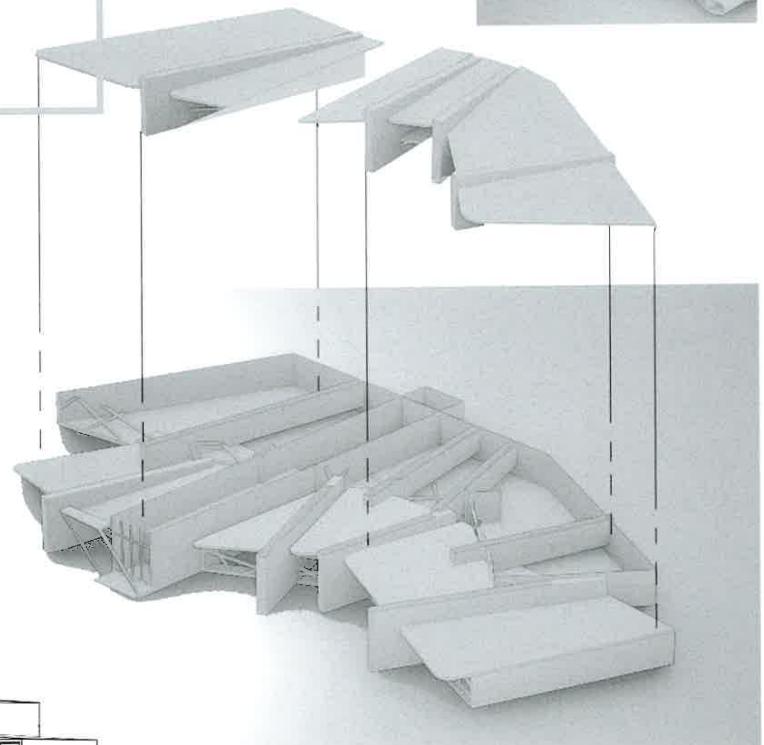
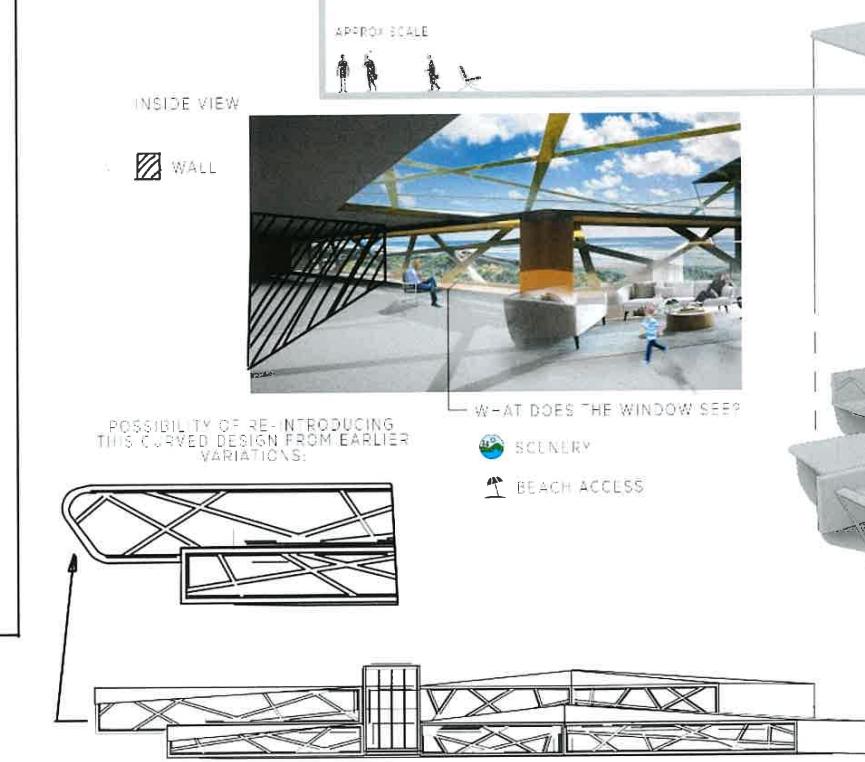


SPECIAL AREAS - IN THE PURPOSE  
COULD BE DIVIDED INTO SMALL SECTIONS BEING  
TEMPORARY WALLS



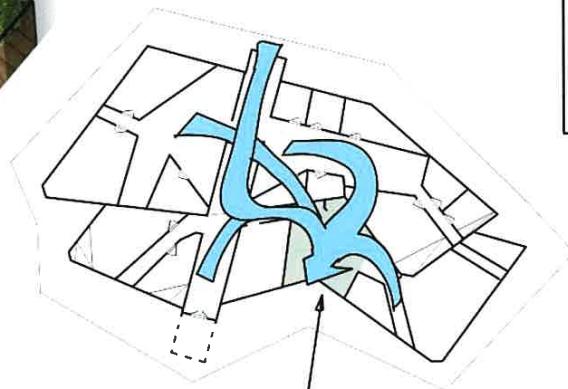
POSSIBLE UNDER-BUILDING



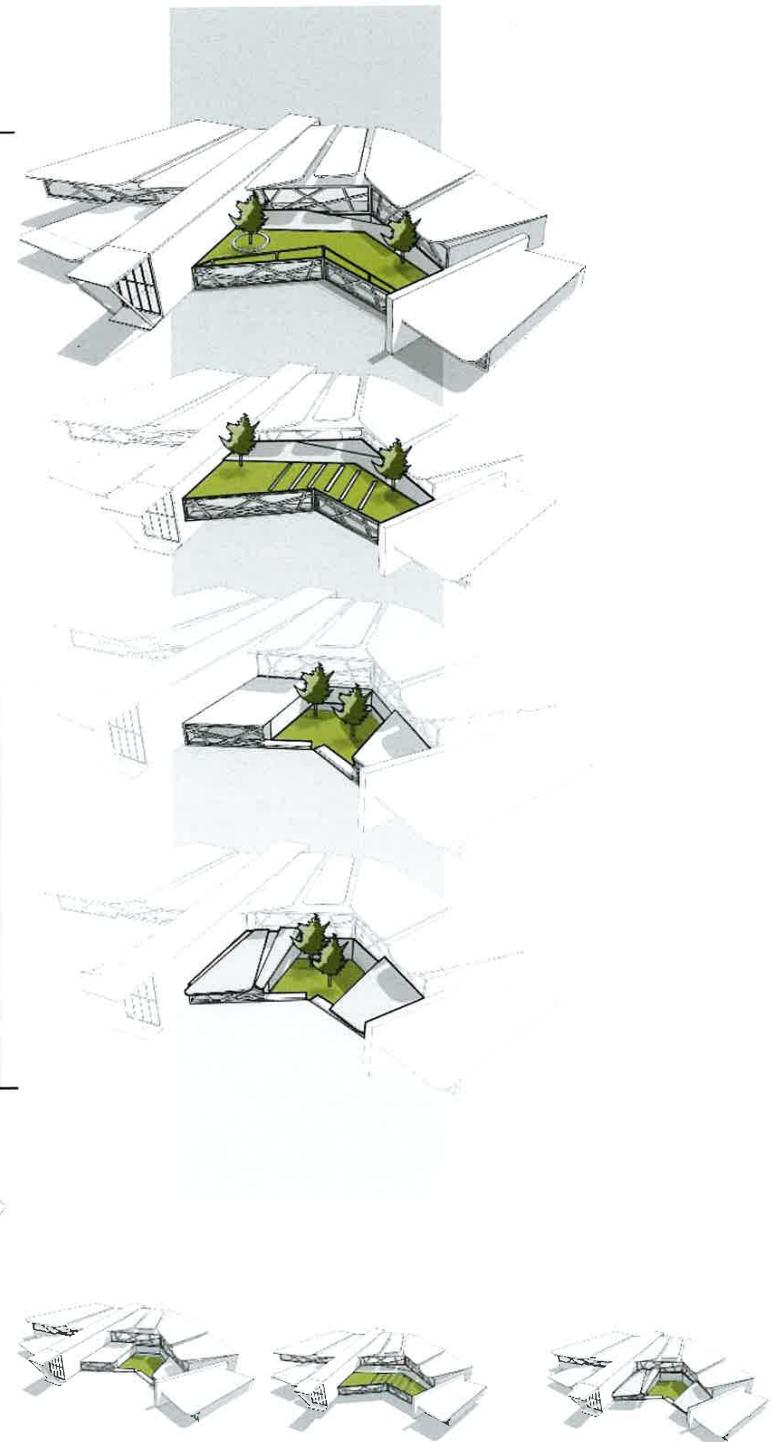


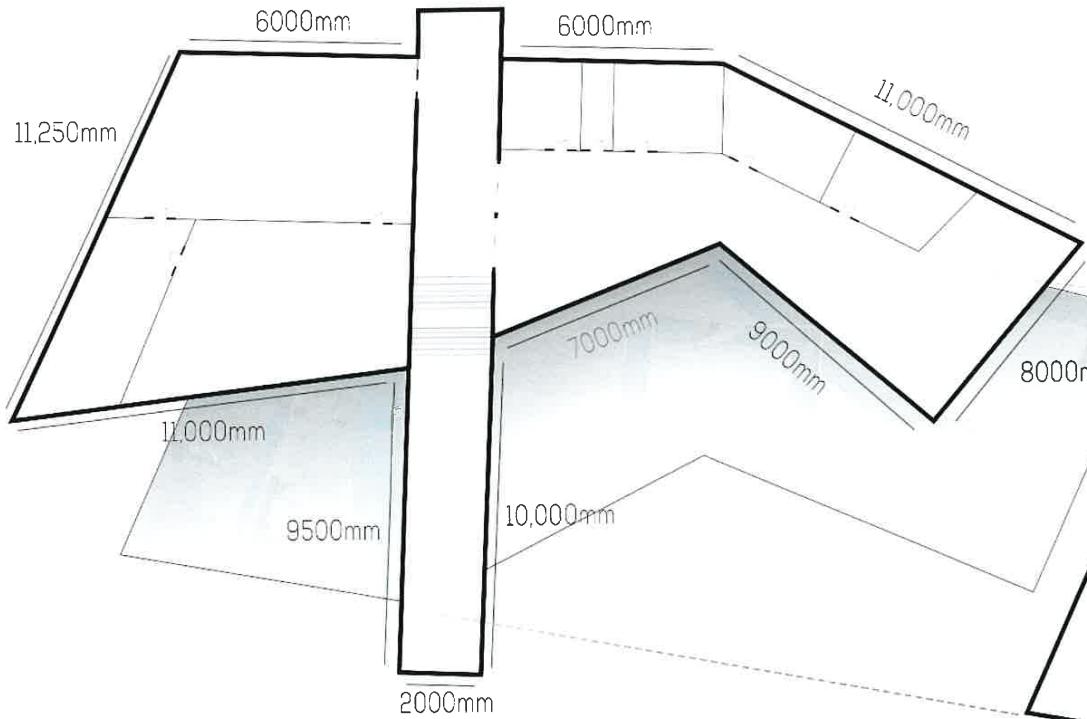


TRADITIONAL JAPANESE  
INSPIRED INNER  
COURTYARD



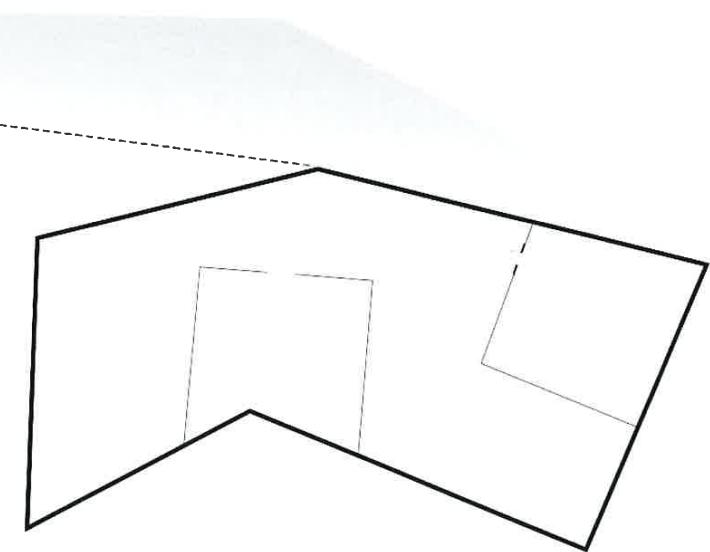
ACCESSIBLE FROM EVERYWHERE  
- CENTRAL LOCATION IN HOME



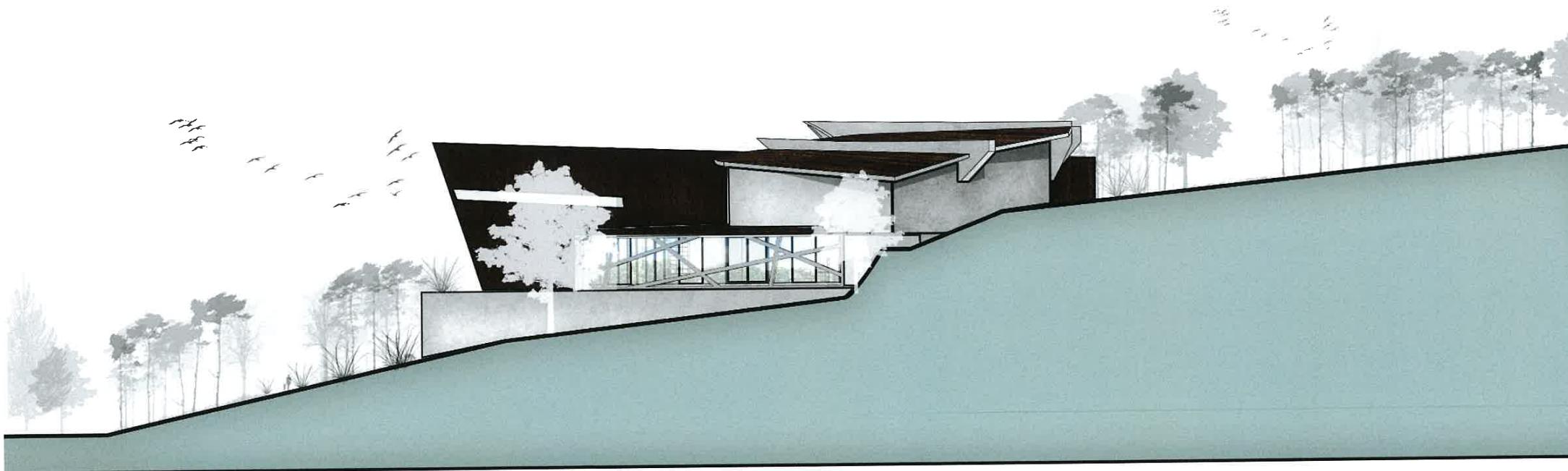


## ELEVATION & FLOOR PLAN/MEASUREMENTS

These top view sections show the two different spaces and how they might function separately from one another. Ideally, one generation of a family would use the top section/floor while another would use the bottom story/section. It is also mutually beneficial for both families to share some spaces and interact.



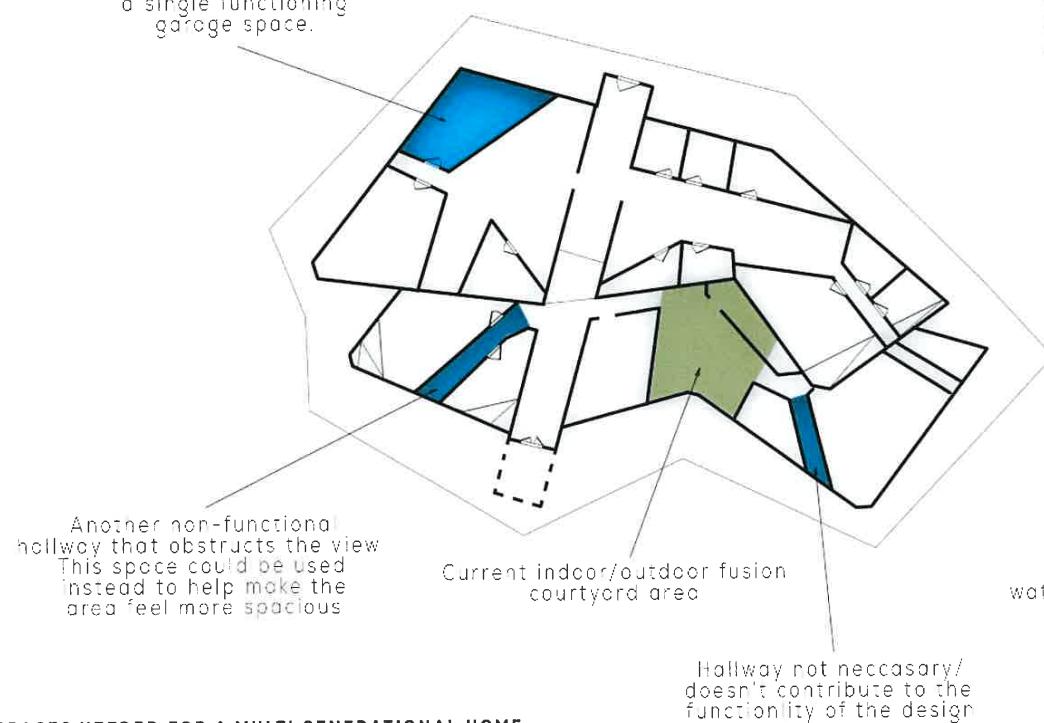
These measurements are only a rough estimate meant to indicate the approximate scale of the building and site.



## RETHINKING THE SPACIAL LAYOUT

This separated garage layout is not necessary and only creates more walls where not needed - this could act as a single functioning garage space.

### CURRENT SPACE FLOOR PLAN



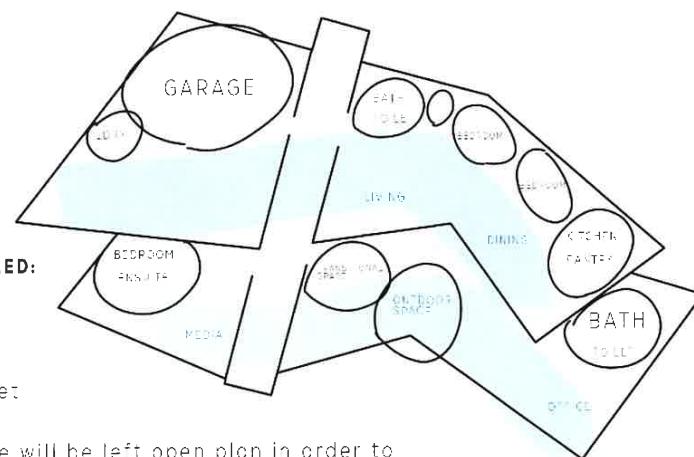
### SPACES NEEDED FOR A MULTI GENERATIONAL HOME:

- Living room
- Dining room
- Family room
- Kitchen
- Pantry
- Garage
- Media room
- Bathrooms/toilet spaces
- Bedrooms
- Laundry
- Storage
- Closets/wardrobe
- Office

### THESE SPACES WILL BE COUPLED:

- Kitchen + Pantry
- Bedroom - ensuite
- Bedroom - wic
- Laundry + garage
- Possibly bathroom + toilet

The spaces in blue will be left open plan in order to maximise the presence of the view



### THINGS TO CONSIDER

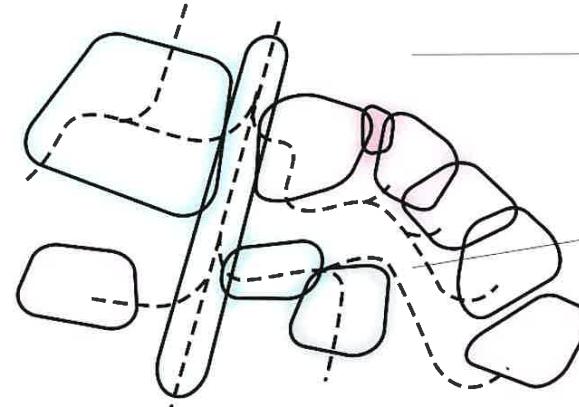
Sense of flow & functionality

How will each space serve its purpose for each of the family members?

Will the spaces be shared between the generations of the family or kept separate?

How will the spaces allow maximum emphasis on the view overlooking the ocean?

Are the spaces accessible for people with various needs (e.g. wheelchairs, short stairs)

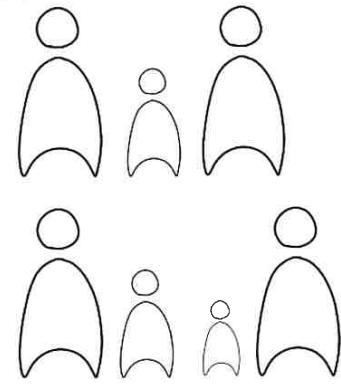
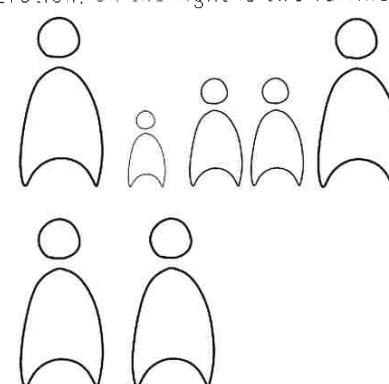


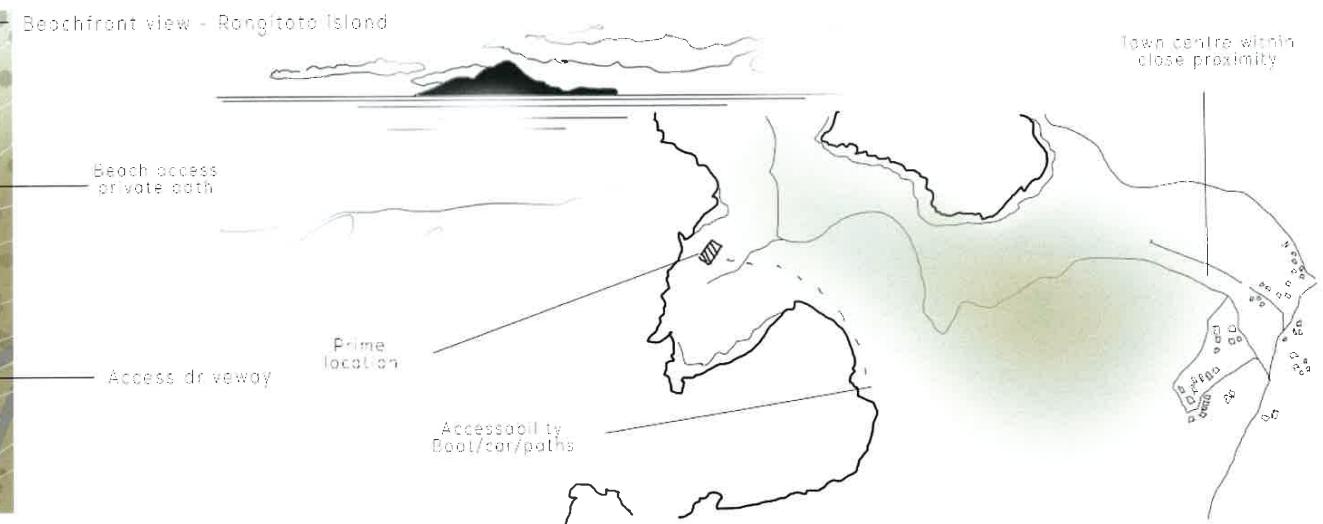
The flow of people in my building will share distinct similarities with the flow of water, the motion that the building is inspired by.



### HYPOTHETICAL MULTI GENERATIONAL FAMILY OCCUPYING HOME:

To an extent the floor plan needs to work with a variety of multi generational family structures as demonstrated by the figures below. On the left is a scenario of a family of 5 plus the older generation, on the right is two families of similar size.

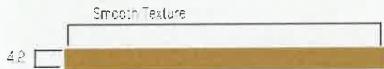




## Cedar Plank Flooring



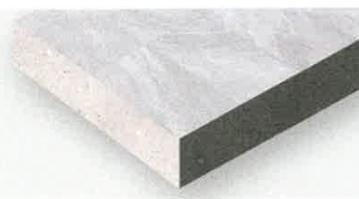
## Light Oak Flooring



## Dark Oak Flooring



## Marble Tiles



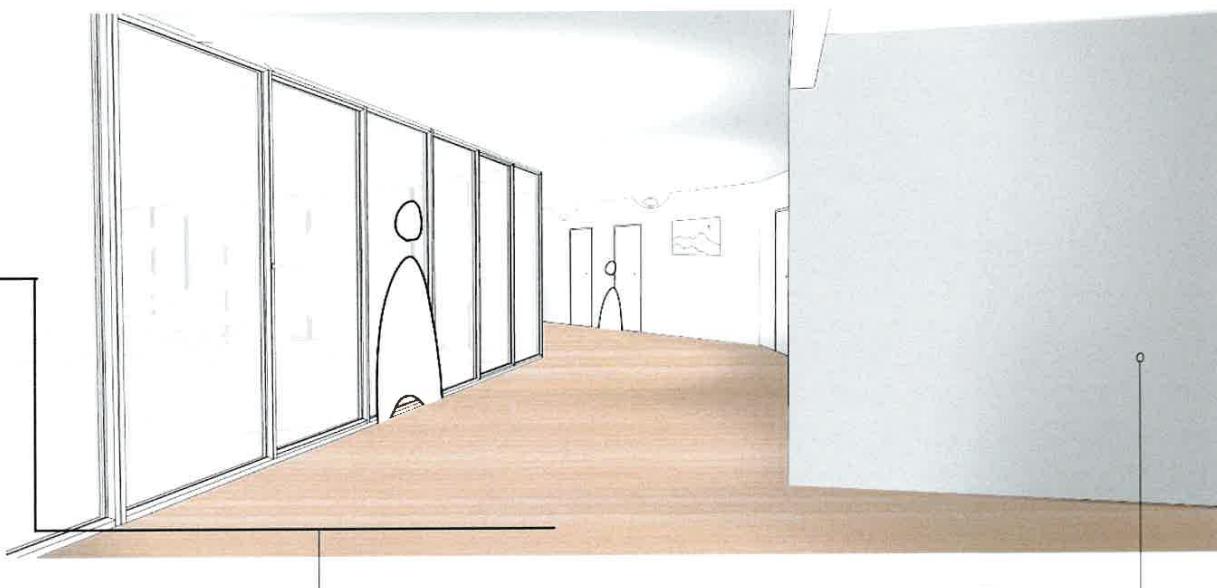
## Organic Material Flooring



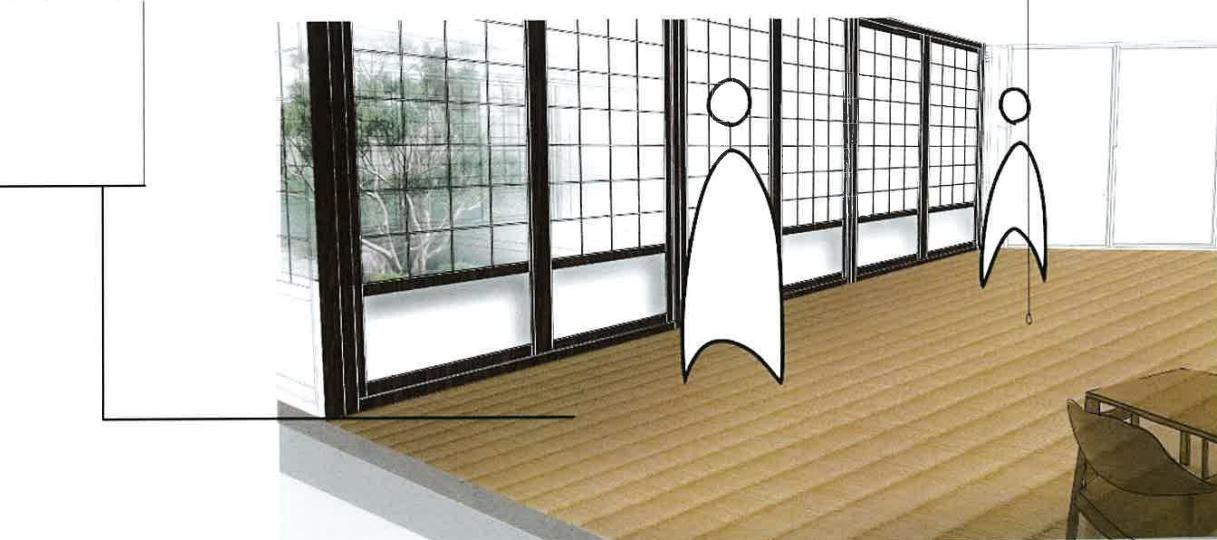
## Tatami Mats



## Textures Stone Tiles

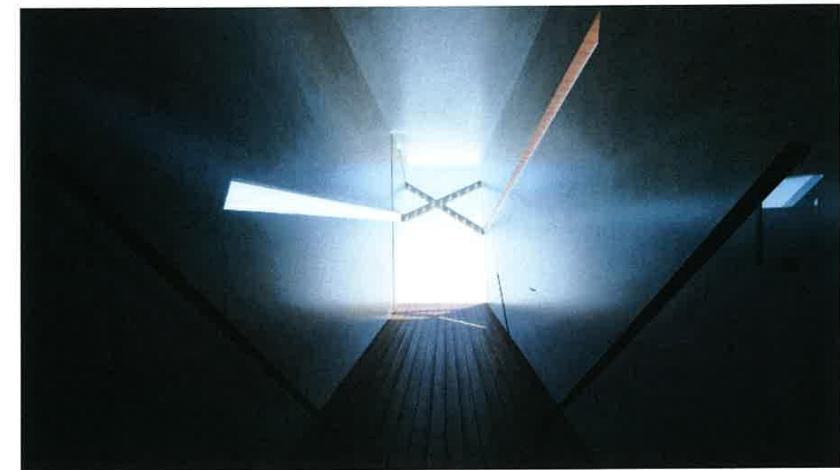
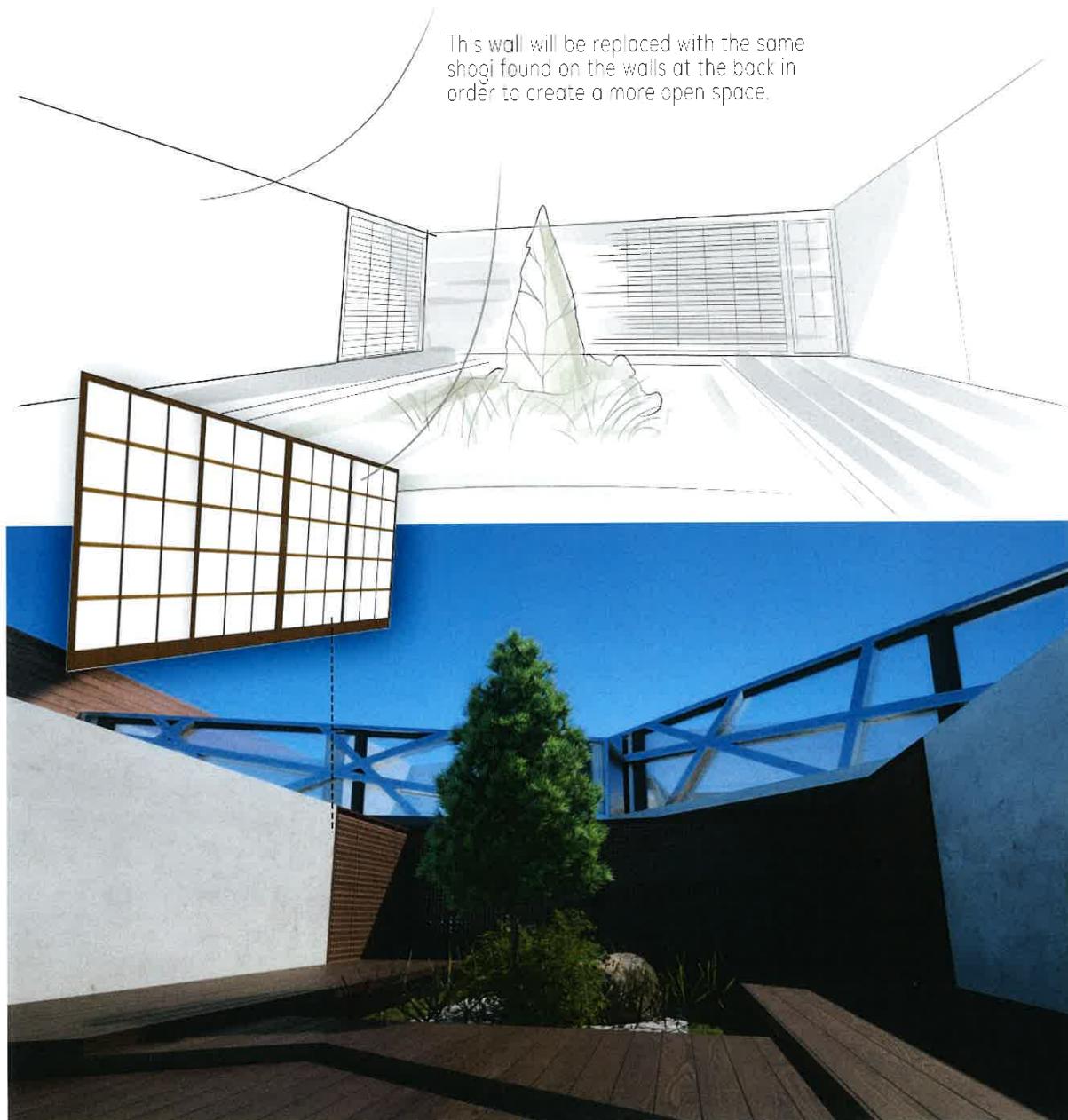


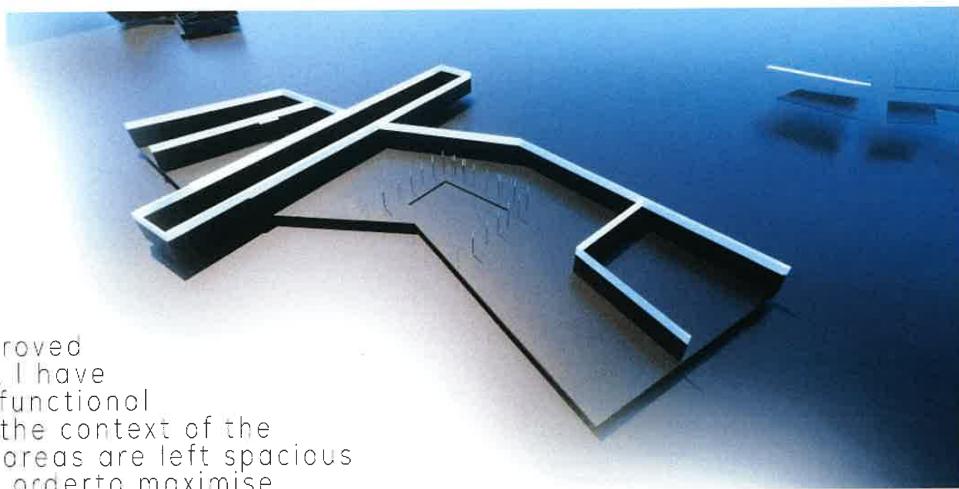
The Tatami mats will be used in these sections of the house around the indoor/outdoor garden as demonstrated in order to stay within the boundaries of the Japanese aesthetic. Tatami mats are also more durable and easier to clean than regular flooring, making the perfect composition for the space leading directly into the outdoors as people may enter the house over the tatami mats with dirty shoes or feet.



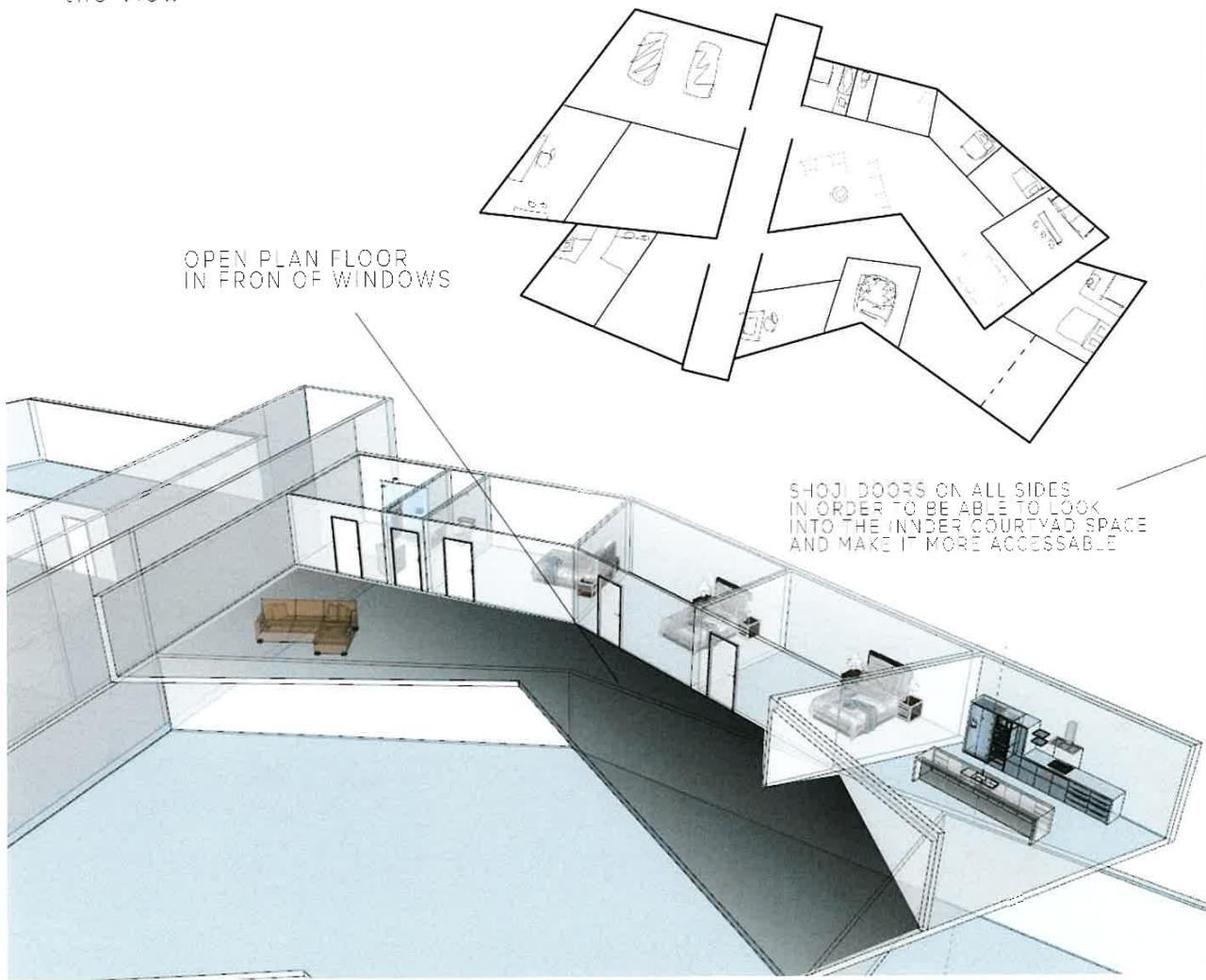
This wall here is out of place, it obstructs the surrounding room's view into the inner courtyard and doesn't contribute to the sense of openness I was hoping to create with this space.

This wall will be replaced with the same shogi found on the walls at the back in order to create a more open space.

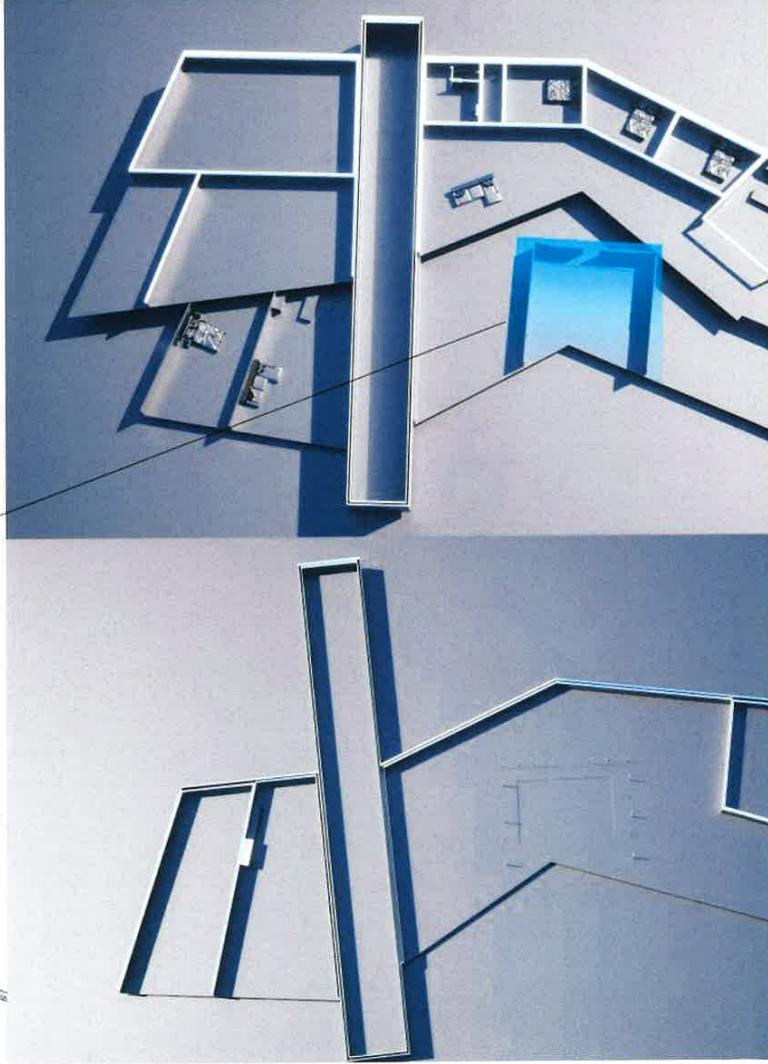


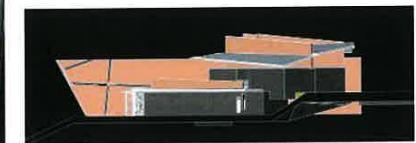
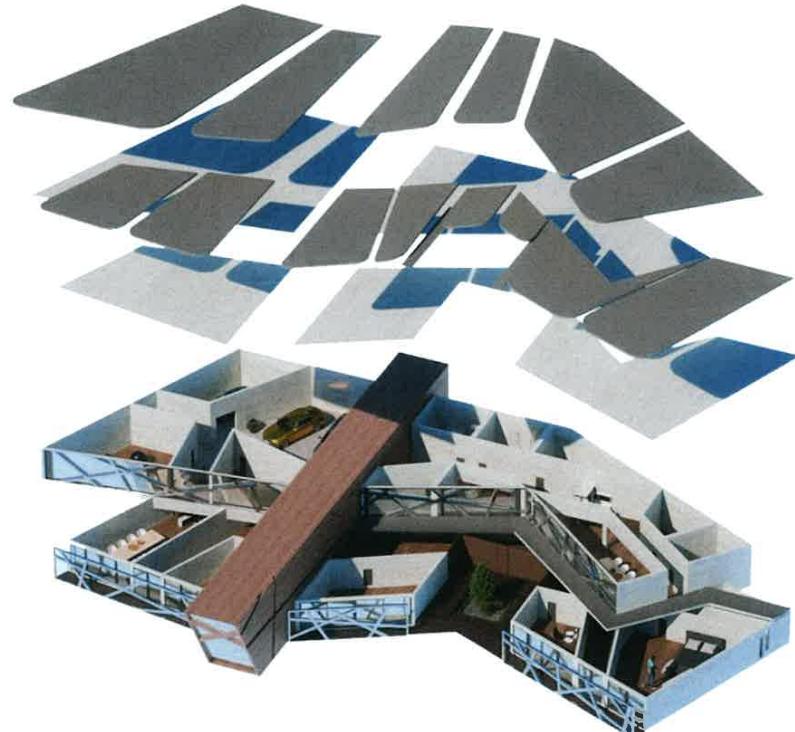


In these this improved floor plan layout, I have made the space functional while working in the context of the design. The front areas are left spacious and open plan in order to maximise the view



SHOJI DOORS ON ALL SIDES  
IN ORDER TO BE ABLE TO LOOK  
INTO THE INNER COURTYARD SPACE  
AND MAKE IT MORE ACCESSIBLE





## MATERIAL SELECTION:

CHARRED TIMBER



IN USE:



CEDAR TIMBER CLADDING



IN USE:



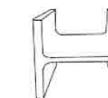
CONCRETE TIMBER CLADDING



IN USE:



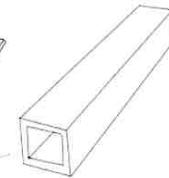
## POTENTIAL OPTIONS:



H - BEAM

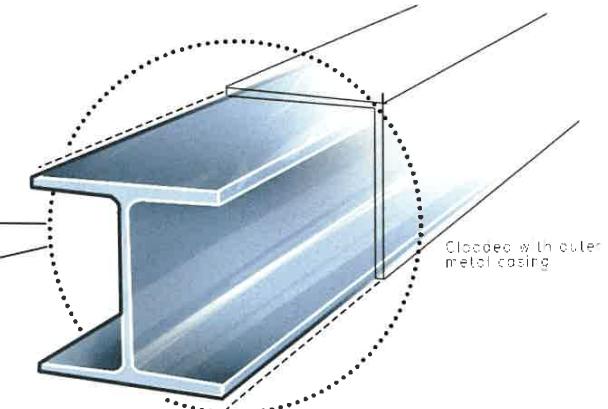


I - BEAM



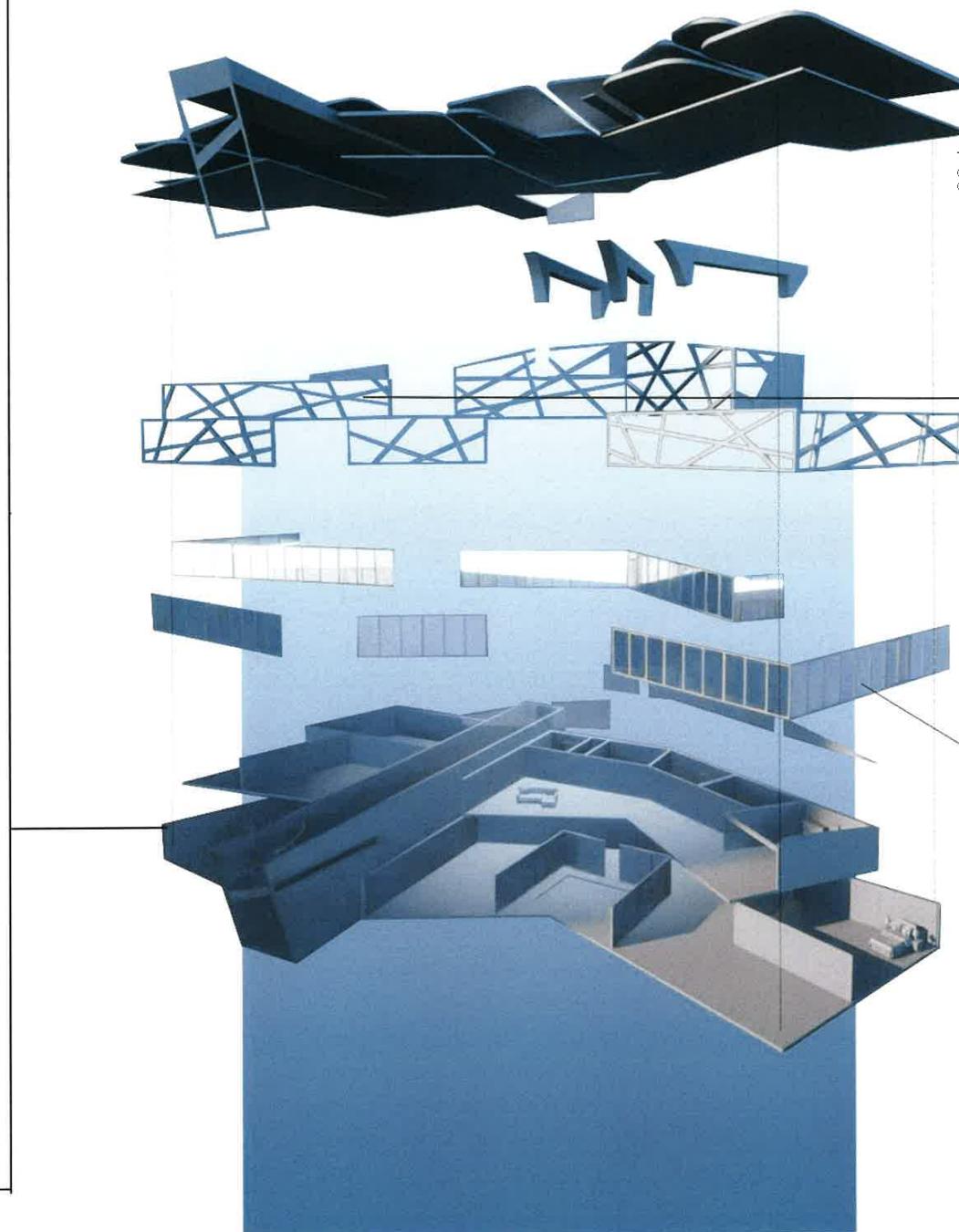
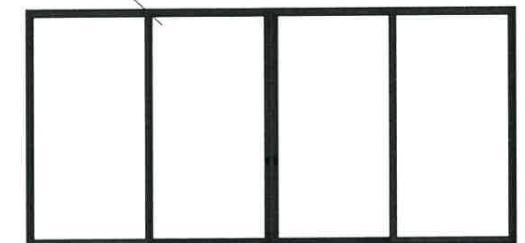
SQUARE BEAM

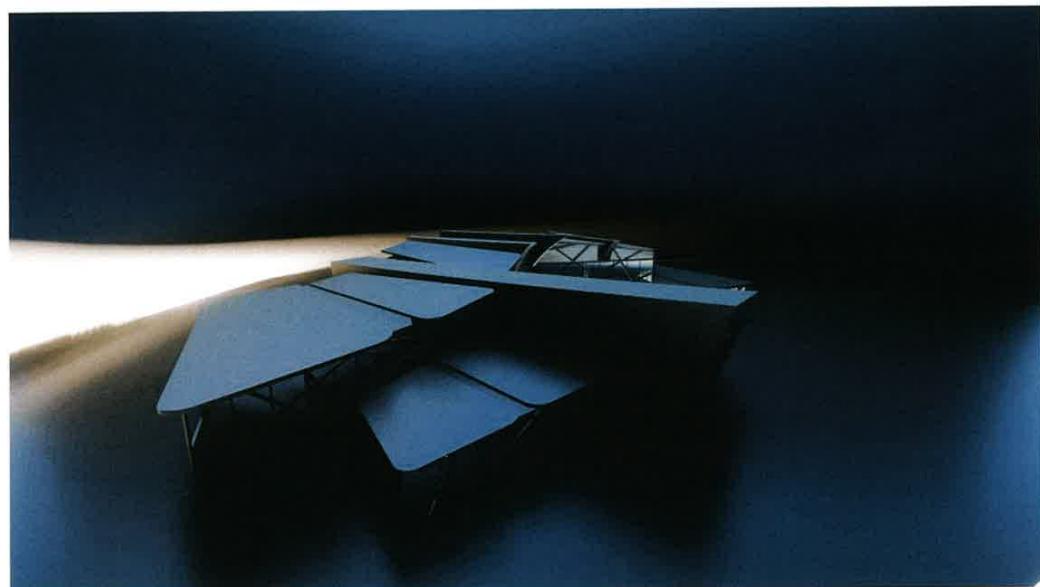
The H - beam and square beam could be combined to create a cladded beam for the water facade.



Cladded with outer metal casing

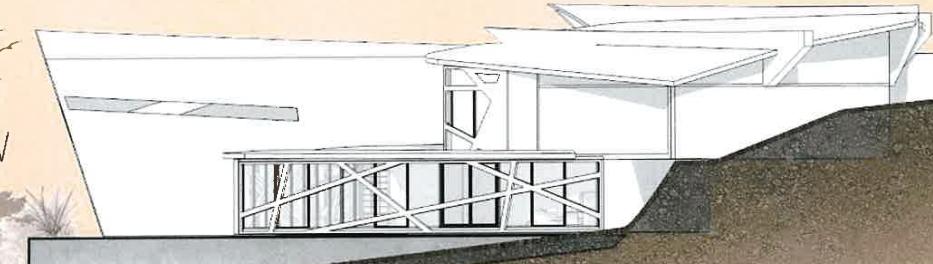
The windows are triple glazed and extend from floor to ceiling in order to allow people looking out to take as much of view in as possible.



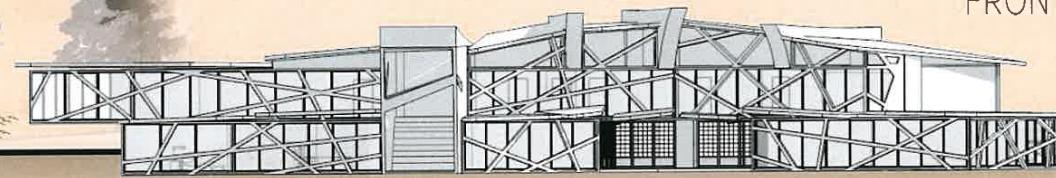


FINAL ELEVATIONS ALL ANGLES

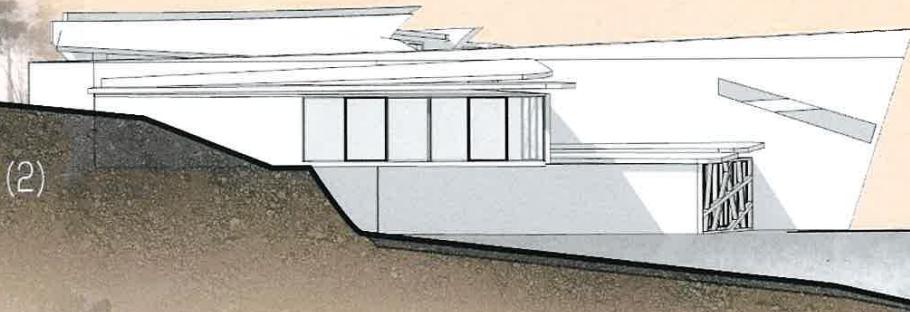
SIDE VIEW



FRONT VIEW



SIDE VIEW (2)



BACK VIEW





Satellite view  
of site

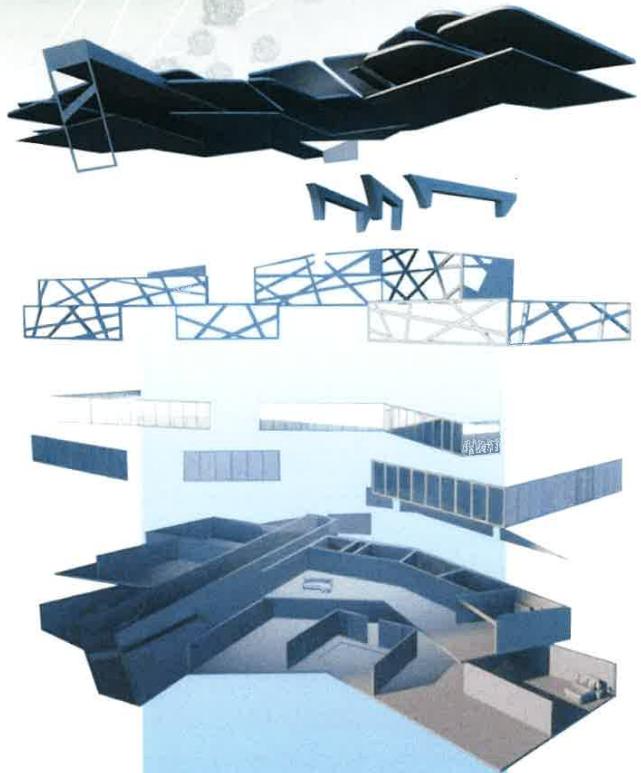
### MULTI GENERATIONAL HOME - COUSTICS HOUSE

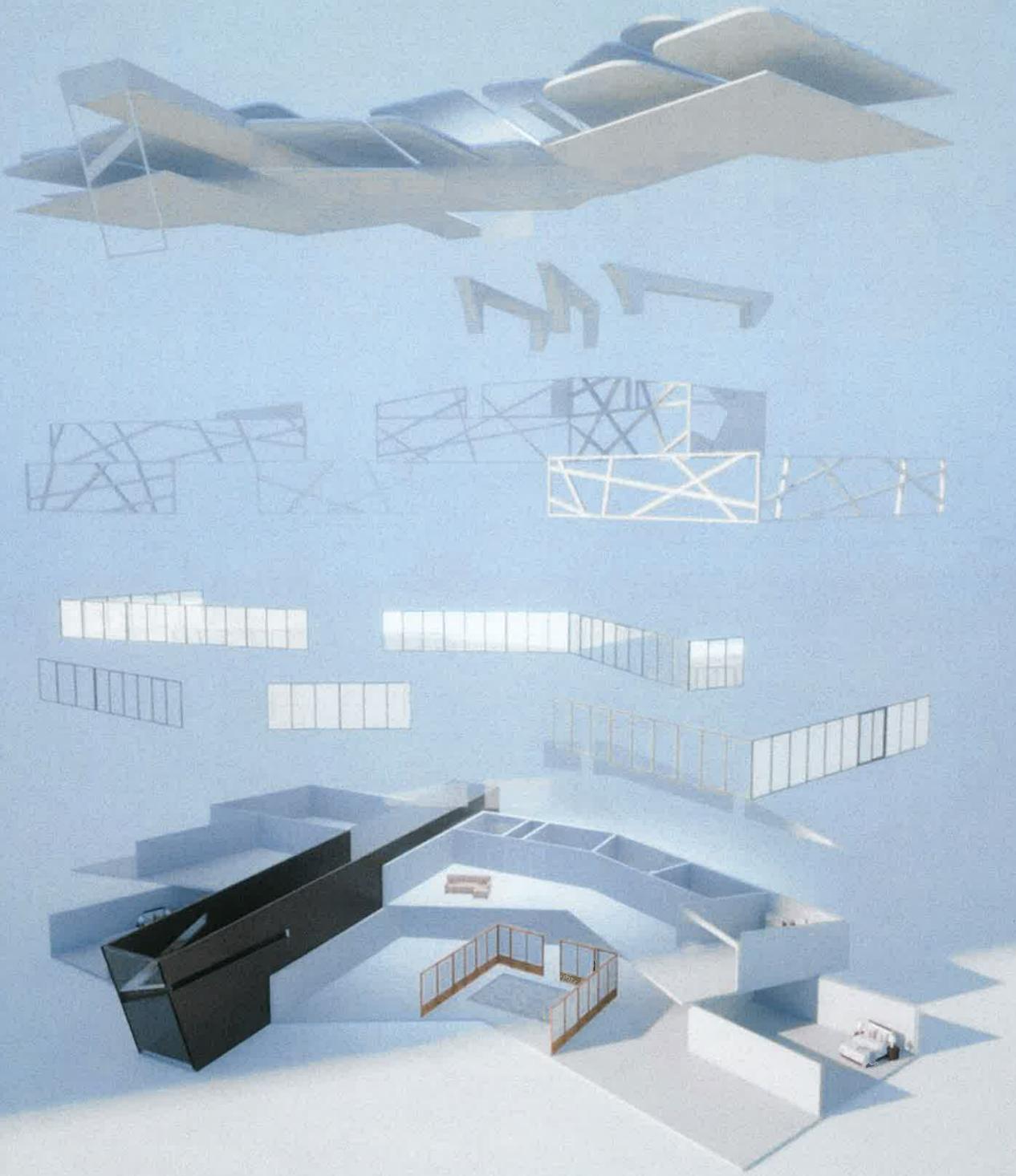
My multi - generational home design features a metal facade inspired by the natural motion and shape water takes and is placed in front of the windows facing the view of the ocean. This design language provides a connection between the environment and the home by using the coastline that is a prominent feature of the location as a direct inspiration for the design direction and process.

The home also features two separate livable areas that can function independently from one another, with the aim of sustaining a multi-generational family, but is also connected to each other through the shared use of some spaces such as the inner courtyard inspired by traditional Japanese architecture. Some of the opportunities and constraints I have encountered throughout my design process include the sloping nature of the terrain I had to work around and the way in which the space would function. This is probably what challenged me the most - knowing what spaces are necessary and



Interior  
Kitchen area



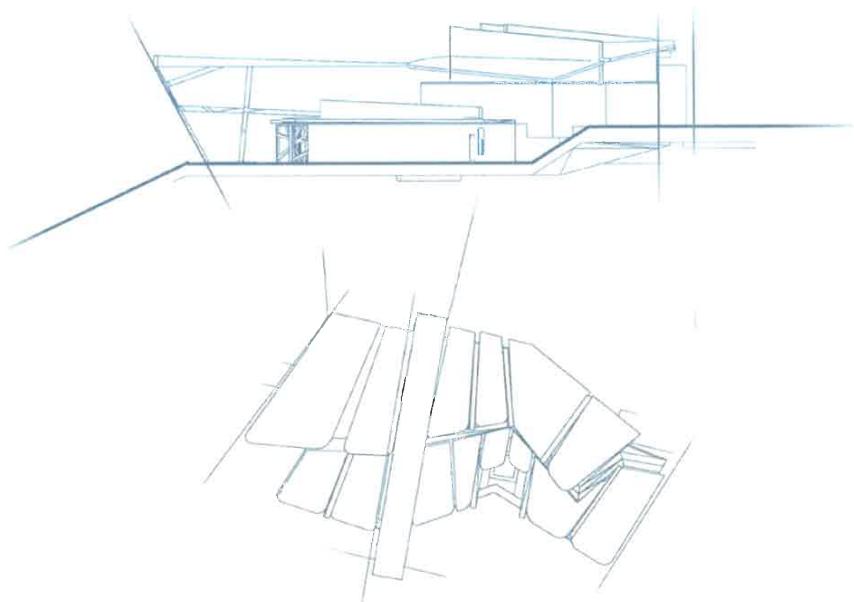




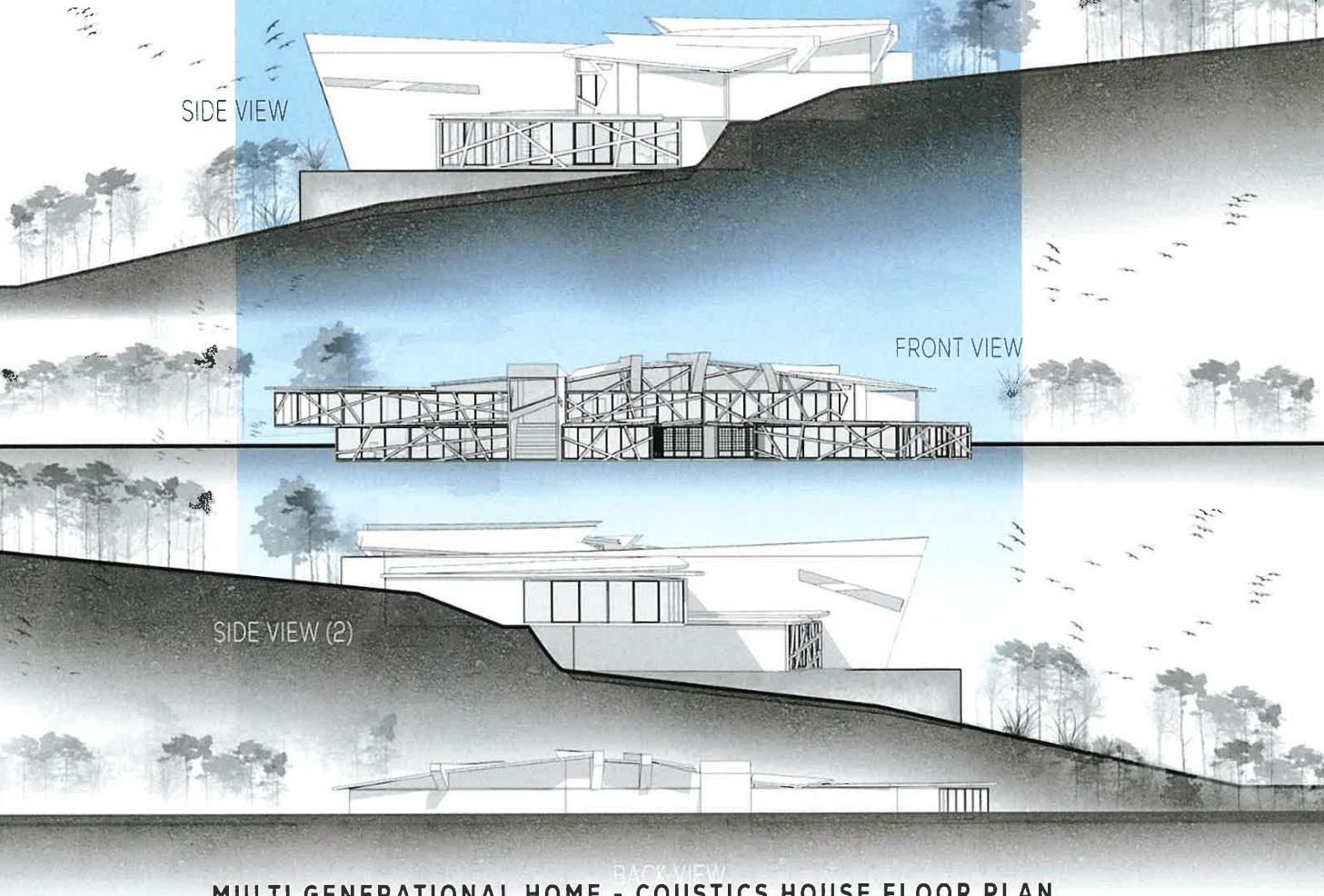
# THE CAUSTICS HOUSE

"THE CAUSTICS HOUSE" REPRESENTS A VISIONARY ARCHITECTURAL CONCEPT THAT SEAMLESSLY MERGES INNOVATIVE DESIGN WITH THE FUNDAMENTAL PRINCIPLES OF SUSTAINABLE LIVING. THIS REMARKABLE DWELLING REDEFINES THE BOUNDARIES OF RESIDENTIAL ARCHITECTURE, BOASTING A CUTTING-EDGE, ENVIRONMENTALLY CONSCIOUS APPROACH.

THE HOUSE'S CORE CONCEPT REVOLVES AROUND HARNESSING NATURAL LIGHT AND OPTIMIZING ITS DISTRIBUTION THROUGH THE CLEVER USE OF REFLECTIVE AND REFRACTIVE MATERIALS, KNOWN AS 'CAUSTICS.' TO CREATE MESMERIZING AND EVER-CHANGING PATTERNS OF ILLUMINATION. WITH ITS OPEN SPACES, HARMONIOUS INTEGRATION WITH NATURE, AND A COMMITMENT TO ENERGY EFFICIENCY, 'THE CAUSTICS HOUSE' SERVES AS A BEACON OF INSPIRATION FOR SUSTAINABLE AND AESTHETICALLY CAPTIVATING LIVING SPACES.

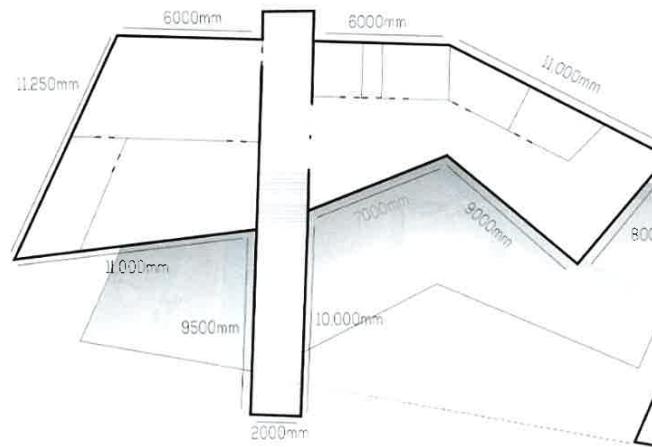


## FINAL ELEVATIONS ALL ANGLES



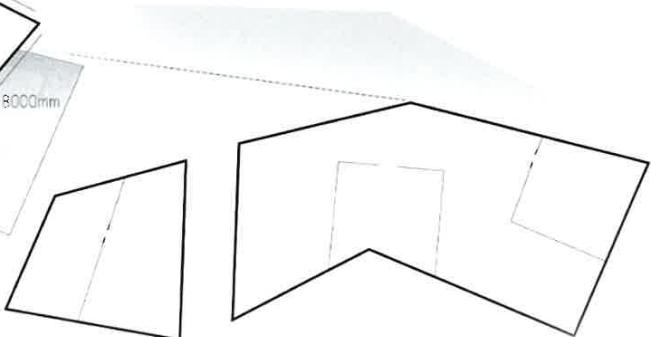
### MULTI GENERATIONAL HOME - COUSTICS HOUSE FLOOR PLAN

Flexible, spacious and refined. This multi-generational home features a two floor layout plan that can function individually or together, creating a harmonious living experience for all those within its walls.

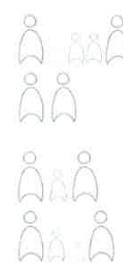
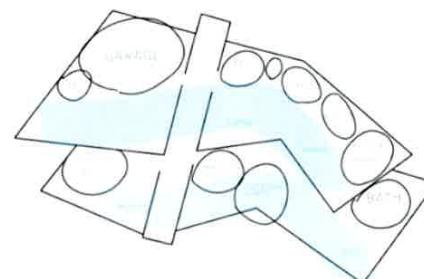
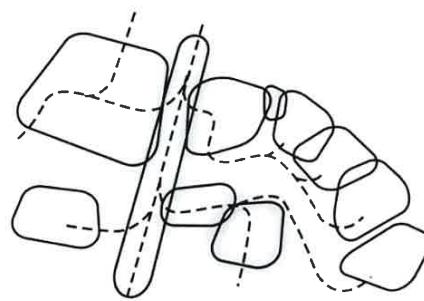


#### ELEVATION & FLOOR PLAN/MEASUREMENTS

These top view sections show the two different spaces and how they might function separately from one another. Ideally, one generation of a family would use the top section/floor while another would use the bottom story/section. It's also mutually beneficial for both families to share some spaces and interact.



These measurements are only a rough estimate meant to indicate the approximate scale of the building and site.



Der Ort  
Die Anreise nach Lüneburg ist mit speziell für den Verkehrsteil vorgesehenen Radwegen und Fußwegen sowie ausgewiesenen Radfahrstreichen und Fußgängerstreichen ausgestattet. Die Radwege sind weitestgehend asphaltiert und führen von der Autobahn aus über die B 207 nach Lüneburg.



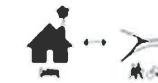
Luftliniendistanz  
Von Lüneburg bis zum Zielort beträgt die Luftliniendistanz ca. 100 km. Der Flugzeitraum beträgt ca. 1 Stunde.



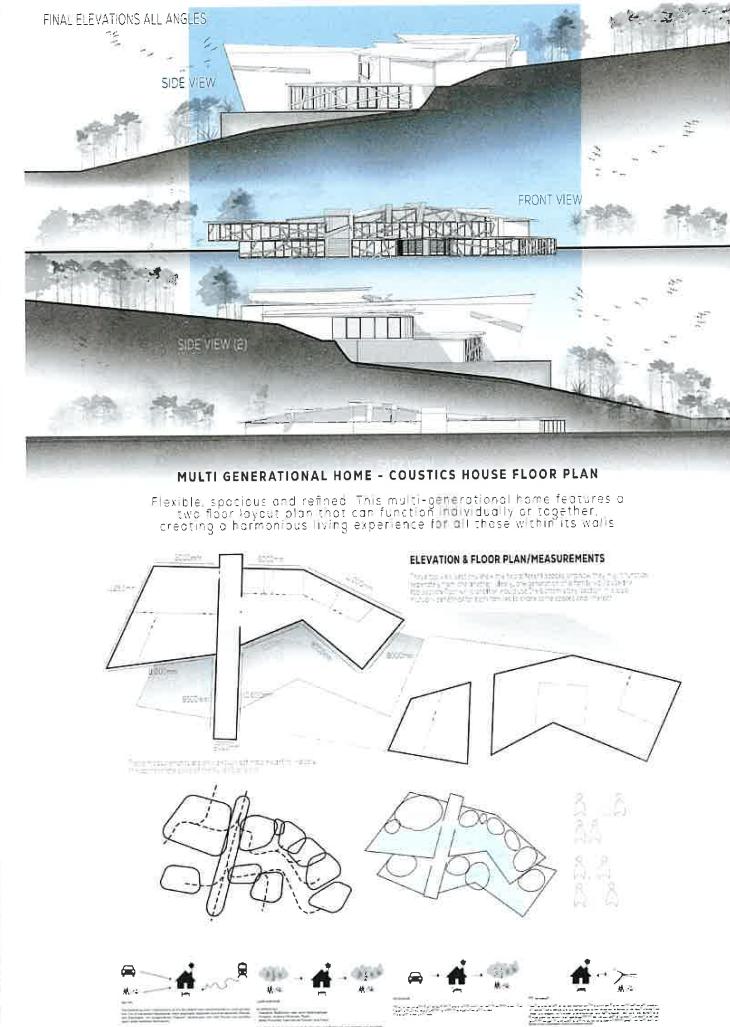
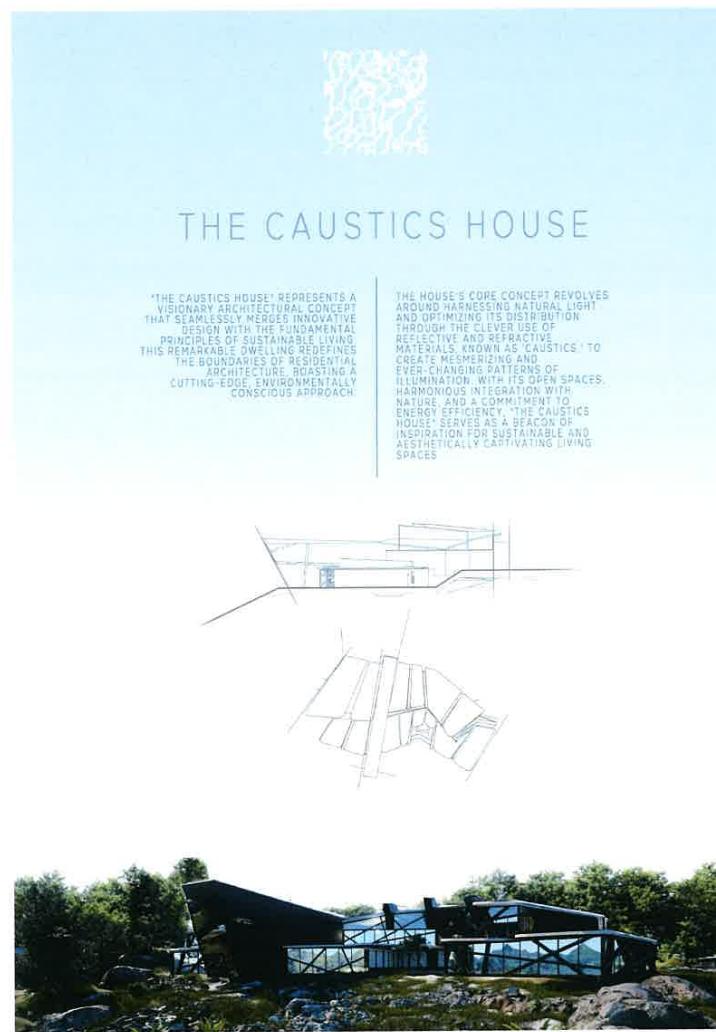
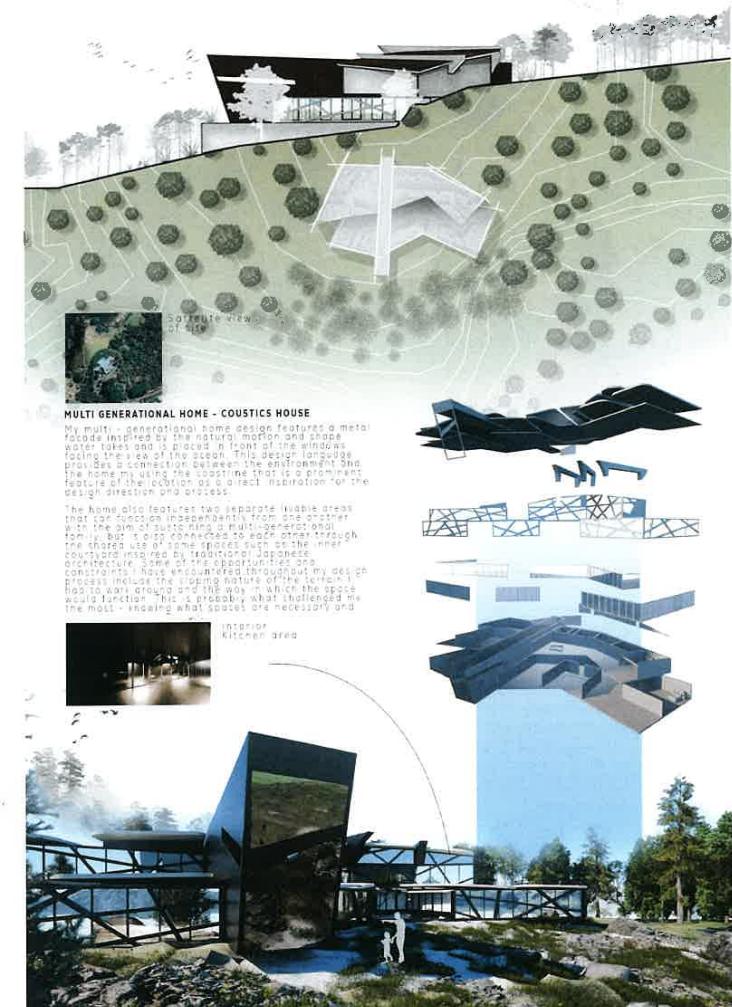
Wanderweg  
Von Lüneburg aus führt ein Wanderweg parallel mit Wegen mit einem Radweg verbunden. Dieser Radweg führt über die Lüneburger Heide hinunter in beide Seiten des Flusses. Über dieser Radweg verläuft ein ausgewiesener Radweg, der zwischen dem Radweg und dem Fußweg einen Abstand von 2 Tagen aufweist.

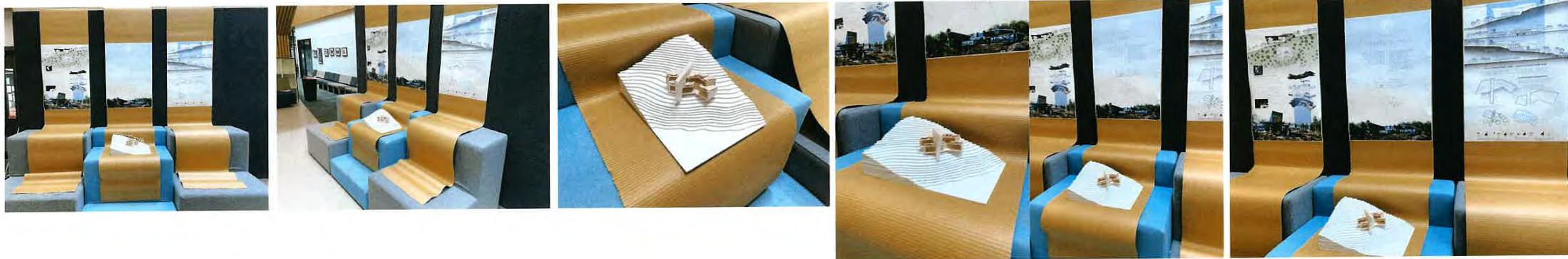


Ausflug  
Auf einer Ausfahrt aus dem Bergedorf ist ein Radweg mit Wegen mit einem Radweg verbunden. Dieser Radweg führt über die Lüneburger Heide hinunter in beide Seiten des Flusses. Über dieser Radweg verläuft ein ausgewiesener Radweg, der zwischen dem Radweg und dem Fußweg einen Abstand von 2 Tagen aufweist.

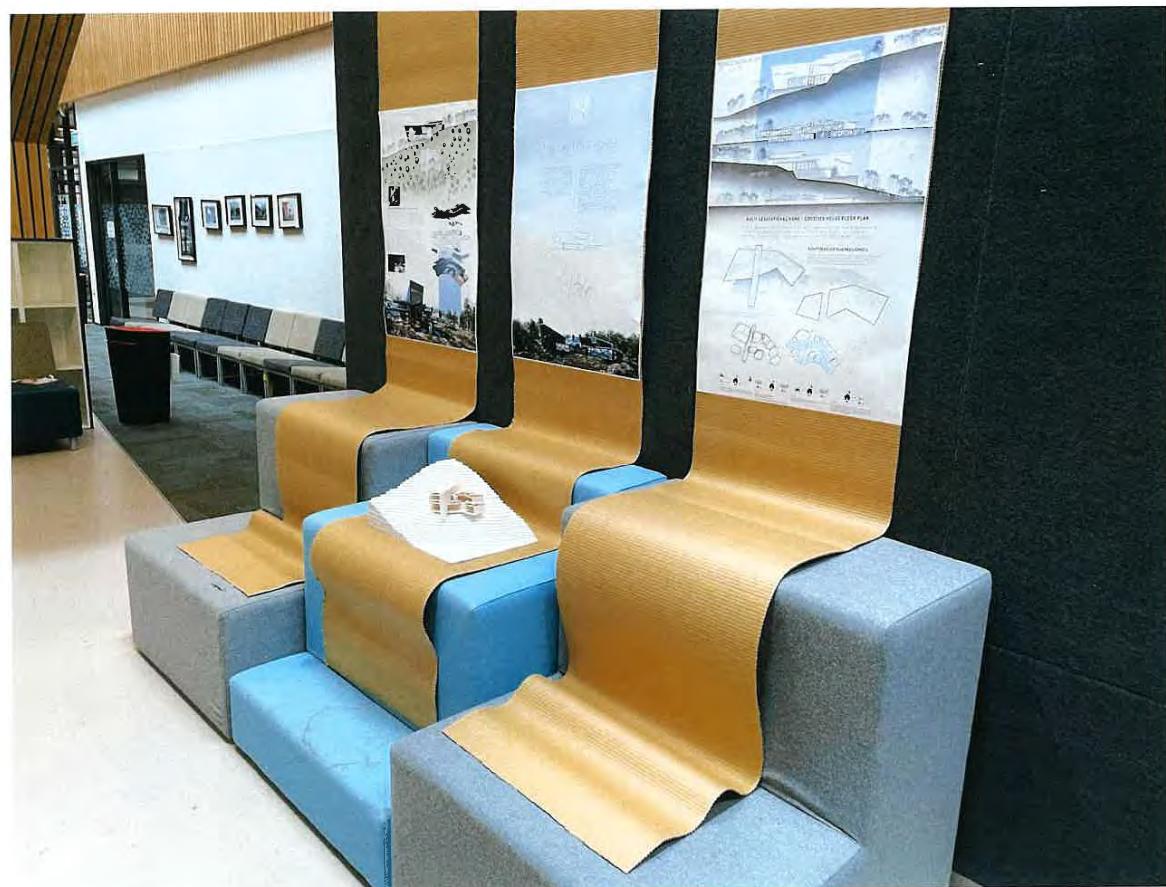


Die Wiedergabe  
Um Personenkreise an der der Wohnung zu bewegen und Bewegung von Unternehmen zu gestalten, kann dieser Ort durch eine entsprechende Anordnung in beiden Seiten des Flusses. Unter anderem kann hier eine entsprechende Anordnung von Personen, Familien und Freunden stattfinden. Einige Personen können sich in der Wohnung aufhalten, während andere im Freien unterwegs sind.



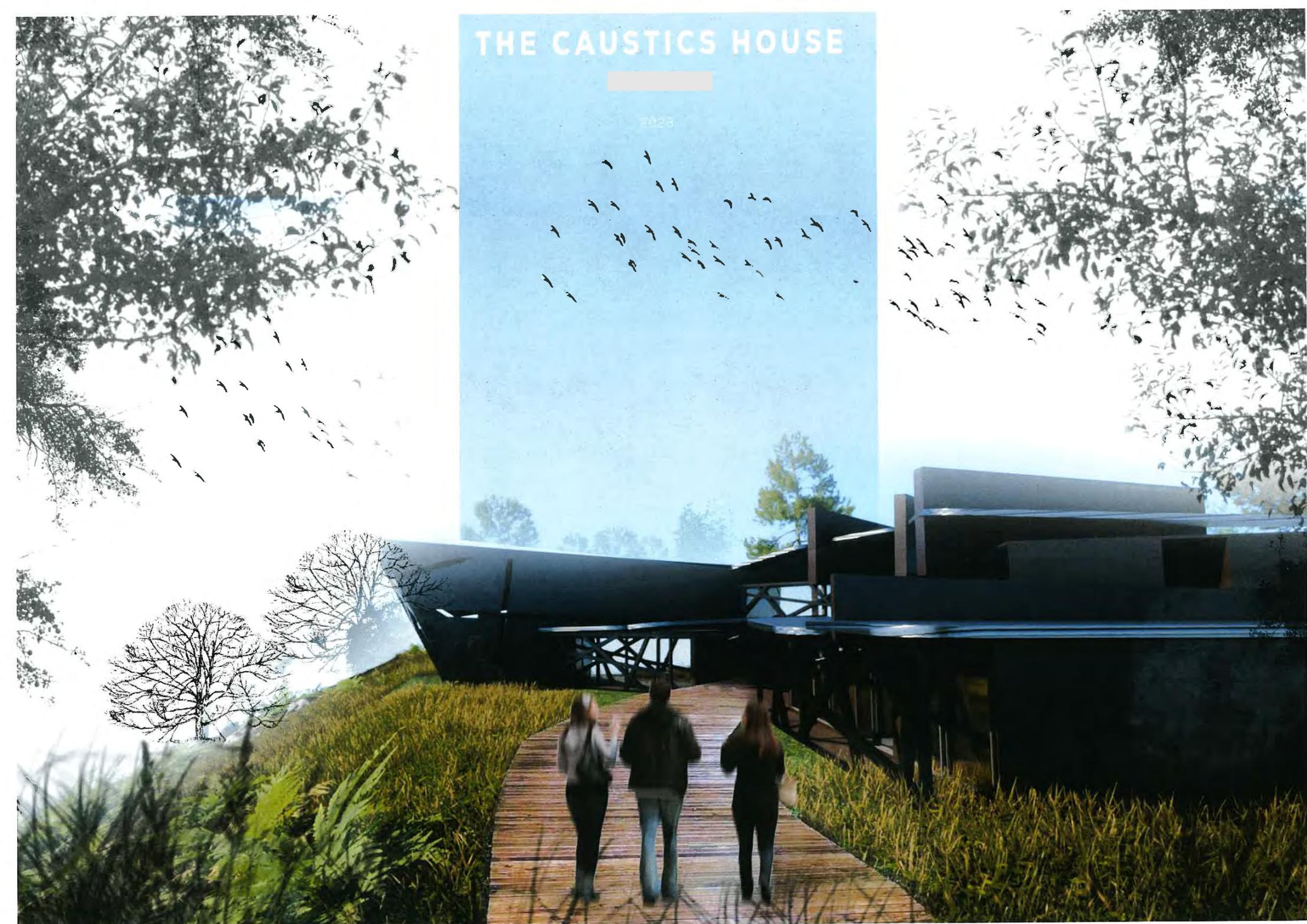


## DESIGN EXHIBIT, THE CAUSTICS HOUSE



# THE CAUSTICS HOUSE

2023





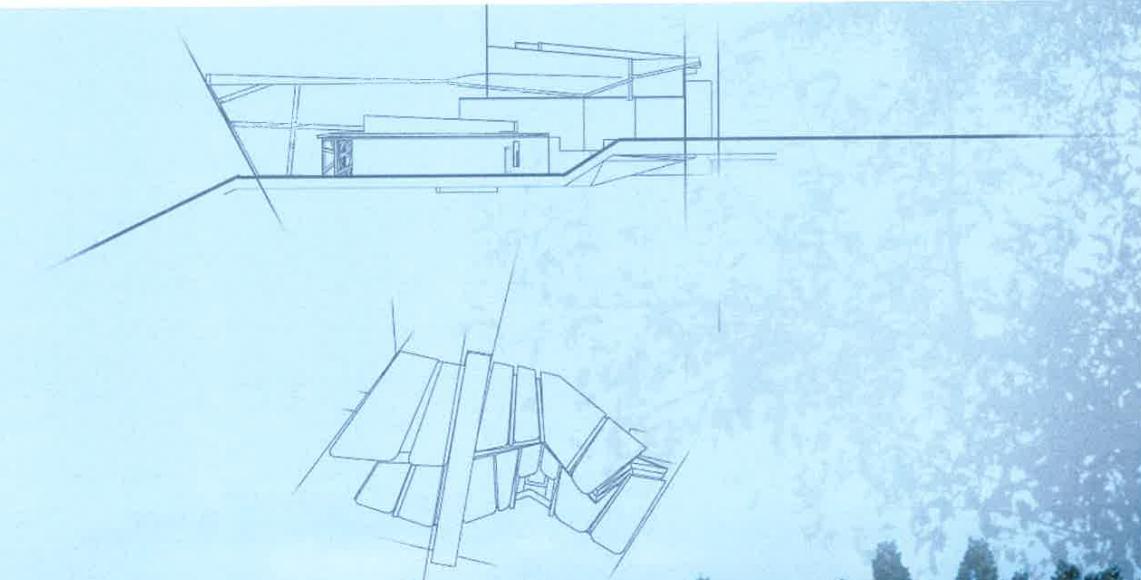


## THE CAUSTICS HOUSE



## FINAL EVALUATION

My multi - generational home design features a metal facade inspired by the natural motion and shape water takes and is placed in front of the windows facing the view of the ocean. This design language provides a connection between the environment and the home my using the coastline that is a prominent feature of the location as a direct inspiration for the design direction and process. The home also features two separate livable areas that can function independently from one another, with the aim of sustaining a multi-generational family, but is also connected to each other through the shared use of some spaces such as the inner courtyard inspired by traditional Japanese architecture. Some of the opportunities and constraints I have encountered throughout my design process include the sloping nature of the terrain I had to work around and the way in which the space would function. This is probably what challenged me the most - knowing what spaces are necessary and what spaces are not within a multi generational home.





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## Outstanding Scholarship

**Subject:** Design and Visual Communication

**Standard:** 93602

**Total score:** 19

Score	Marker commentary
06	<p><b>Design ideation</b></p> <p>The ideas in this submission draw on several influences that work well together. The concept of caustics and the shimmering distortions created by sunlight in water is the dominant influence and is revisited often throughout the project. The distorted and flowing deconstructivist forms of Zaha Hadid's work is also an influence as is the site itself. The quality of the ideas increases throughout this project as the continued exploration and experimentation leads to an increasingly complex and interesting design.</p>
06	<p><b>Design practice</b></p> <p>The design thinking in this submission is strongly tied to its context. The location and site for the house is always at the forefront of the designer's mind and continuously influences ideas and decisions. The project shows intentional thinking in the way it weaves together a range of influences to create a building that is well integrated into its site. The design practice focuses on the big ideas and exploring how the parts work together as a whole. Visual techniques help to explore and refine the design as it continuously evolves and increases in complexity. People are lightly considered throughout the project. The outcome demonstrates the use of intentional thinking to create a complex and interesting building.</p>
07	<p><b>Visual communication</b></p> <p>The visual communication of the narrative is a strength of this submission. A range of sophisticated techniques have been used to convey the thinking embodied within the design practice. A range of sketching and digital techniques have been used to express the development of ideas. The visuals help to show how the thinking weaves together exterior form, interior space, and site considerations. A range of viewpoints and rendering styles have been used masterfully to give a convincing portrayal of the design ideas and outcome. Each page of the submission is interesting, purposeful and has a well-balanced layout that enhances the communication of thinking.</p>