

PORTFOLIO | FARASAT MIRZA



Visit [FarasatMirza.com](https://FarasatMirza.com)

## Hey There!

Thank you for taking the time to have a look at my portfolio. This portfolio was created to show you who I am as an architect and designer. I aim to show not only my work, but how I work, my thought process and workflows that I have developed while attaining my Bachelor of Architecture at Abu Dhabi University and by competing in architecture competitions.

I also encourage you to visit my website, [FarasatMirza.com](https://FarasatMirza.com). There you will find more detail on each project mentioned in this portfolio as well as the most updated list of projects.

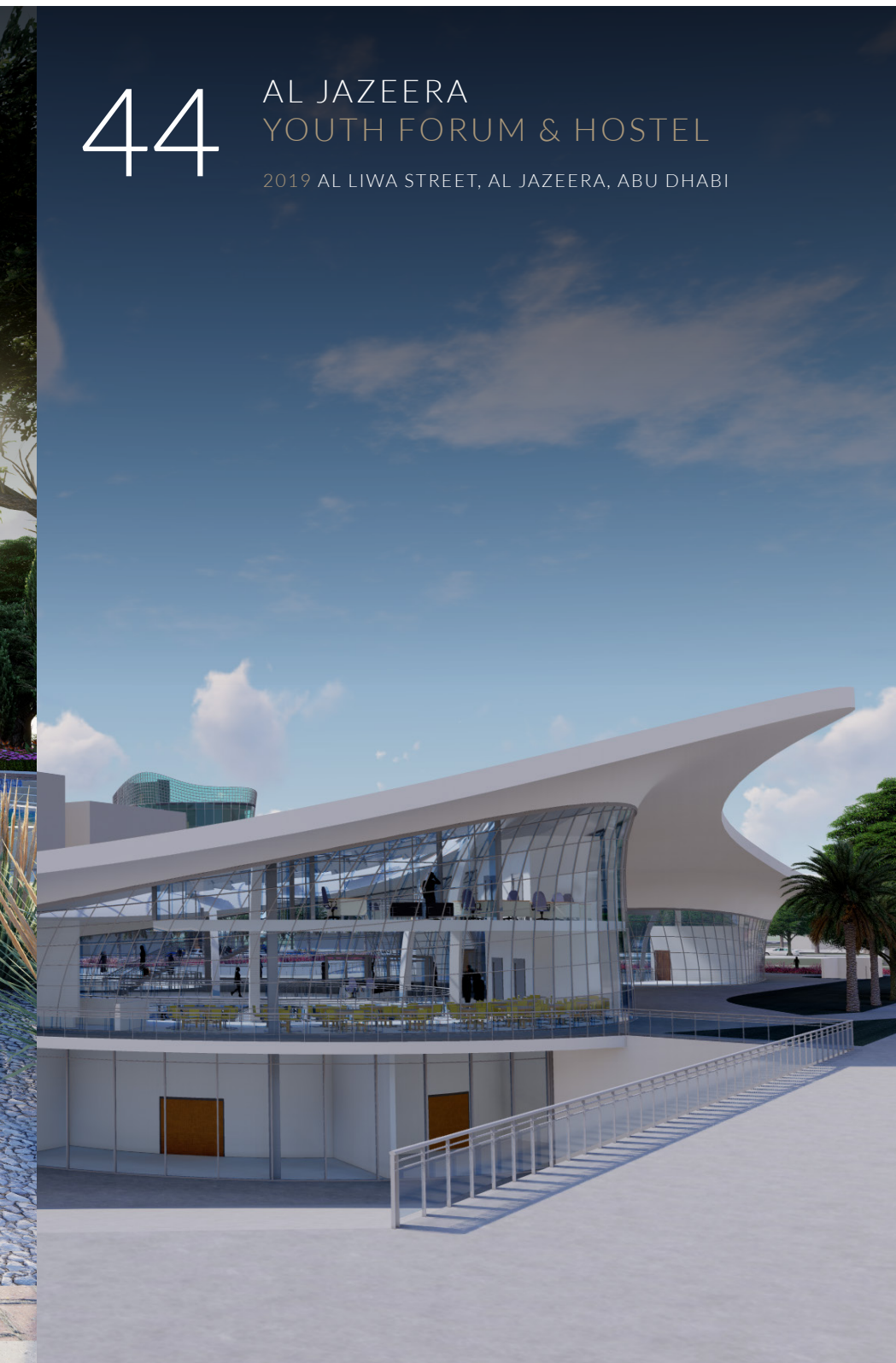
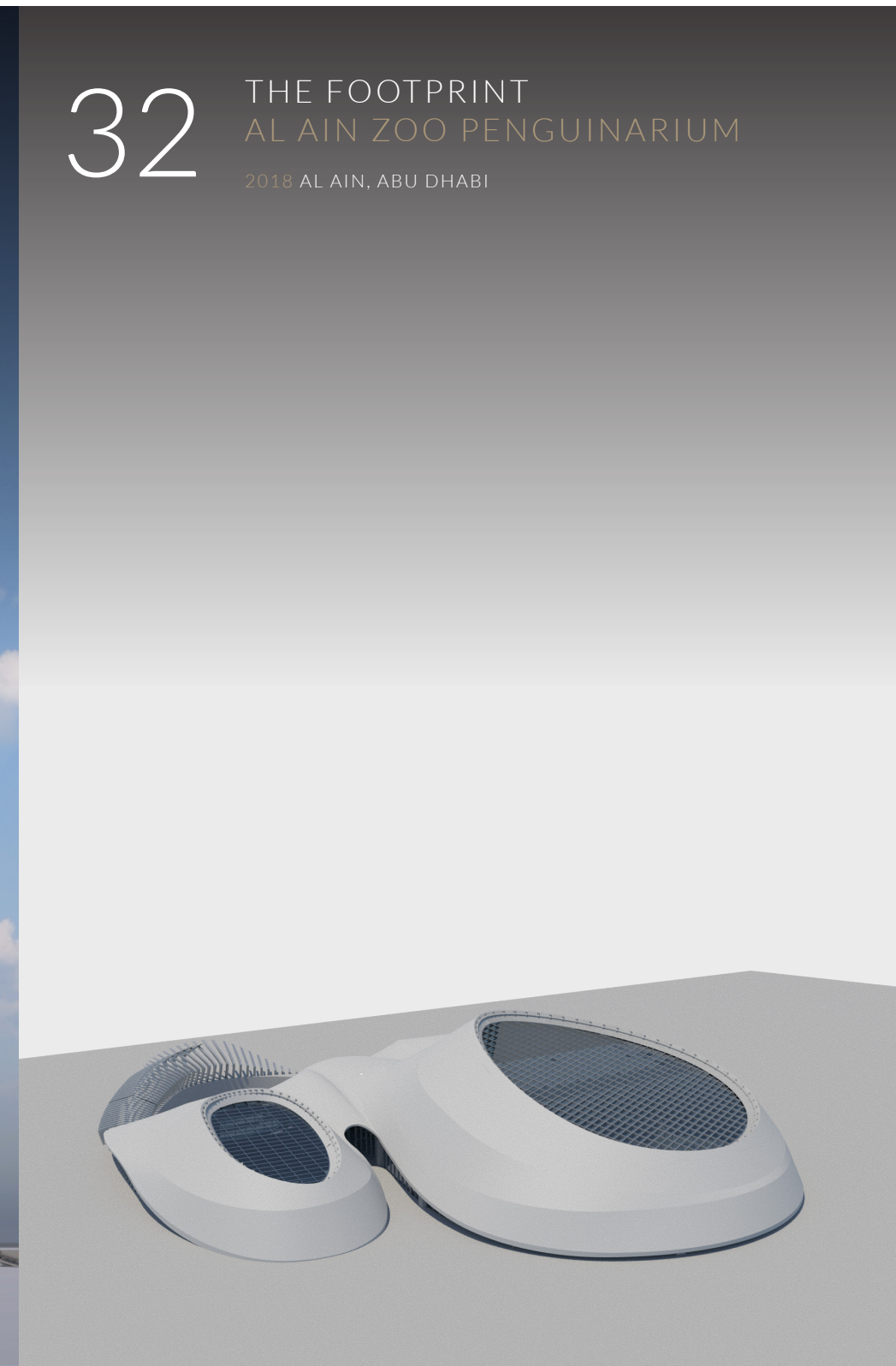
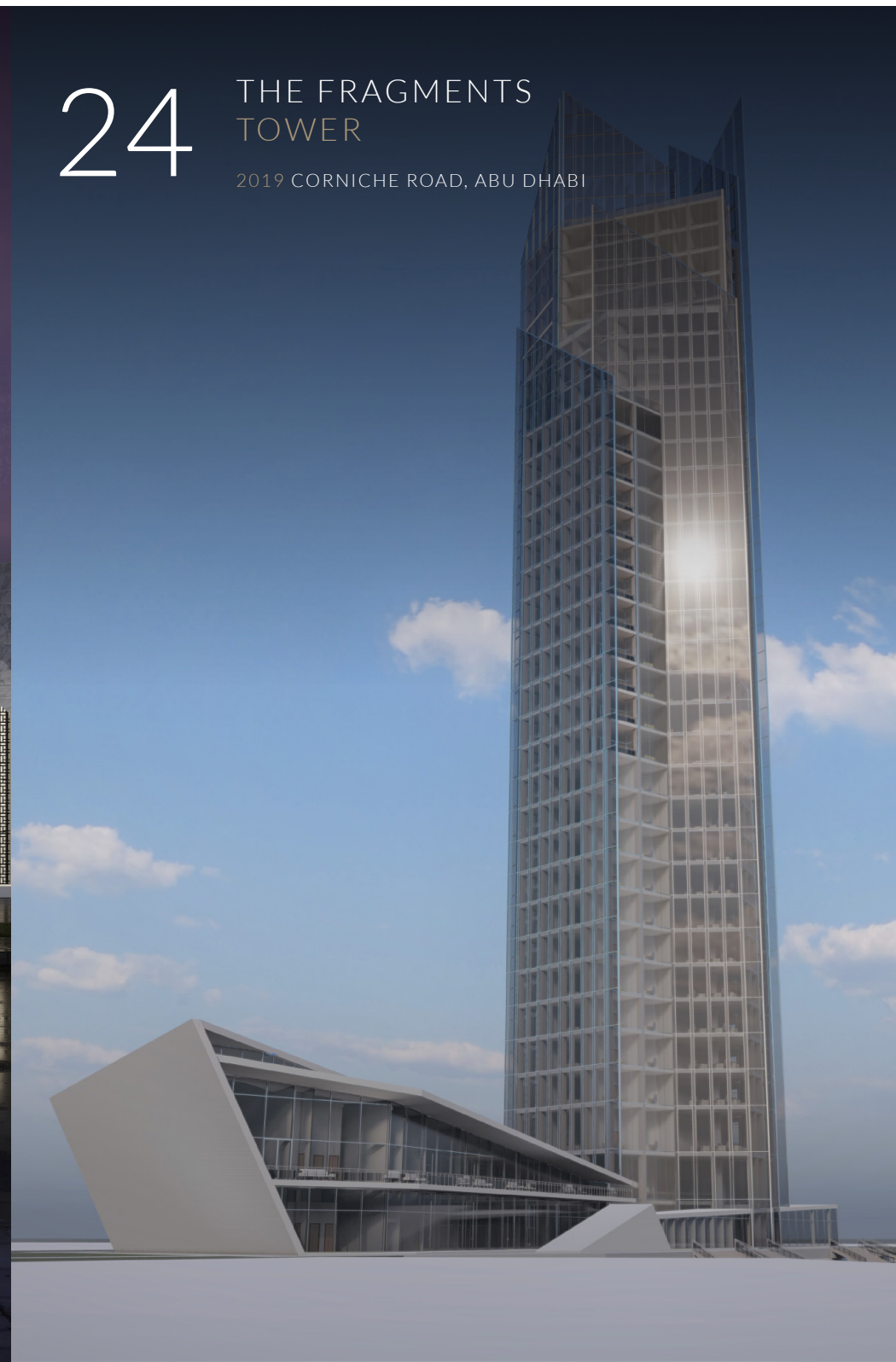
I hope you appreciate the time taken to craft this portfolio and my website. Most importantly however, I hope you enjoy going through this portfolio!

Best wishes,

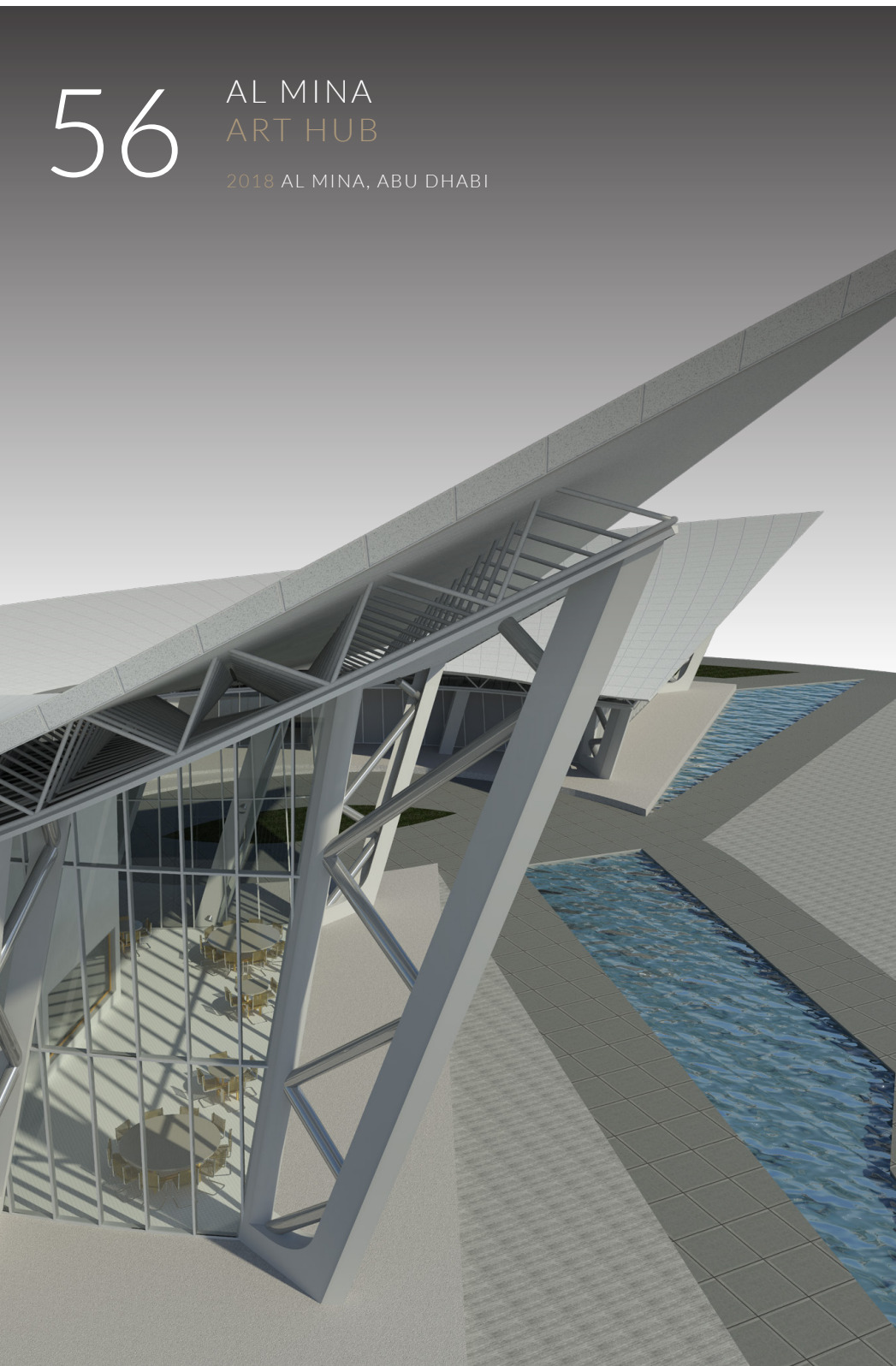
A handwritten signature in black ink, appearing to read 'Farasat', with a long horizontal stroke extending to the right.

Farasat Mirza

# DESIGN STUDIO



# DESIGN STUDIO



56 AL MINA  
ART HUB  
2018 AL MINA, ABU DHABI



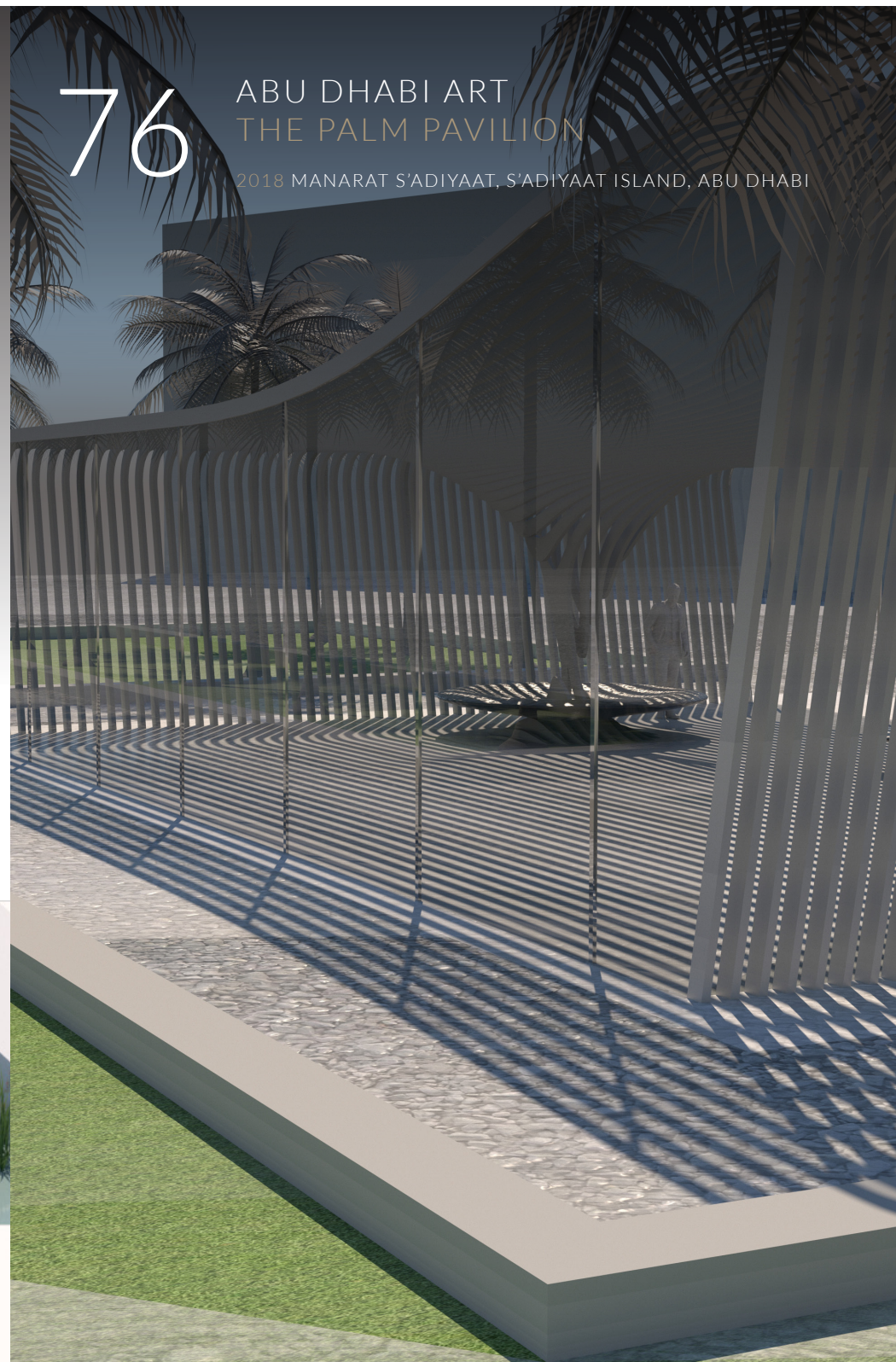
60 THE DHOW  
VILLA  
2017 AL ZEINA, ABU DHABI



64 ESTIDAMA  
SUSTAINABLE MASTER PLAN  
2019 AL AIN, ABU DHABI



70 ABU DHABI YOUTH HUB  
EXTERNAL PAVILION  
2019 HERITAGE PARK, ABU DHABI



76 ABU DHABI ART  
THE PALM PAVILION  
2018 MANARAT S'ADIYAAT, S'ADIYAAT ISLAND, ABU DHABI



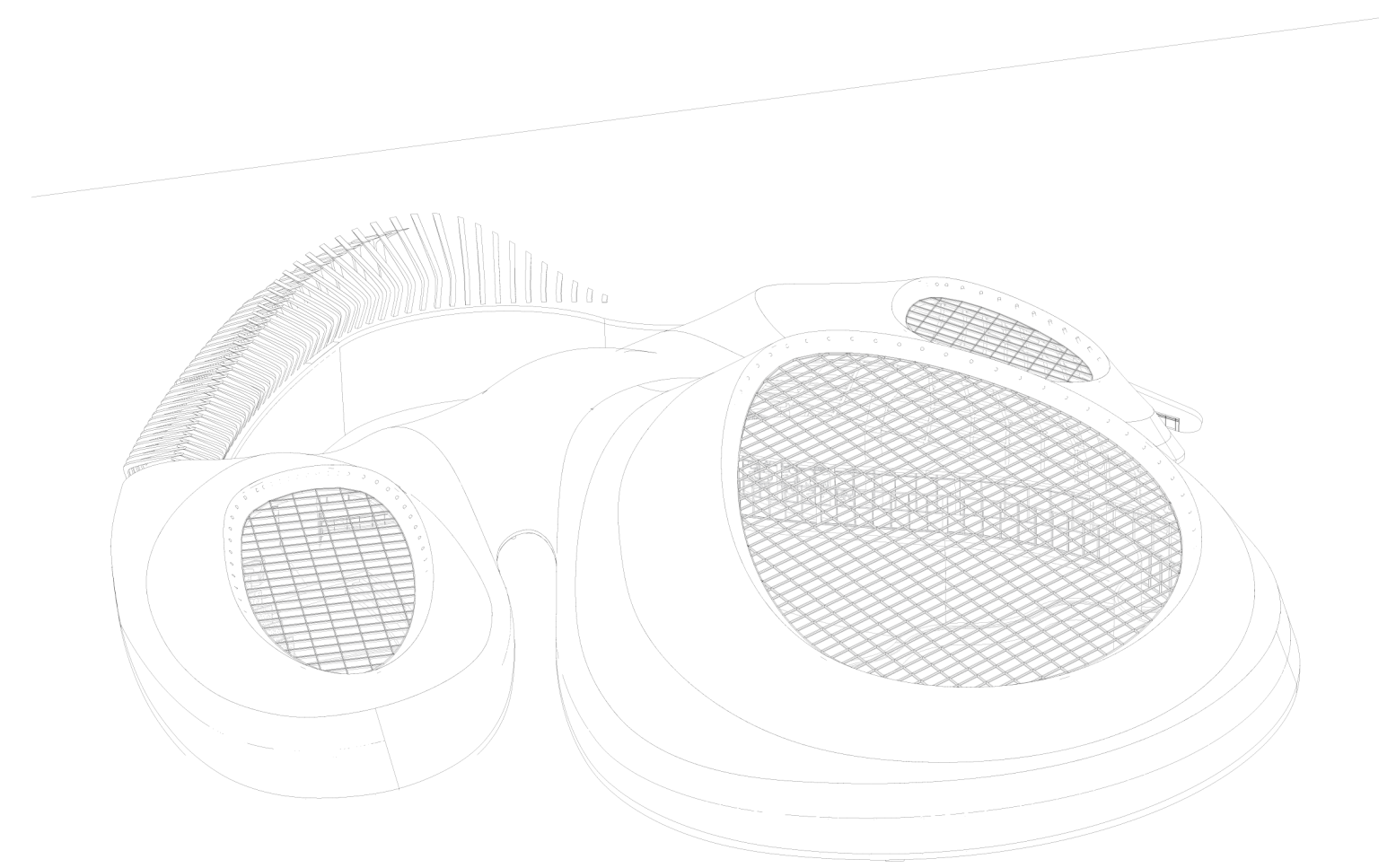
80 THE LOUVRE ABU DHABI  
POP UP ARCHITECTURE  
2018 THE LOUVRE, S'ADIYAAT ISLAND, ABU DHABI

# COMPETITION

# TECHNICAL

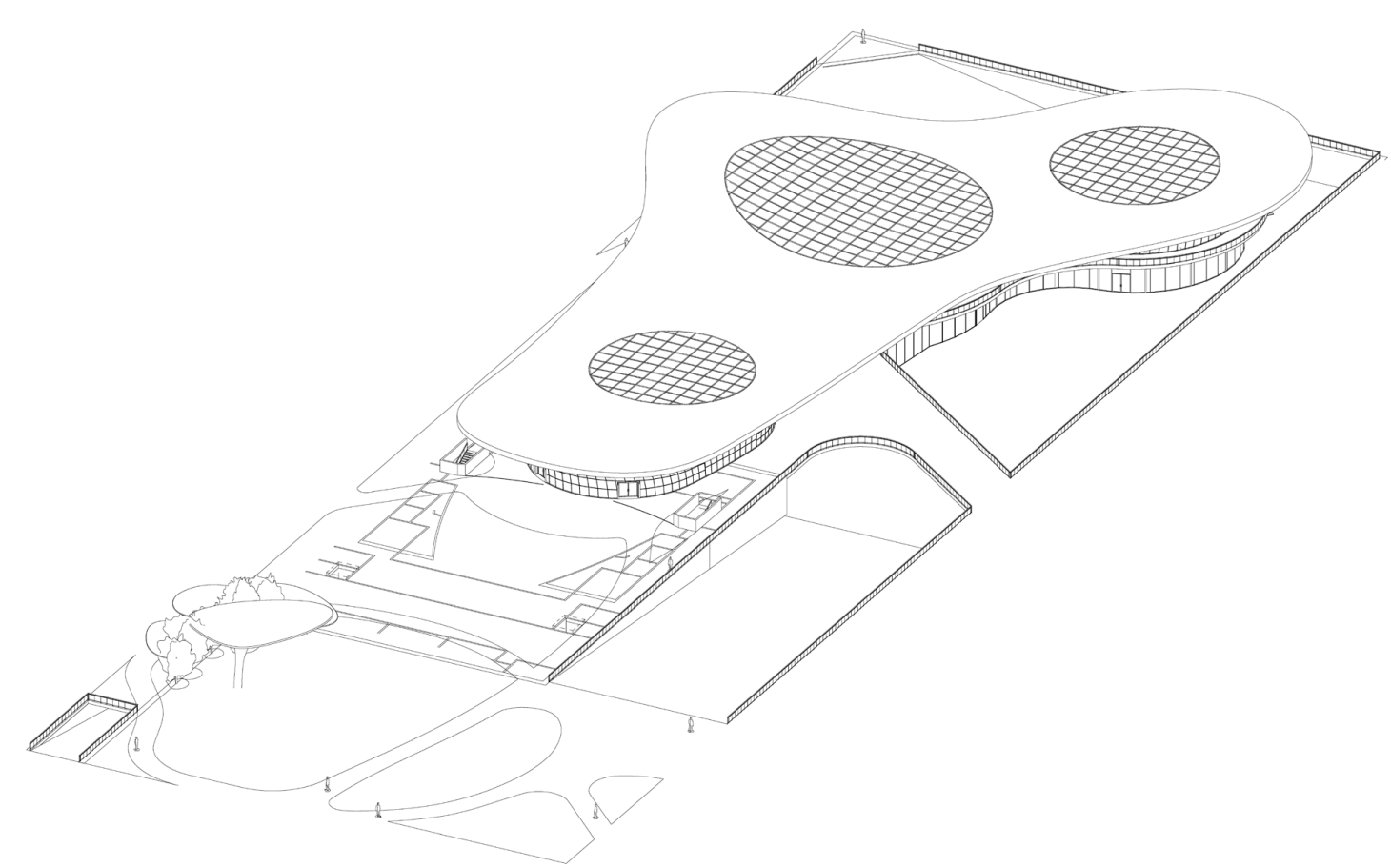
86

THE FOOTPRINT  
AL AIN ZOO PENGUINARIUM  
2018 AL AIN, ABU DHABI



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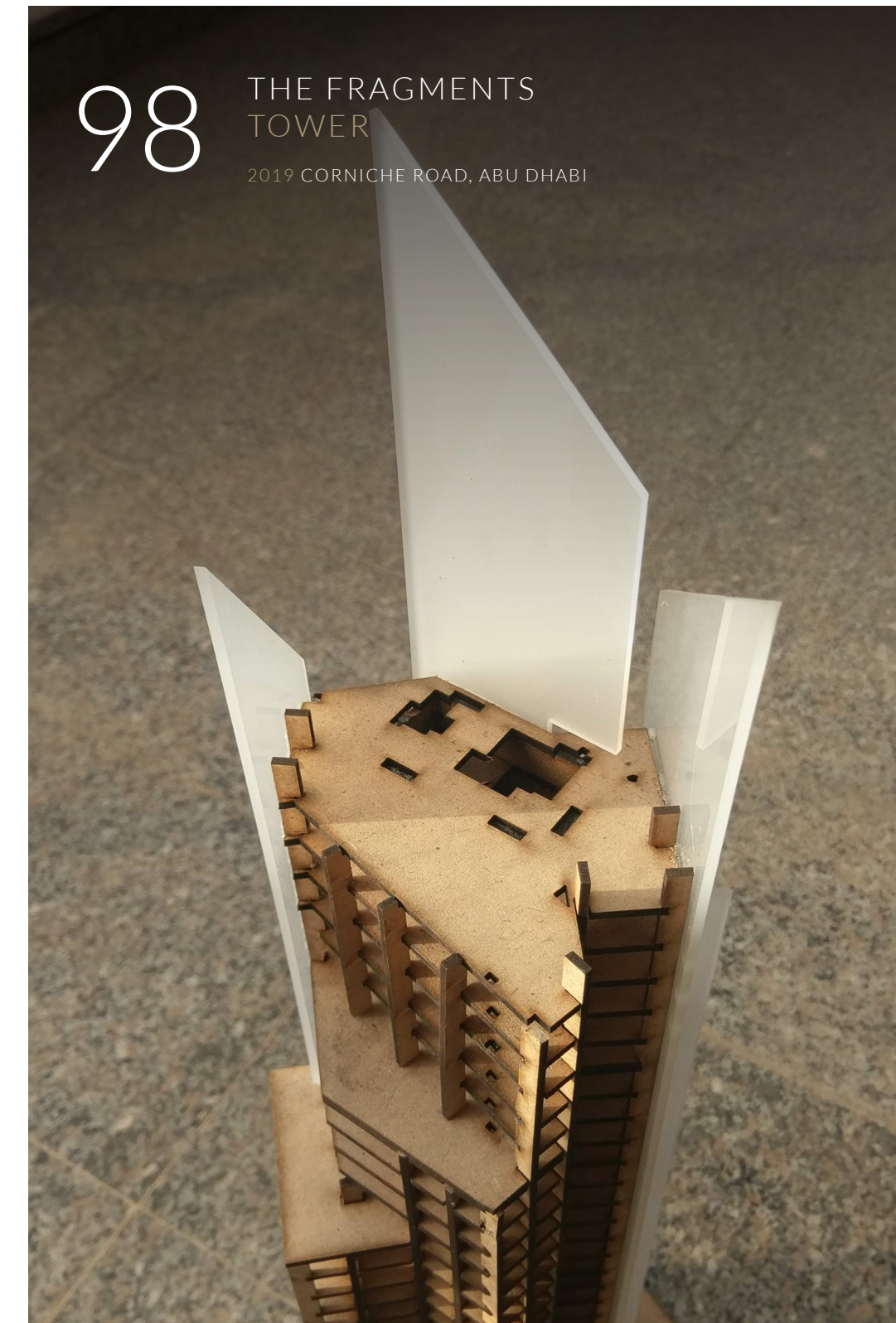
AL JAZEERA  
YOUTH FORUM & HOSTEL  
2019 AL LIWA STREET, AL JAZEERA, ABU DHABI



# FABRICATION

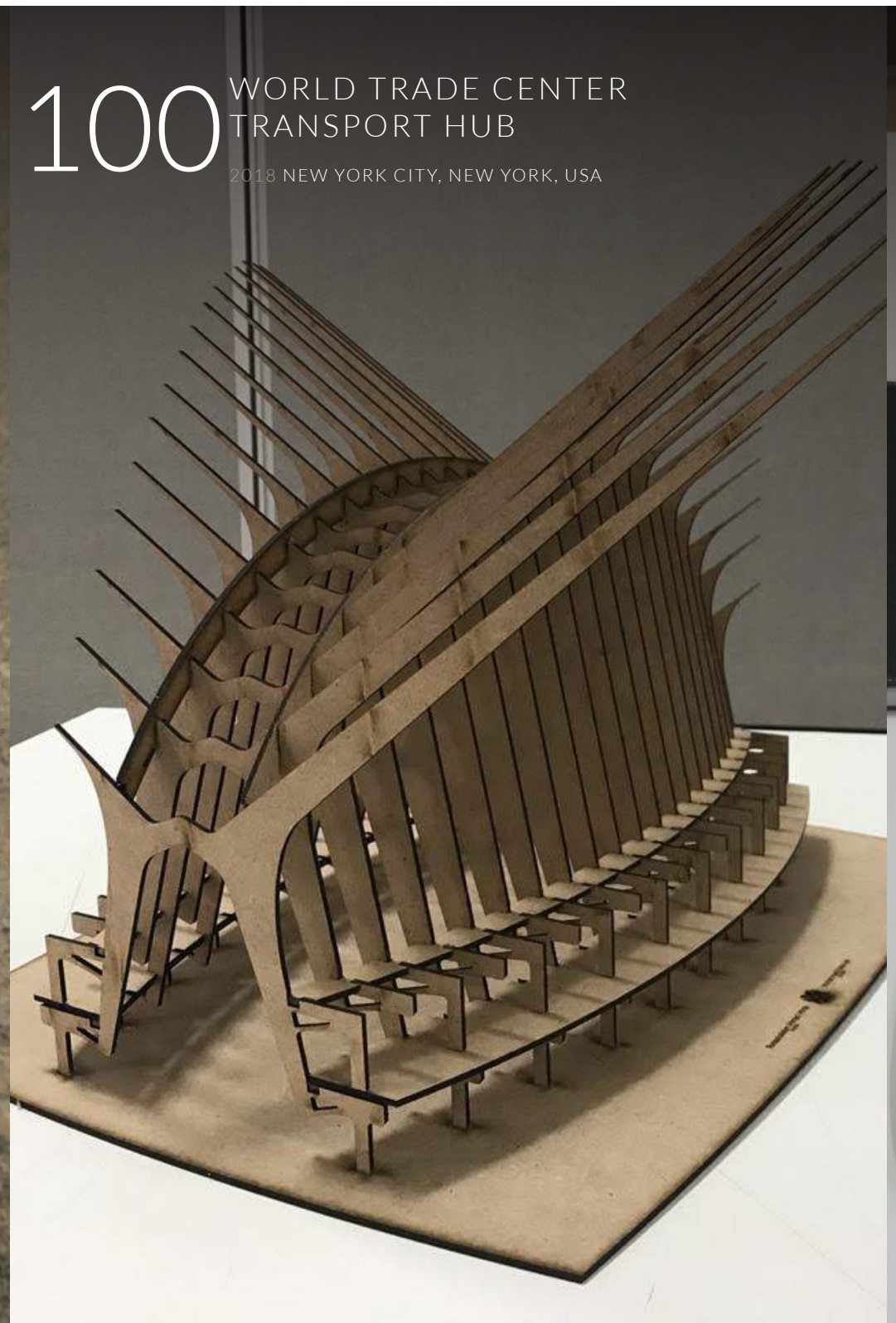
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THE FRAGMENTS  
TOWER  
2019 CORNICHE ROAD, ABU DHABI



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WORLD TRADE CENTER  
TRANSPORT HUB  
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THE FOOTPRINT  
AL AIN ZOO PENGUINARIUM  
2018 AL AIN, ABU DHABI



# RESEARCH

106 DESIGNING A NEXT GENERATION  
AIRPORT - AL AIN INTERNATIONAL  
GRADUATION PROJECT 1: THESIS

108 DAYLIGHT  
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ENV DESIGN 2: ENERGY AND SYSTEMS

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# DESIGN STUDIO



## CONCEPT AND BRIEF

Al Bateen Library was the final Design Studio project. It is meant to be preparation for the graduation or capstone project. As such the project must include everything learned in past studios and courses to end with a sophisticated design that shows that the student is ready for graduation projects.

The site was located in the Al Bateen Area on Abu Dhabi Island. It is right next to the architectural landmark Al Bateen Mall which is known for its concrete shell.

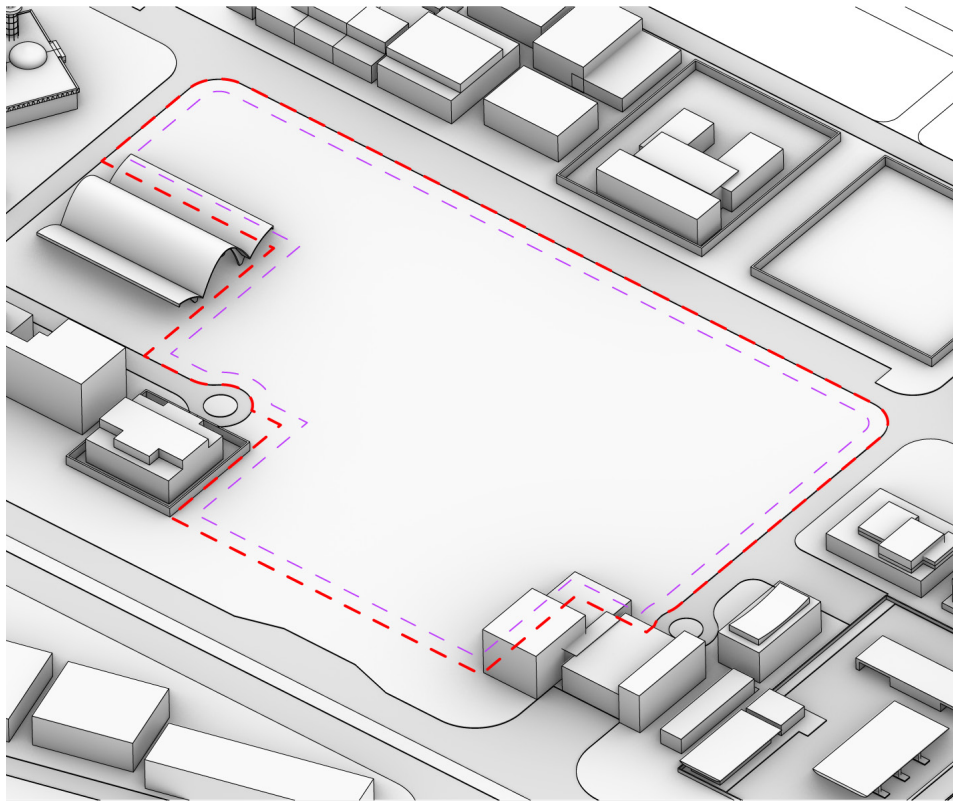
By projects end a beautiful library inspired by Islamic architecture and the site context was produced.

The building has a total built area of 12,500m<sup>2</sup>. The library has a capacity for over 54,000 volumes on the public stacks and a further 110,000 volumes in the archives. In addition, its auditorium can seat more than 530 people.





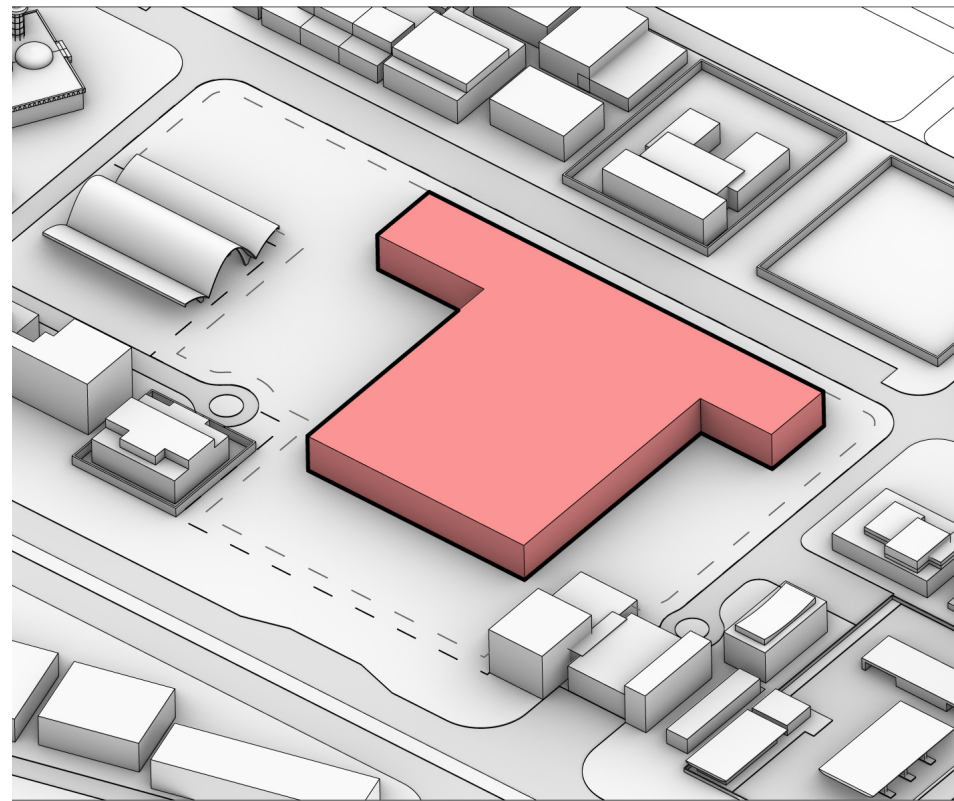
# PROCESS AND FORM



CONCEPT, CONTEXT, SITE

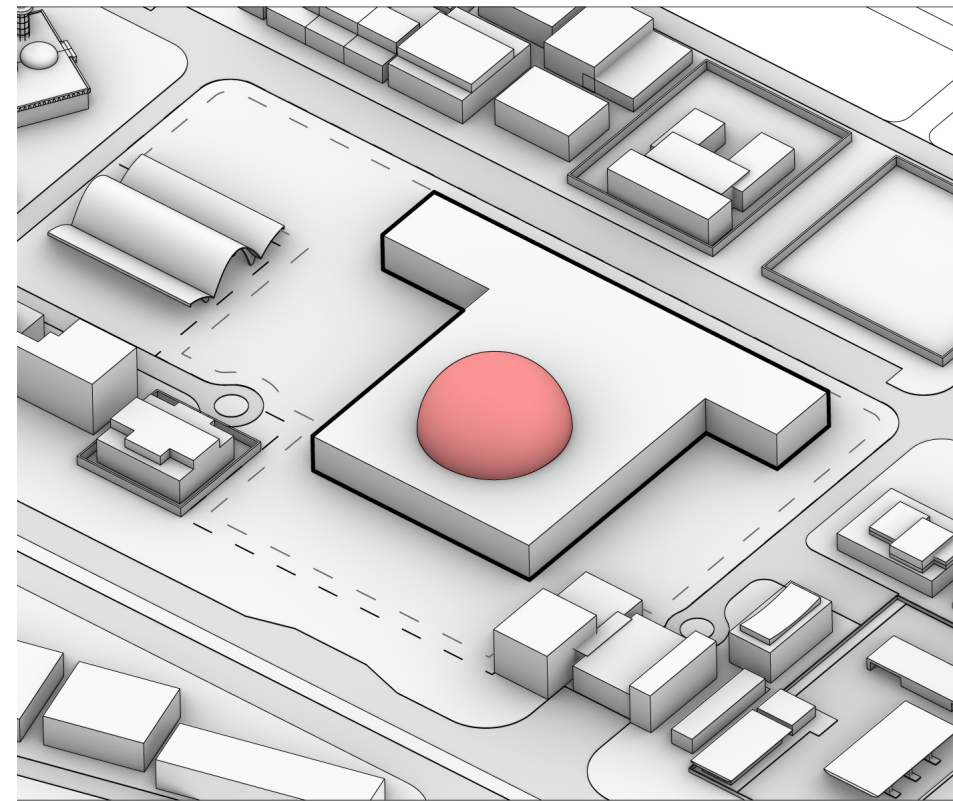
The idea for this project is to create a building that fits in with the local context in terms of the site and the UAE and region. The building will follow traditional and vernacular traits found in buildings in the area.

It will also take inspiration from Islamic architecture which also plays a huge influence in the region. In addition circulation around the site had an influence on the placement and circulation inside the building.



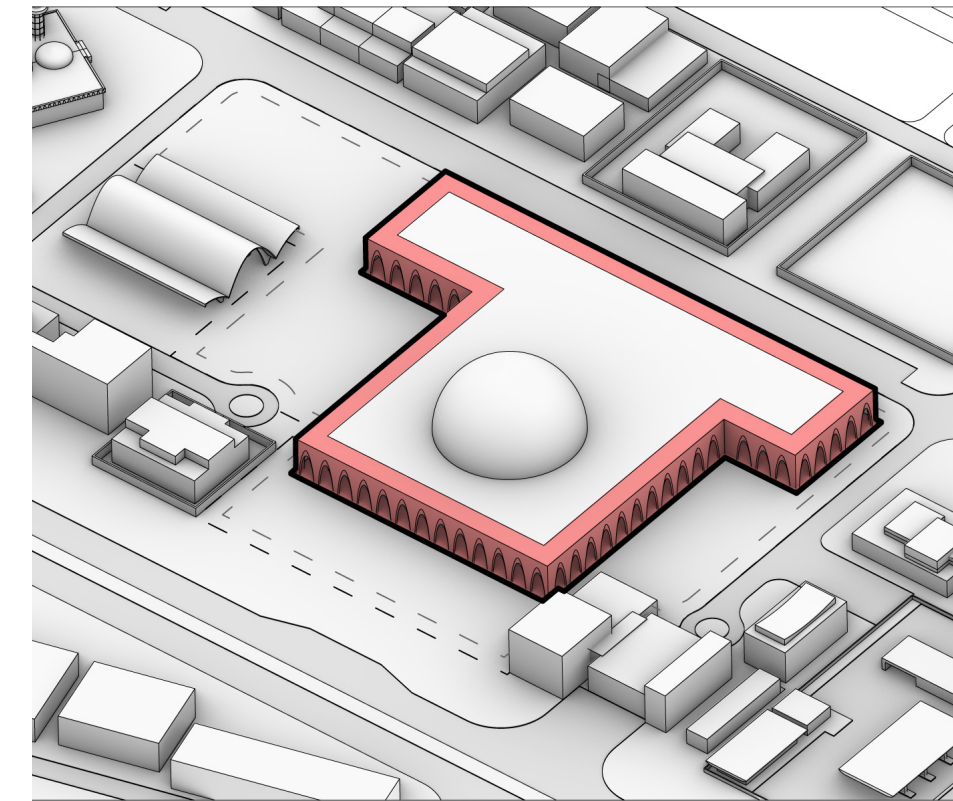
THE PLAN

A schematic plan was created to help understand the relationships between the various functions and their relationship to the site. This plan was the basis for the initial massing created for the library.



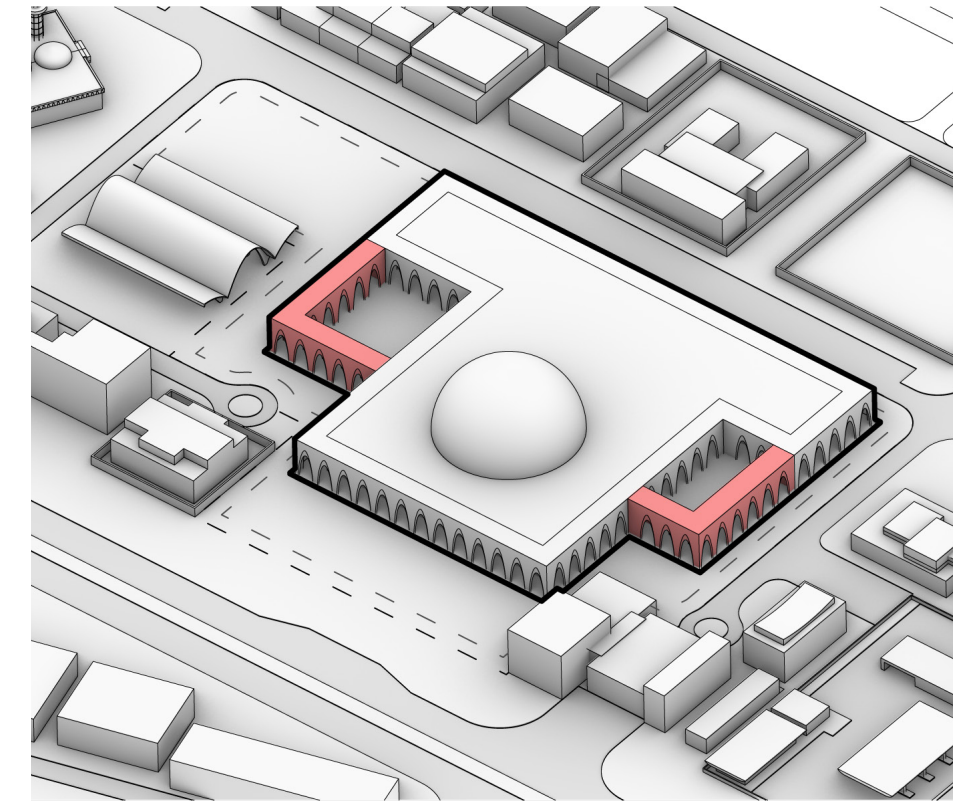
THE DOME

The dome's purpose is to provide daylight to the main stack and reading areas located directly under it. Its secondary purpose is to reduce cooling load by acting as a sunshade throughout the day.



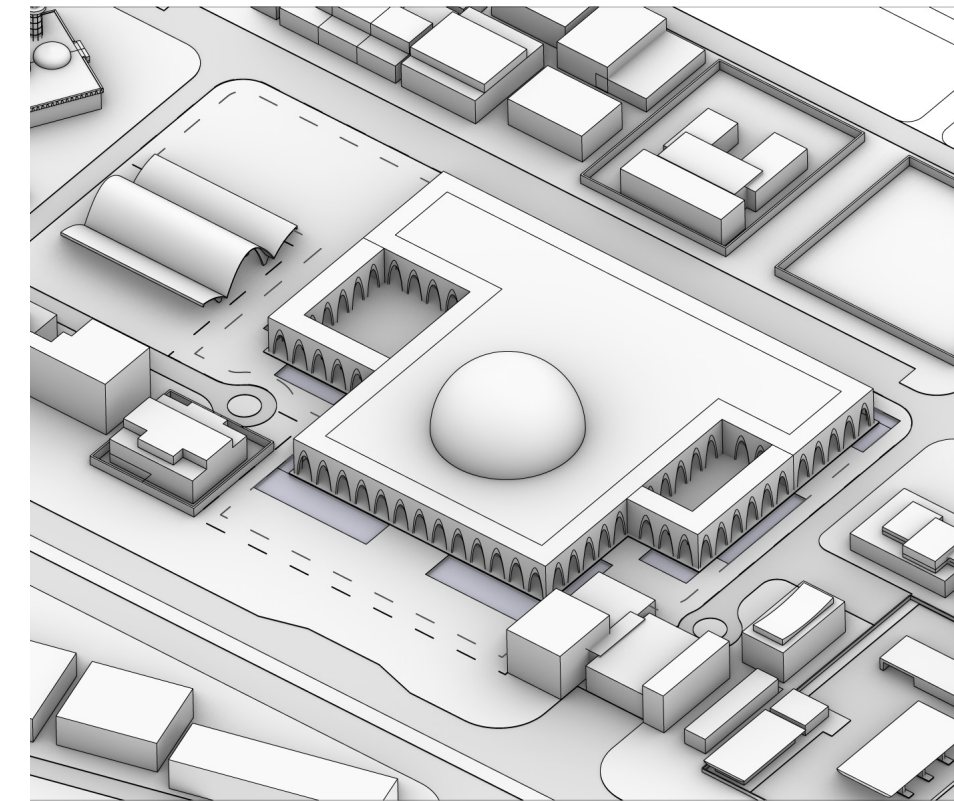
THE ARCADE

Arched arcades were added to the outer edges of the previously extruded mass. These arcades bring traditional Islamic and Arabic design into the proposal better integrating the building into the site. The arcade also acts as a thermal buffer between the building and the Abu Dhabi heat.



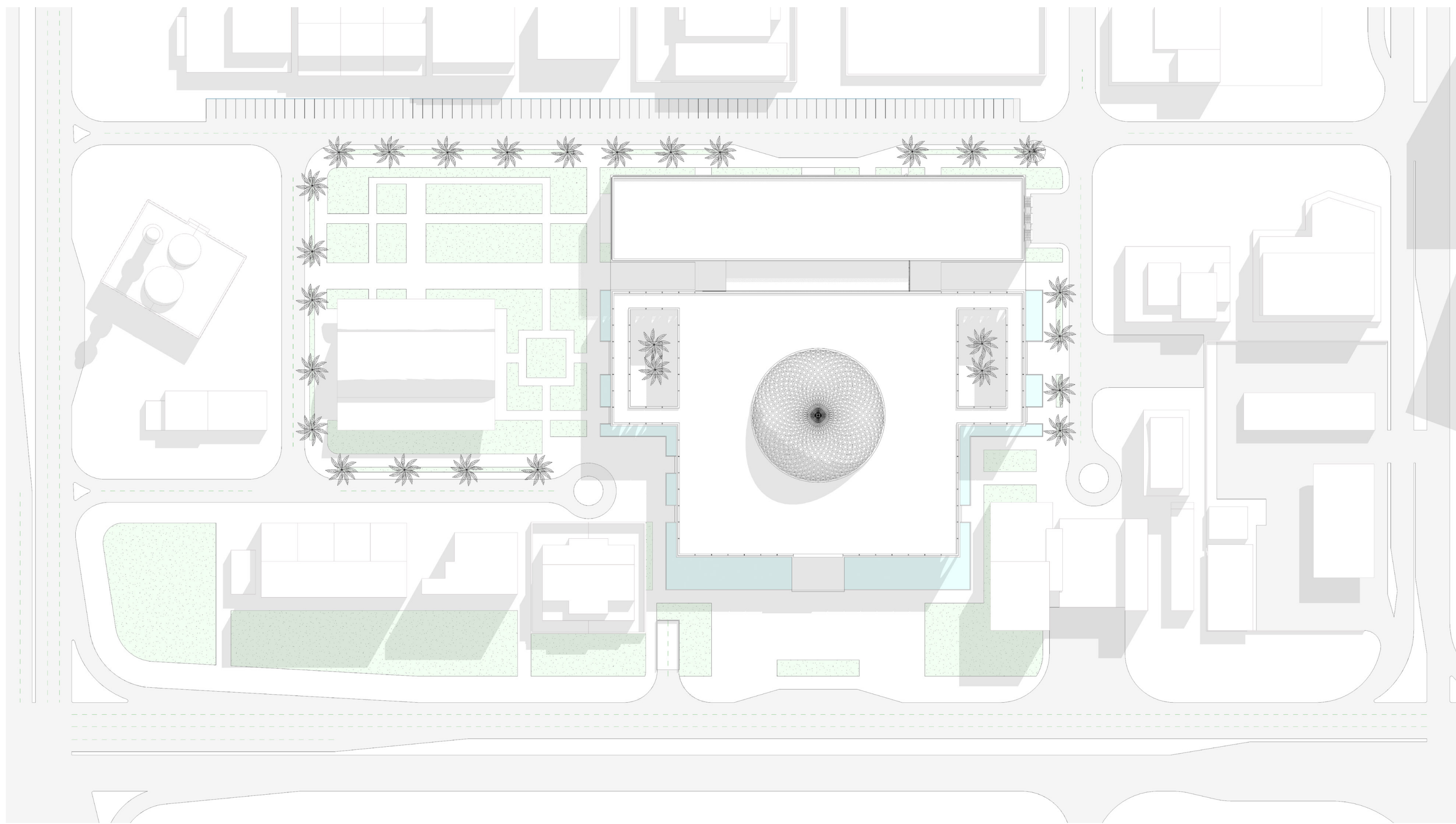
ADDING COURTYARDS

Two courtyards were added to either side of the building to create a social area the accessible by the public. The courts will lure people from Bateen Mall, the Mosque and clinics. The court is also linked to the community area and can act as an outdoor attachment to the area. In it's final form building was made to have symmetrical courtyards.

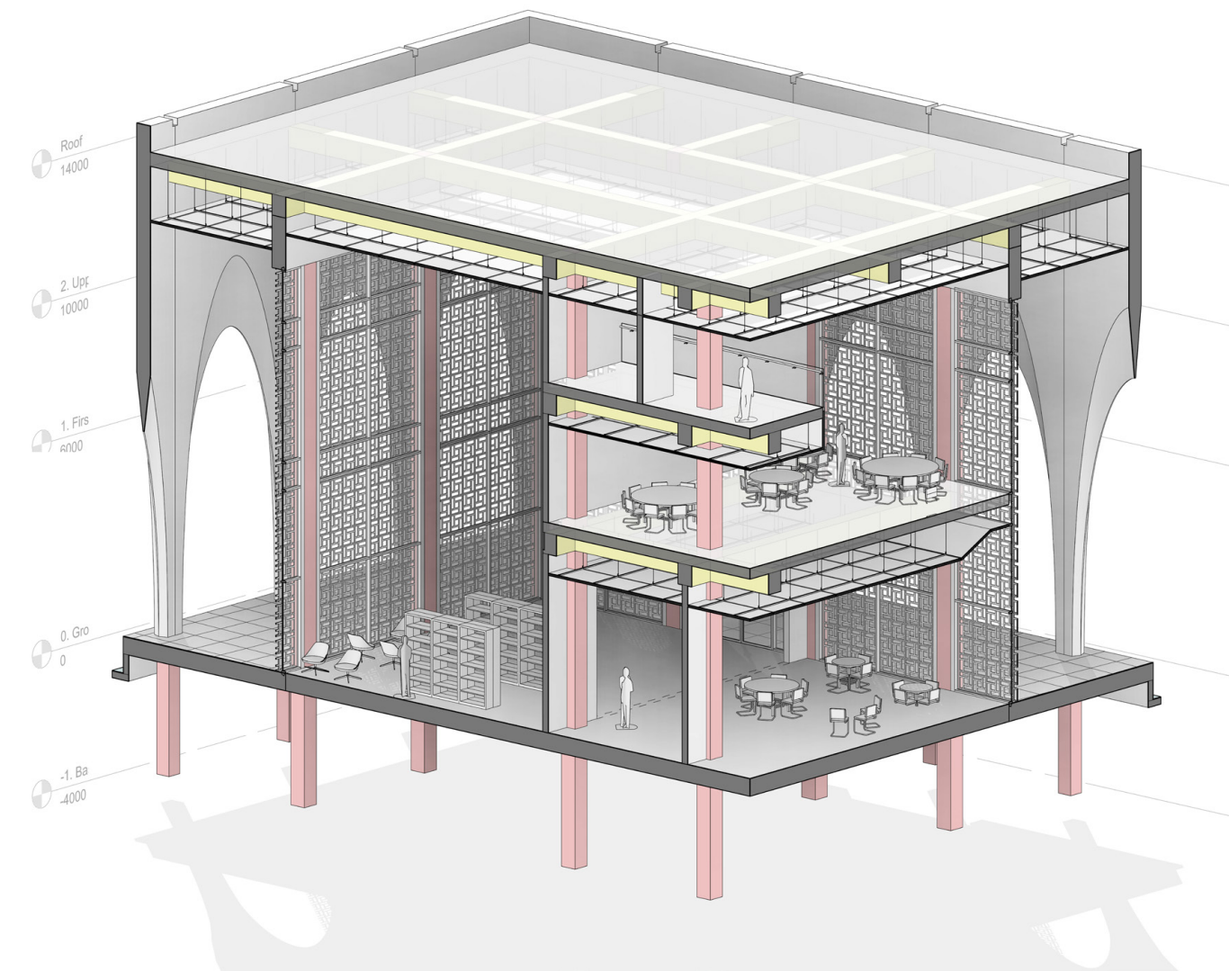


DIVIDING USES & LANDSCAPING

The building was split into two forms connected by an indoor walkway. The arcades were removed from the northern longer form. This form is now shaded by a mashrabiya screen system. The landscaping serves two functions, first, cool the area and second, better integrate the building into the site and context.

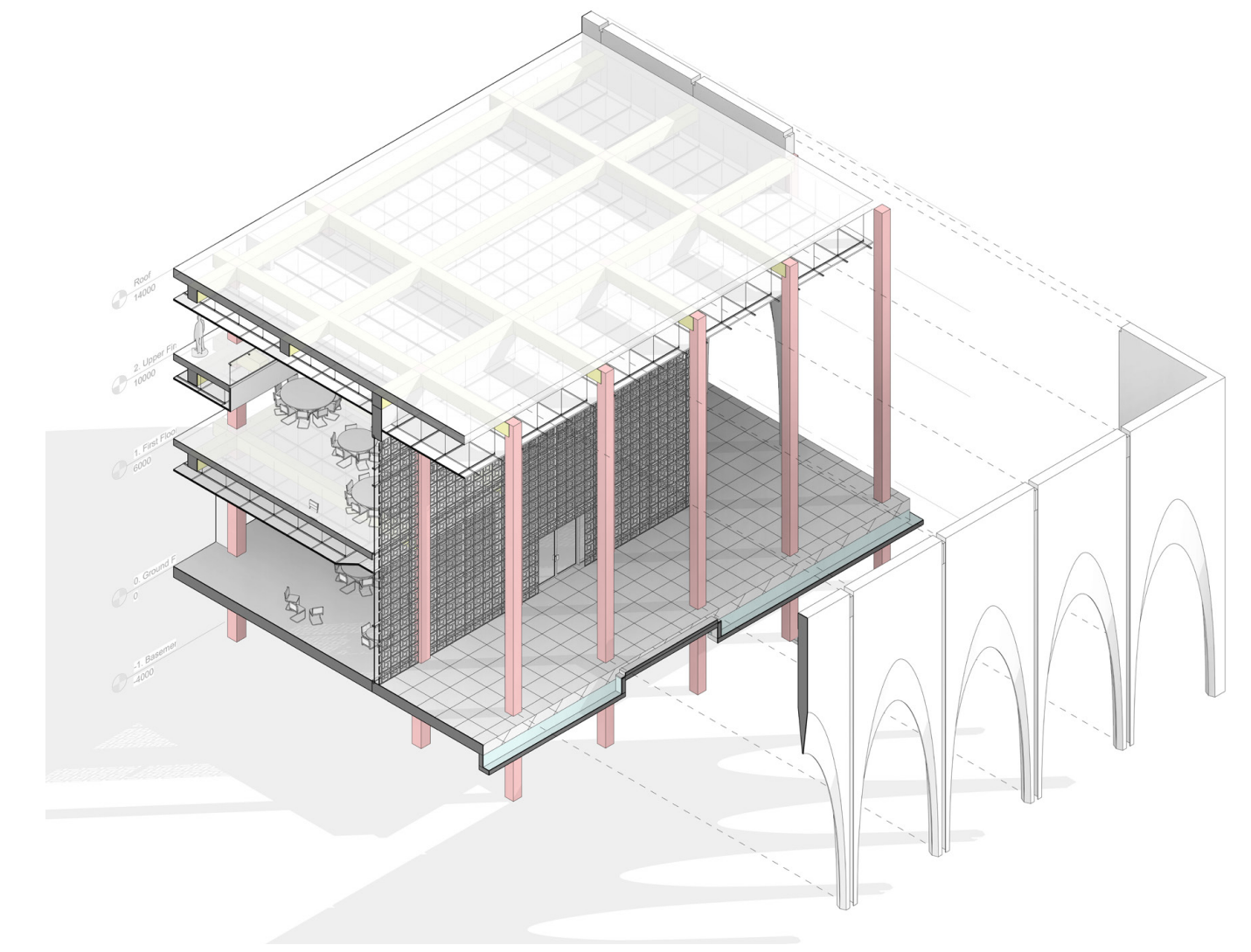


SITE PLAN



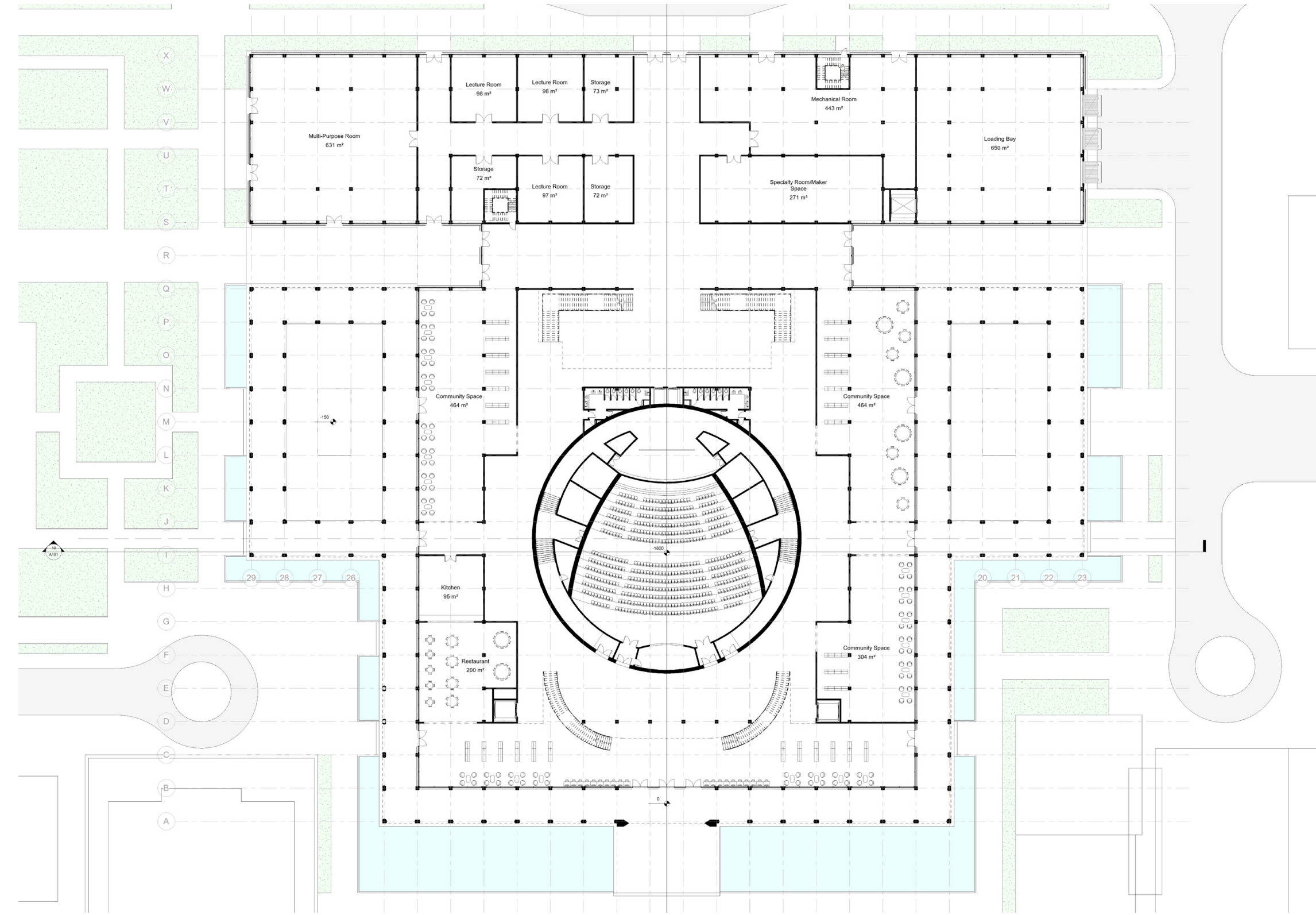
DETAIL SECTION

A 3D axonometric cutaway section showing the composition of the building.

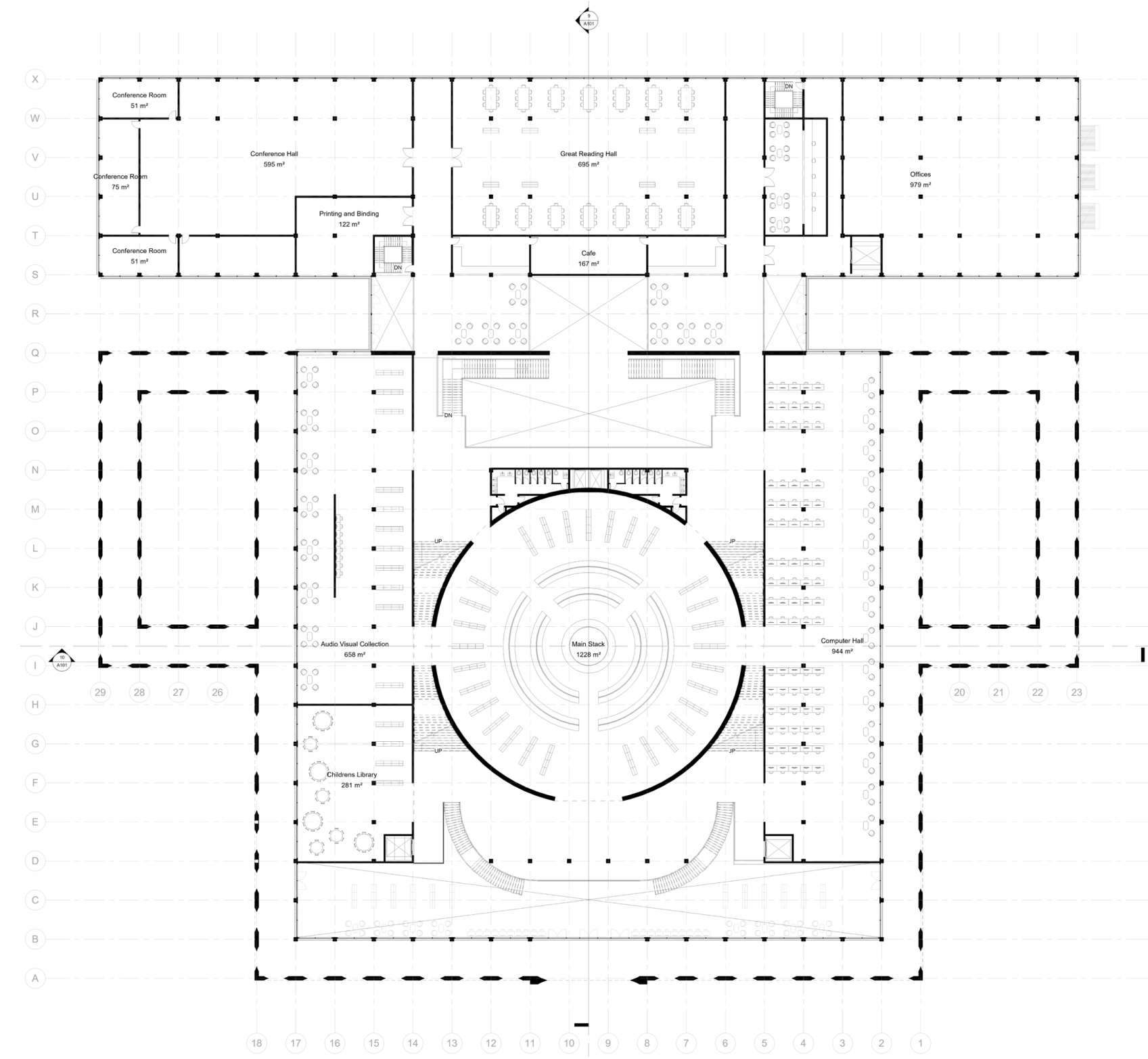


ARCADES DETAIL

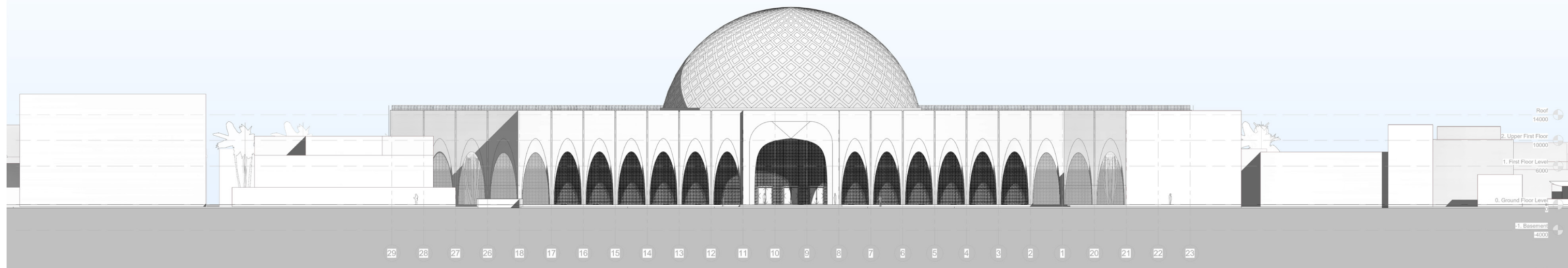
A detail of the arched arcade showing the structure behind it and an idea of how it might be constructed.



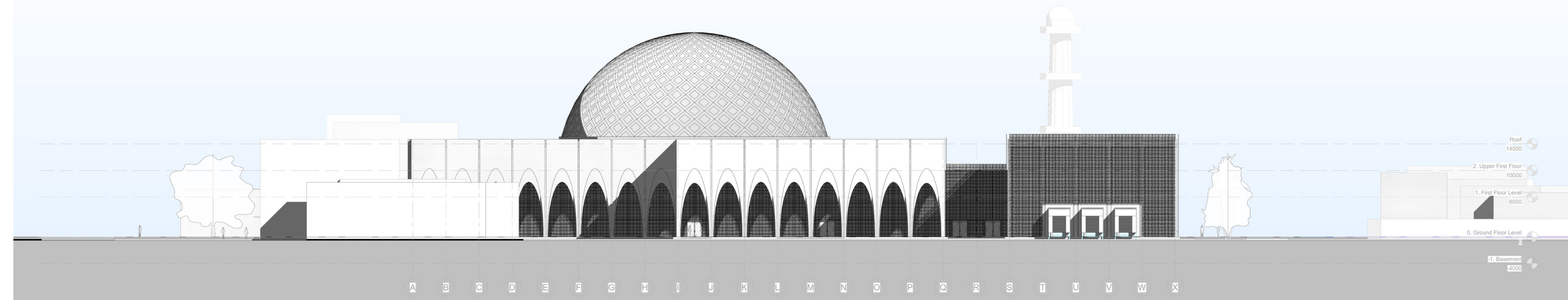
ENTRANCE AND ENTERTAINMENT LEVEL  
GROUND FLOOR



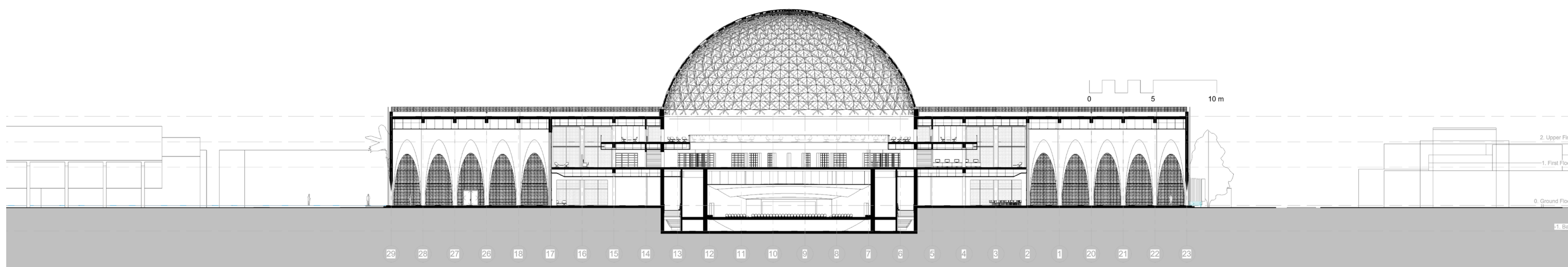
MAIN STACKS AND READING LEVEL  
FIRST FLOOR



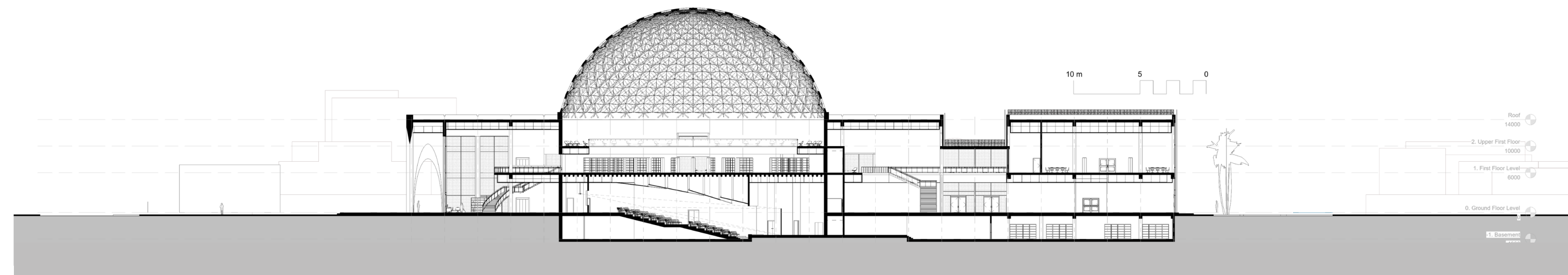
SOUTHERN ELEVATION  
MAIN STREET ELEVATION



EAST ELEVATION  
SECONDARY ENTRANCES



SECTION 1  
THROUGH COURTYARDS



SECTION 2  
THROUGH AUDITORIUM



2019 CORNICHE ROAD, ABU DHABI

# THE FRAGMENTS TOWER



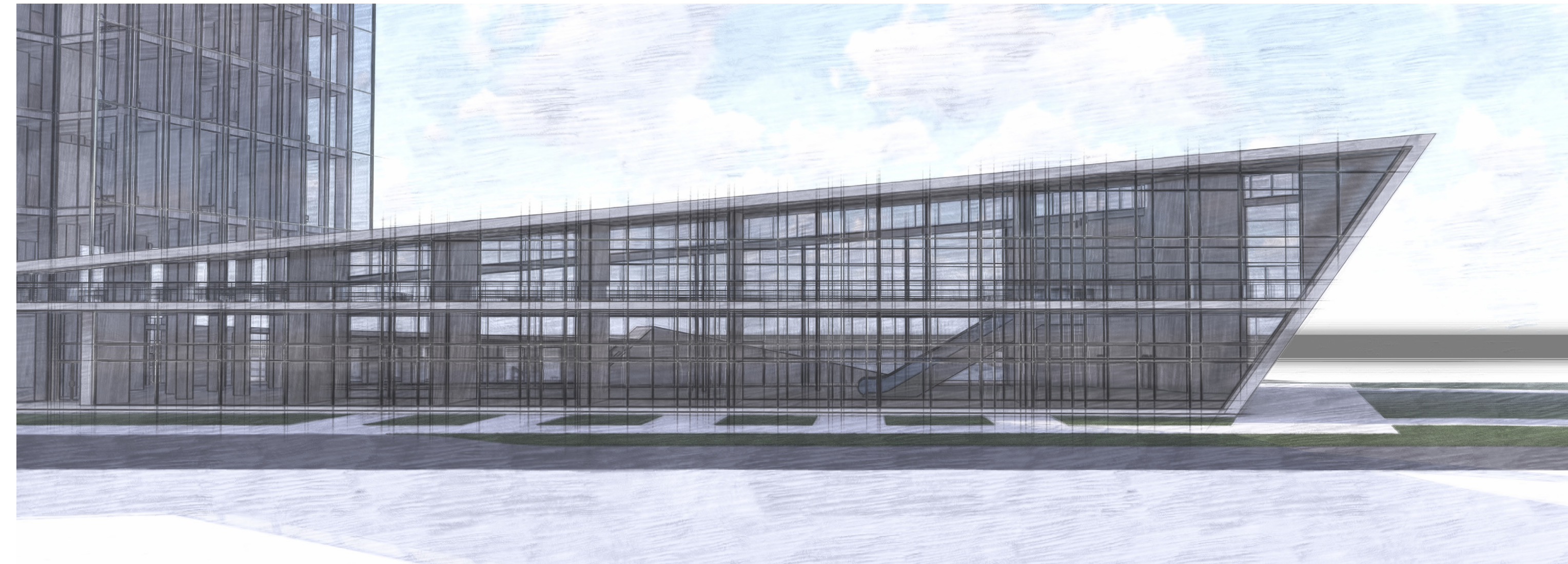
## CONCEPT AND BRIEF

The Fragments Tower was a design proposal for a mixed-use high-rise tower located at the Corniche in Abu Dhabi. Over the course of 13 weeks, a 35 story, 176 meter tall tower was designed and developed.

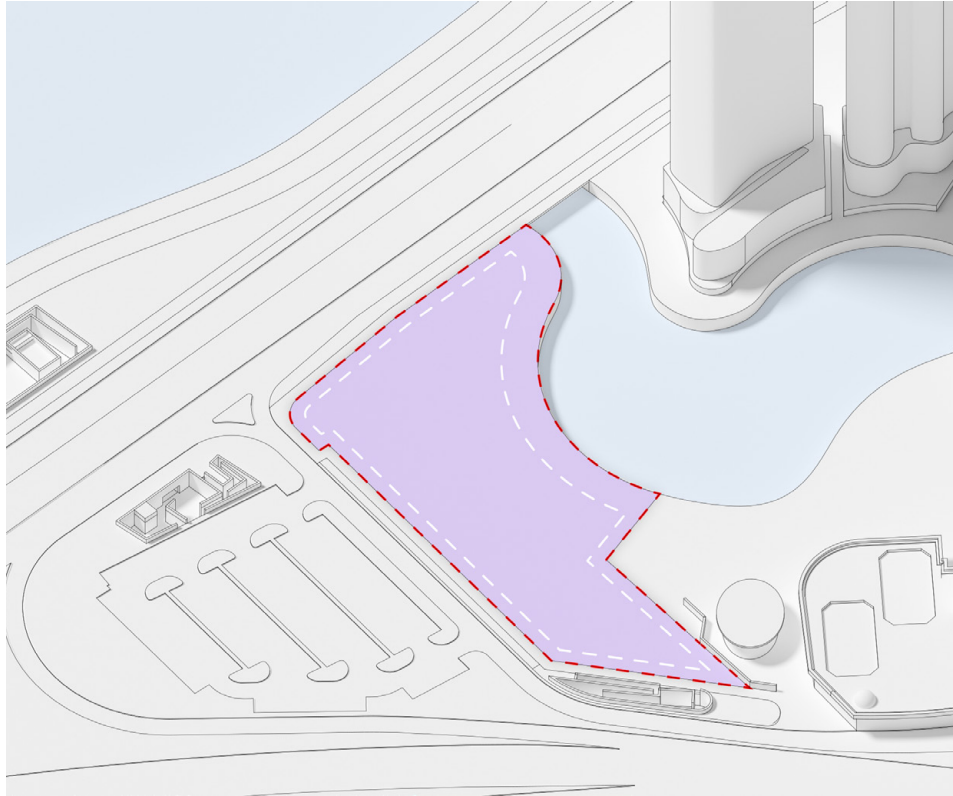
The course for which this proposal was developed placed a heavy emphasis on vertical planning. Proposals were expected to solve planning and aesthetic issues stemming from placing different functions vertically.

The program required a tower with retail space in a podium, office space and 1, 2, 3, and 4 bedroom residential apartments, complete with all the facilities one would expect from a modern high-rise. Mechanical rooms, floors and basement parking were also required to be integrated.

The tower was conceptualized as fragments of glass which emerge from the Abu Dhabi sand below. The idea came by arranging fragments of a broken mirror in some sand.

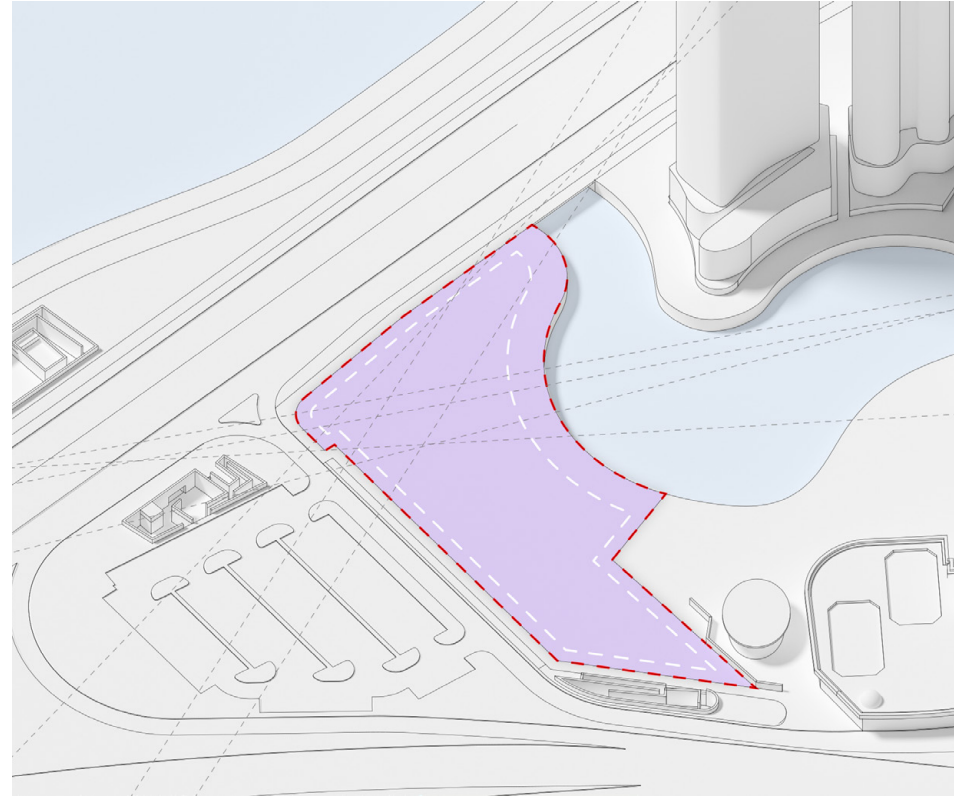


# PROCESS AND FORM



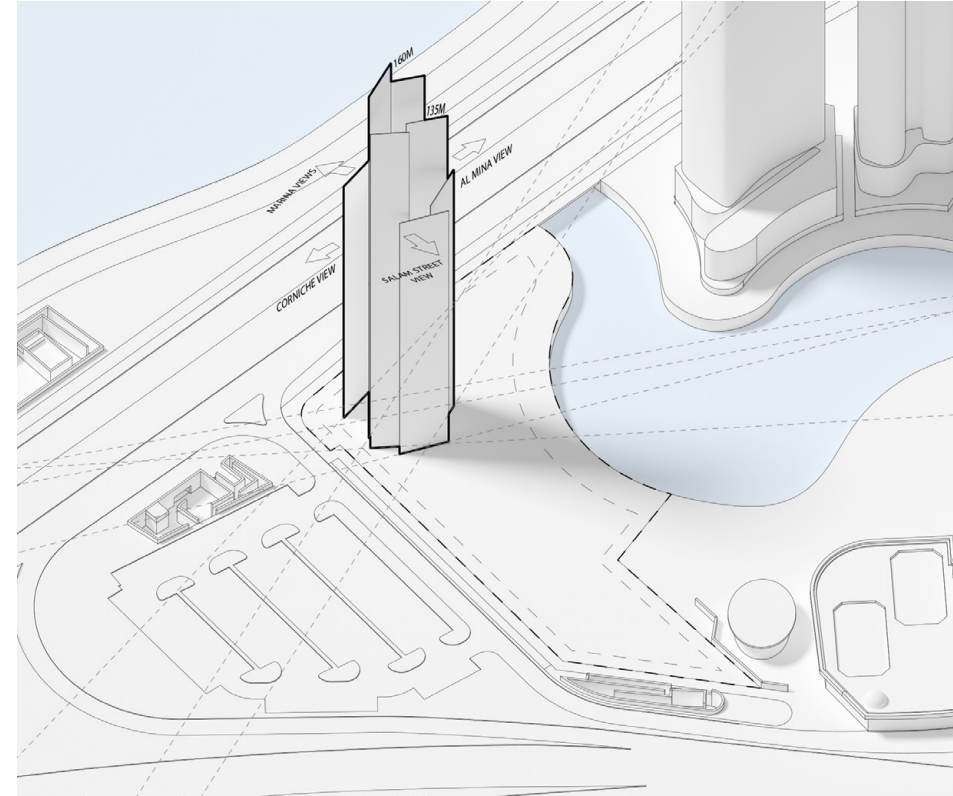
SITE AND AREA

The 11,582m<sup>2</sup> site was located at the point Corniche Road forks off to Salam Street which is a very important fork in Abu Dhabi as it connects to one of the main roads of the city to very busy highway. It looks straight down Corniche and Salam Street due to its unique location giving it amazing views of the city, the Corniche and the sea. This unique position also means our building will be visible from all ends of Abu Dhabi Island.



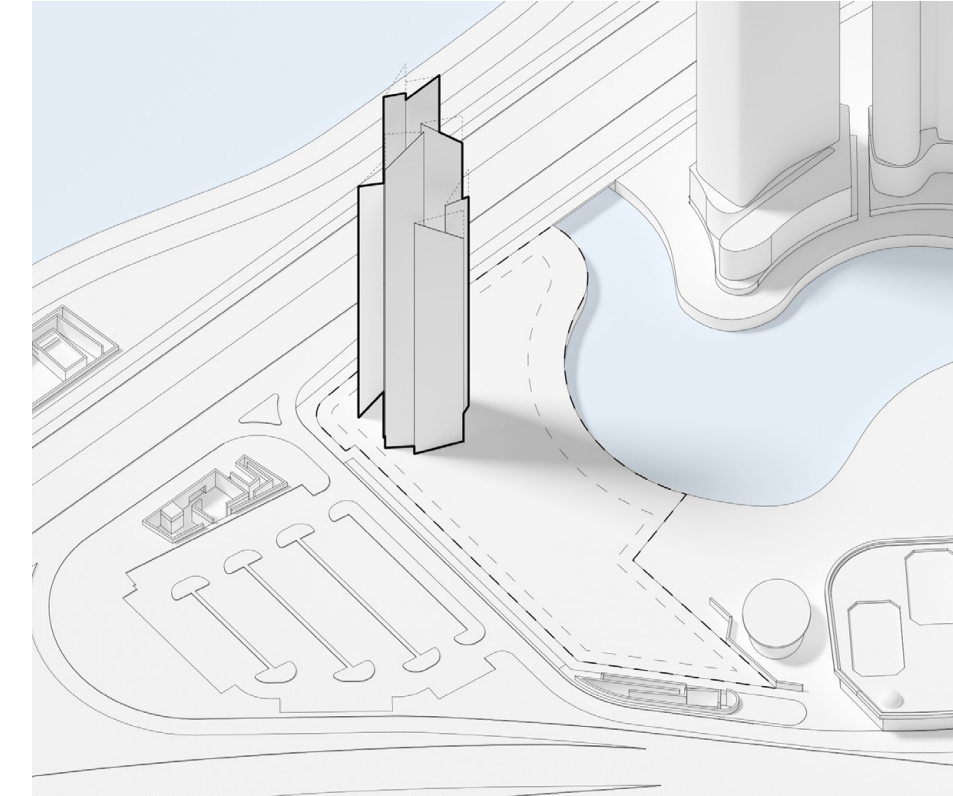
CONTEXT

In order to achieve the desired layered look to the building, lines were taken from around the site and city. Importance was given to views, landmarks, streets and buildings in the local neighborhood.



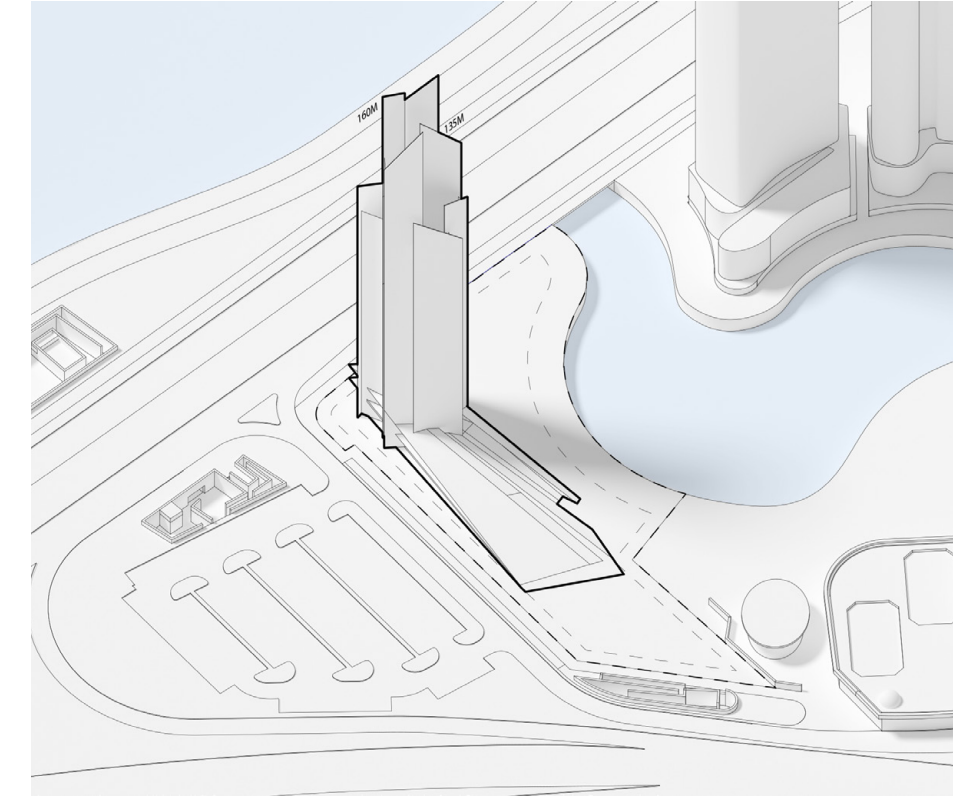
EXTRUSION

The context lines were then extruded up to varying heights to create varied and interesting "fragments". The rotations in the fragments create interesting side elevations as opposed to only interesting front and rear elevations. The fragments place emphasis on the verticality of the tower and make it seem slimmer than it is.



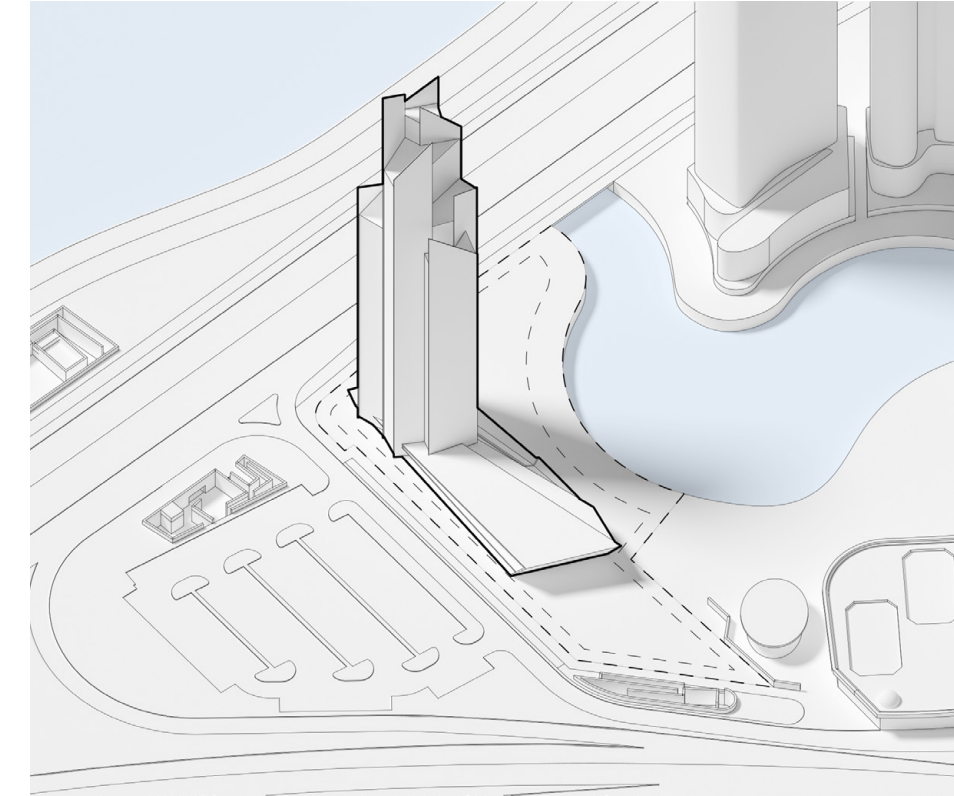
A BIT OF FLARE

Each fragment was given an angled top. This creates the effect of an unfinished tower and adds to the sense of a dynamic tower. Then some of the fragments were angled to a maximum of 5 degrees, again adding to the dynamism of the tower.



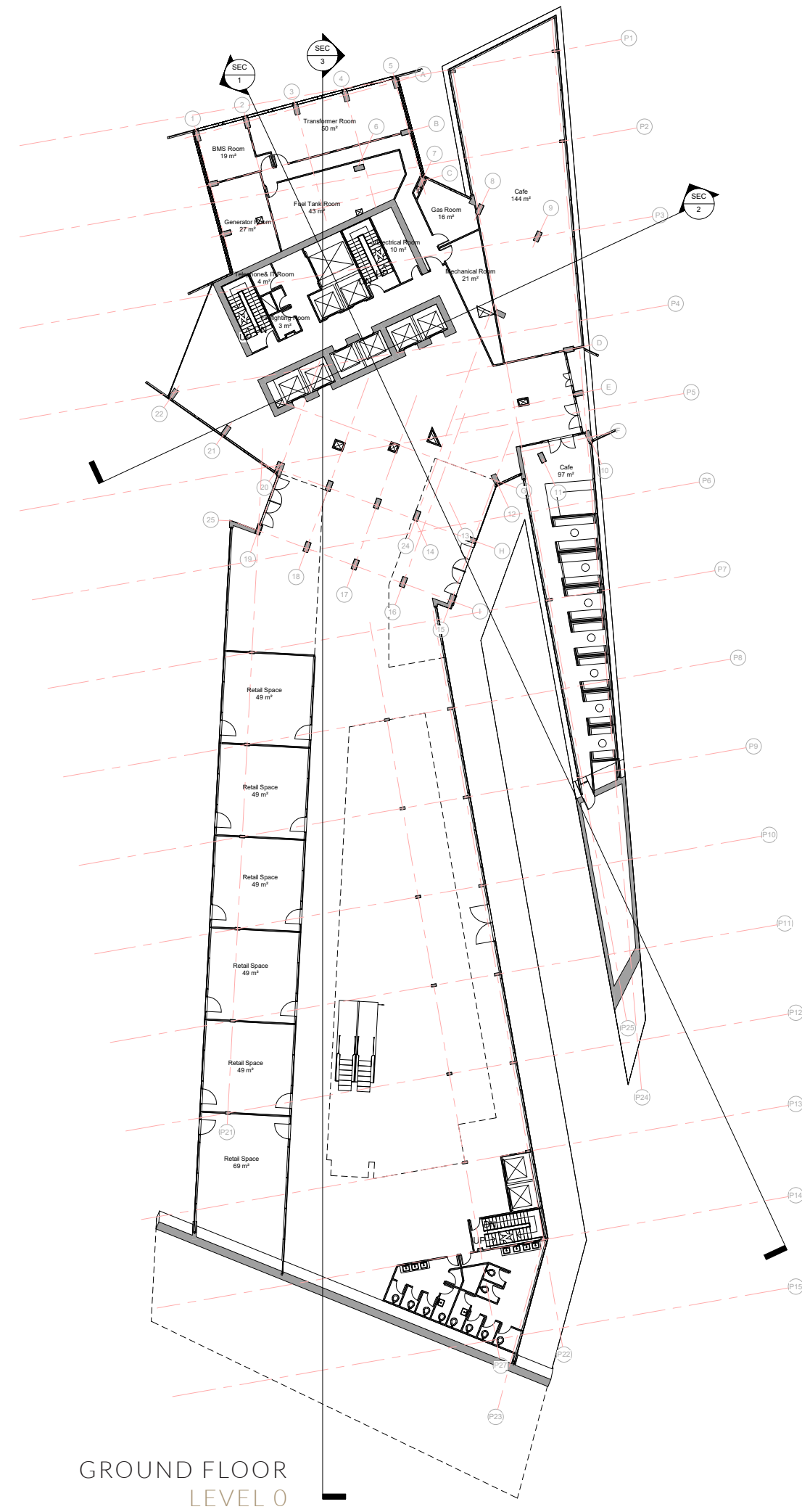
STEPPED PODIUM

The podium follows the same dynamic and angular design language as the tower. In addition, the podium is intersected by the tower giving the tower a strong connection to the ground. The podium responds to the slope of the site instead of ignoring it. It will consist of 3 levels, two above street level and one below street level but above sea level.

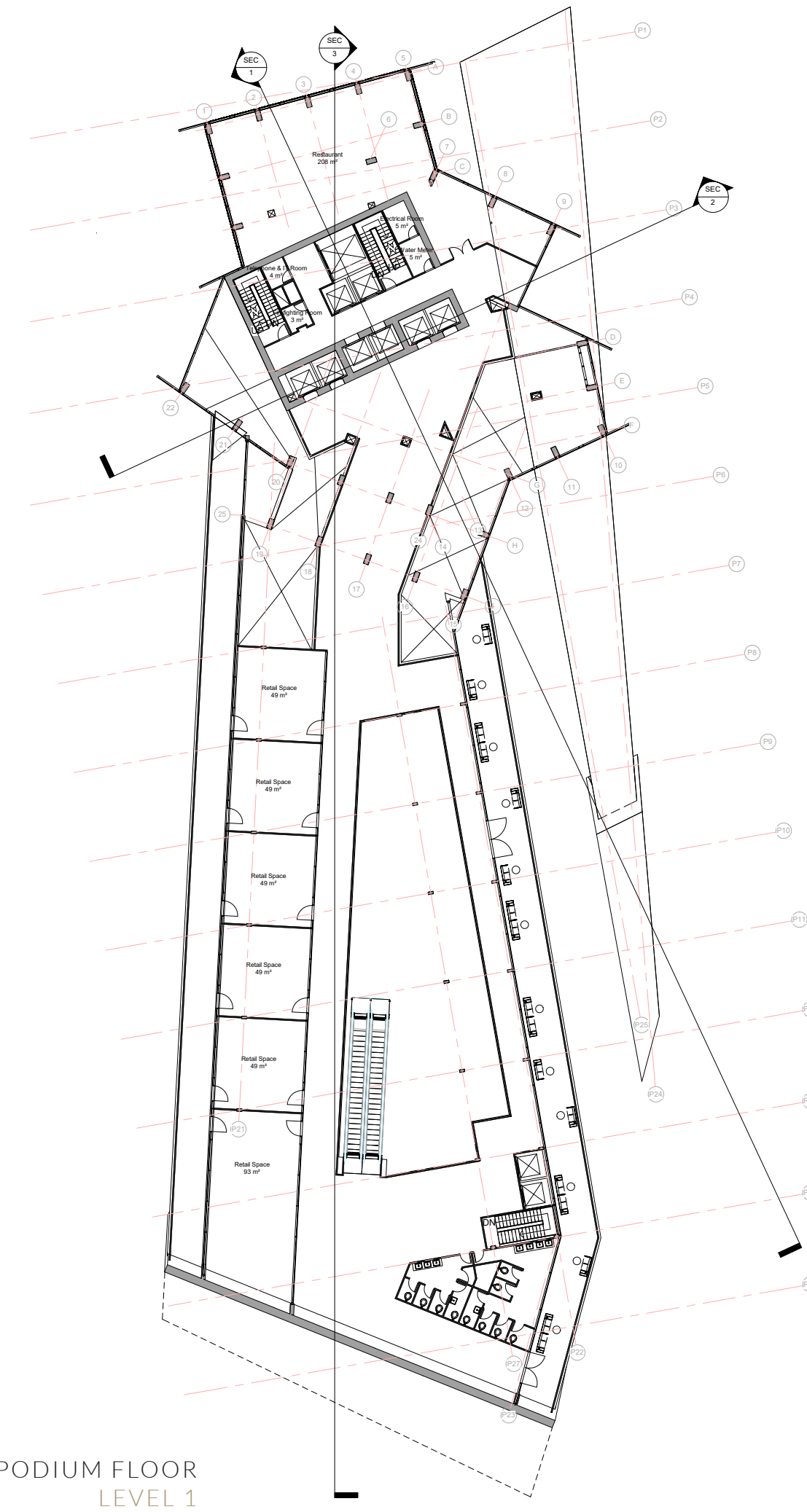


FINALIZED FORM

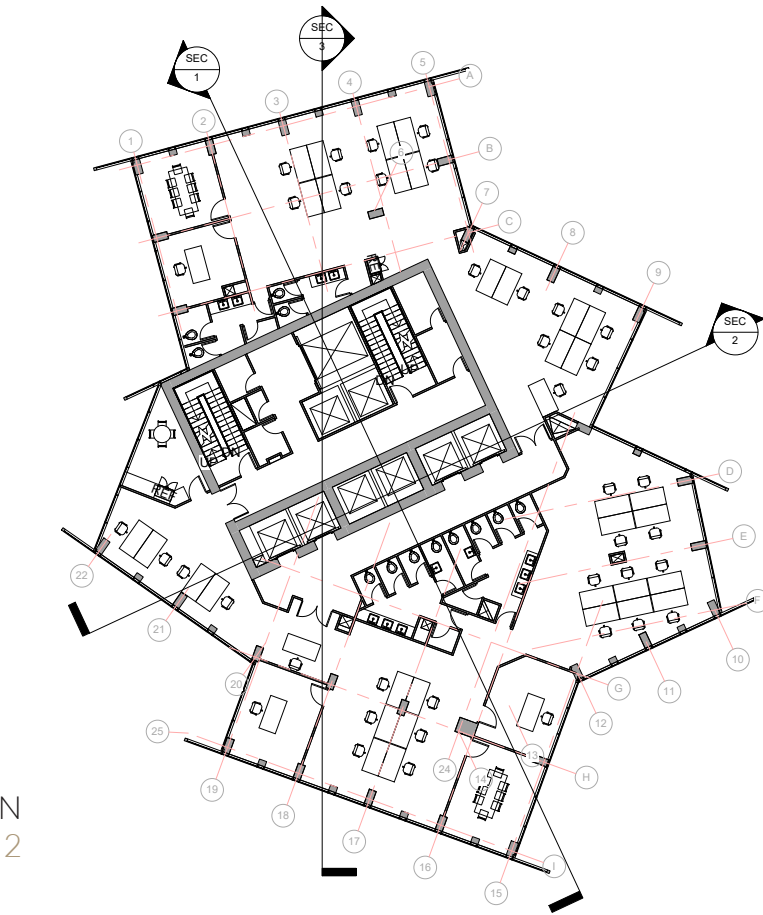
The podium was modified to rise instead of sink into the ground. This was done to create more usable space inside and, more importantly, create a more visible and striking piece of architecture in the area. In addition, the tower was finalized with some modifications to the heights of the fragments and closing the areas in between to create the indoor spaces required.



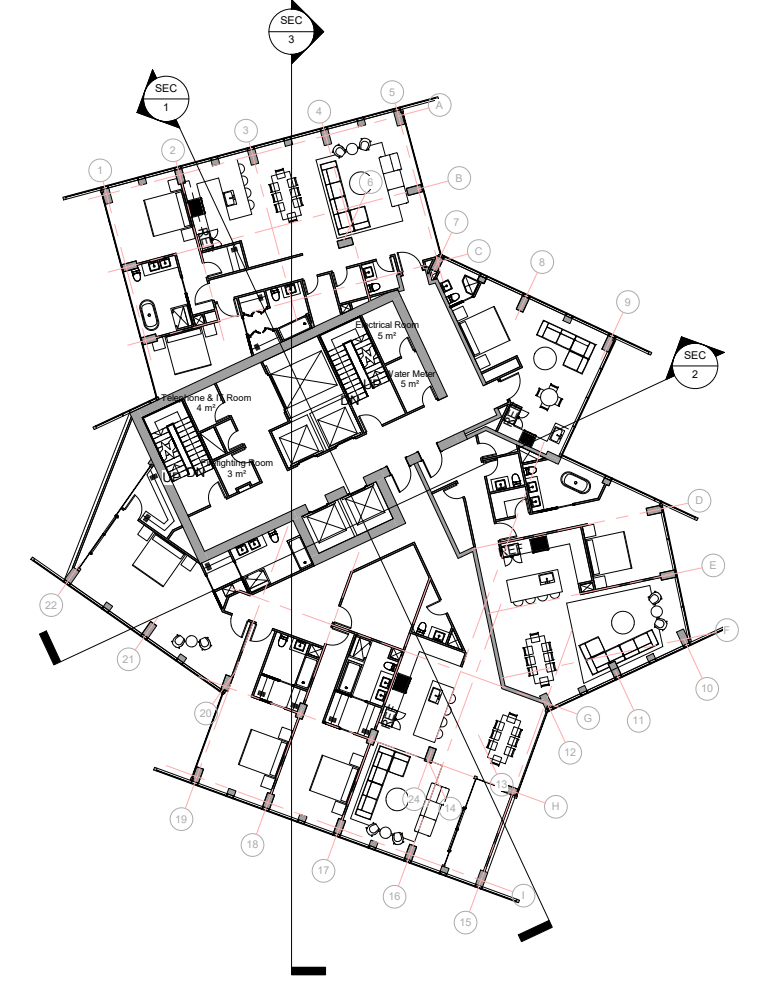
GROUND FLOOR  
LEVEL 0



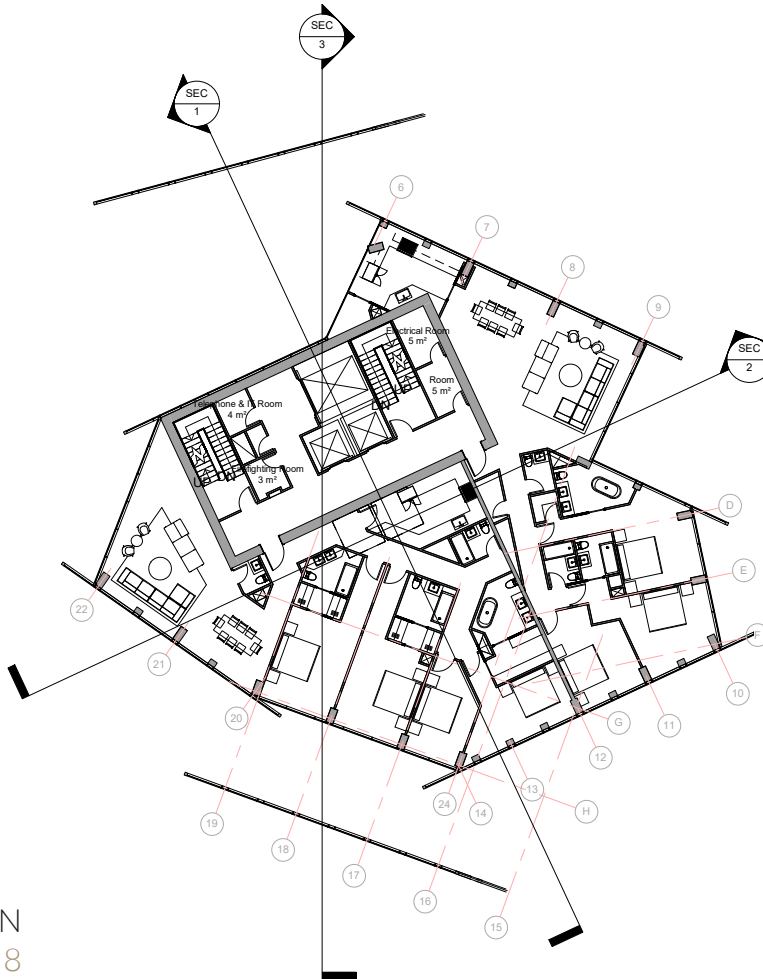
PODIUM FLOOR  
LEVEL 1



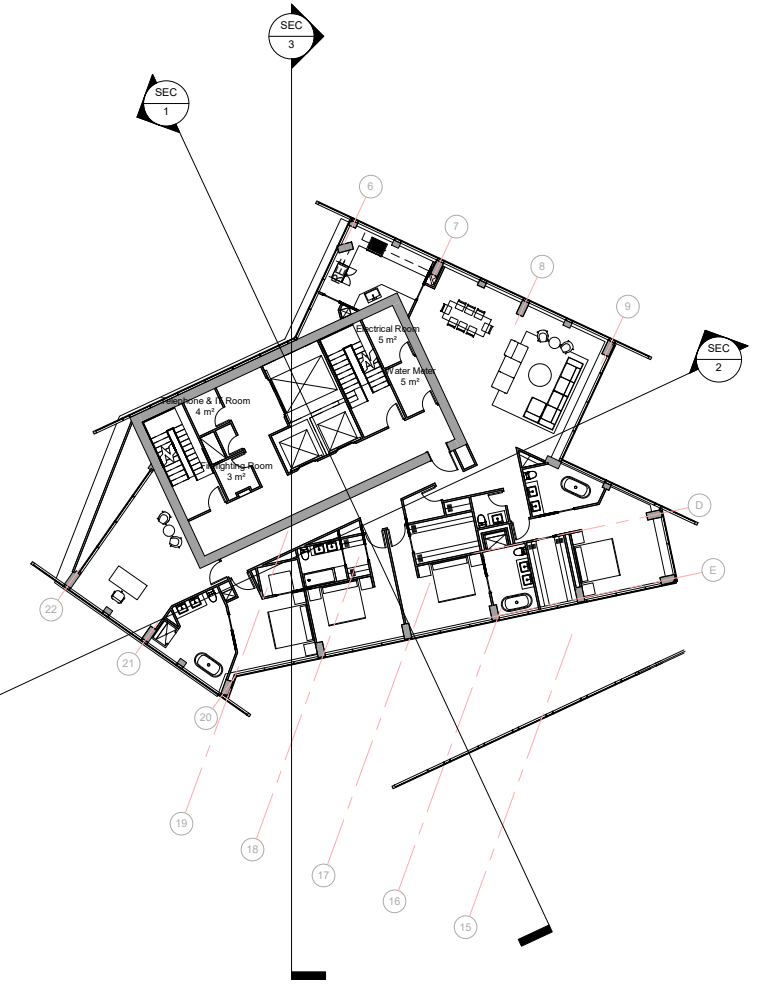
OFFICE PLAN  
LEVELS 2-12



RESIDENTIAL PLAN  
LEVELS 13-23

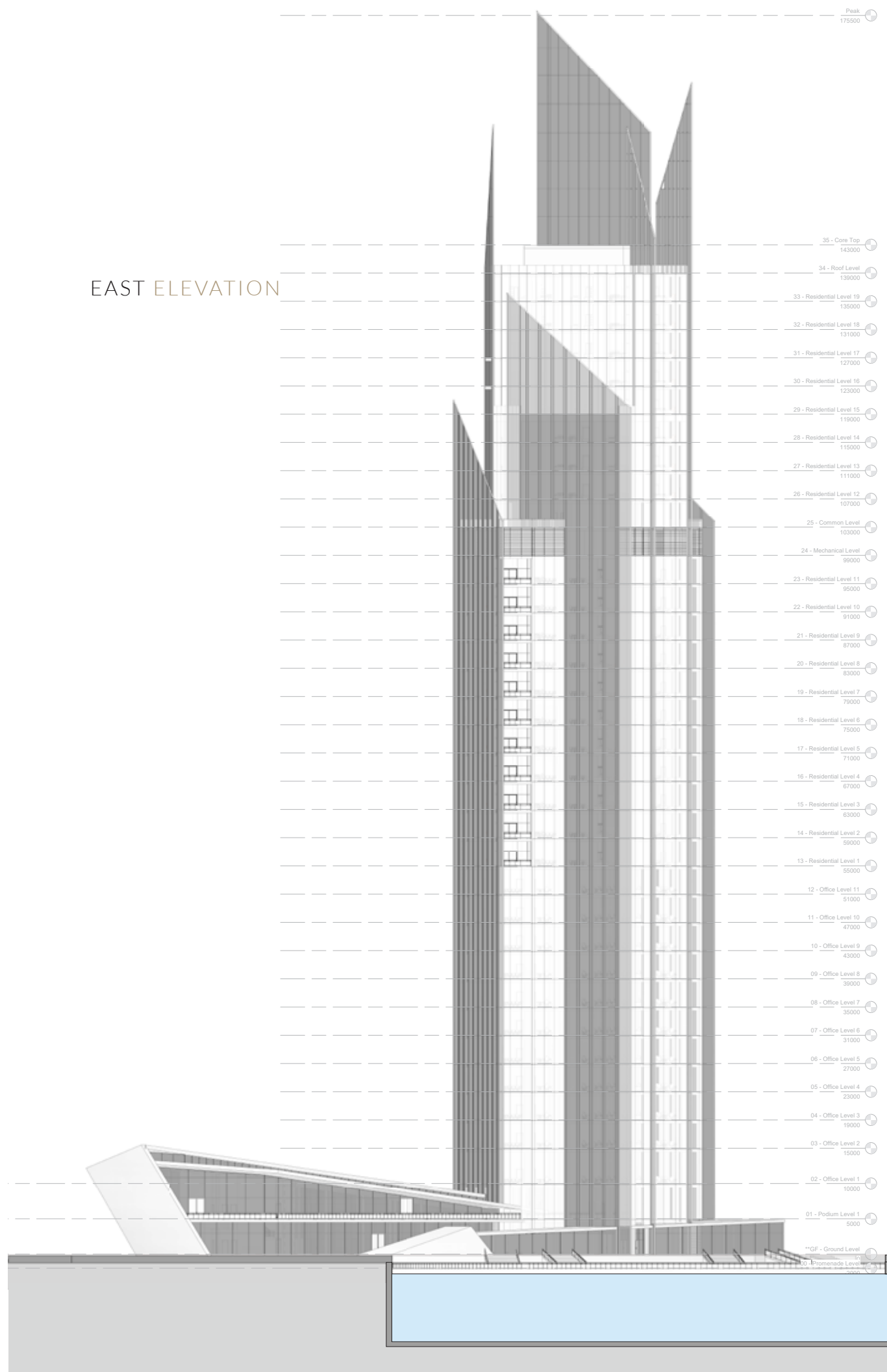


RESIDENTIAL PLAN  
LEVELS 26-28

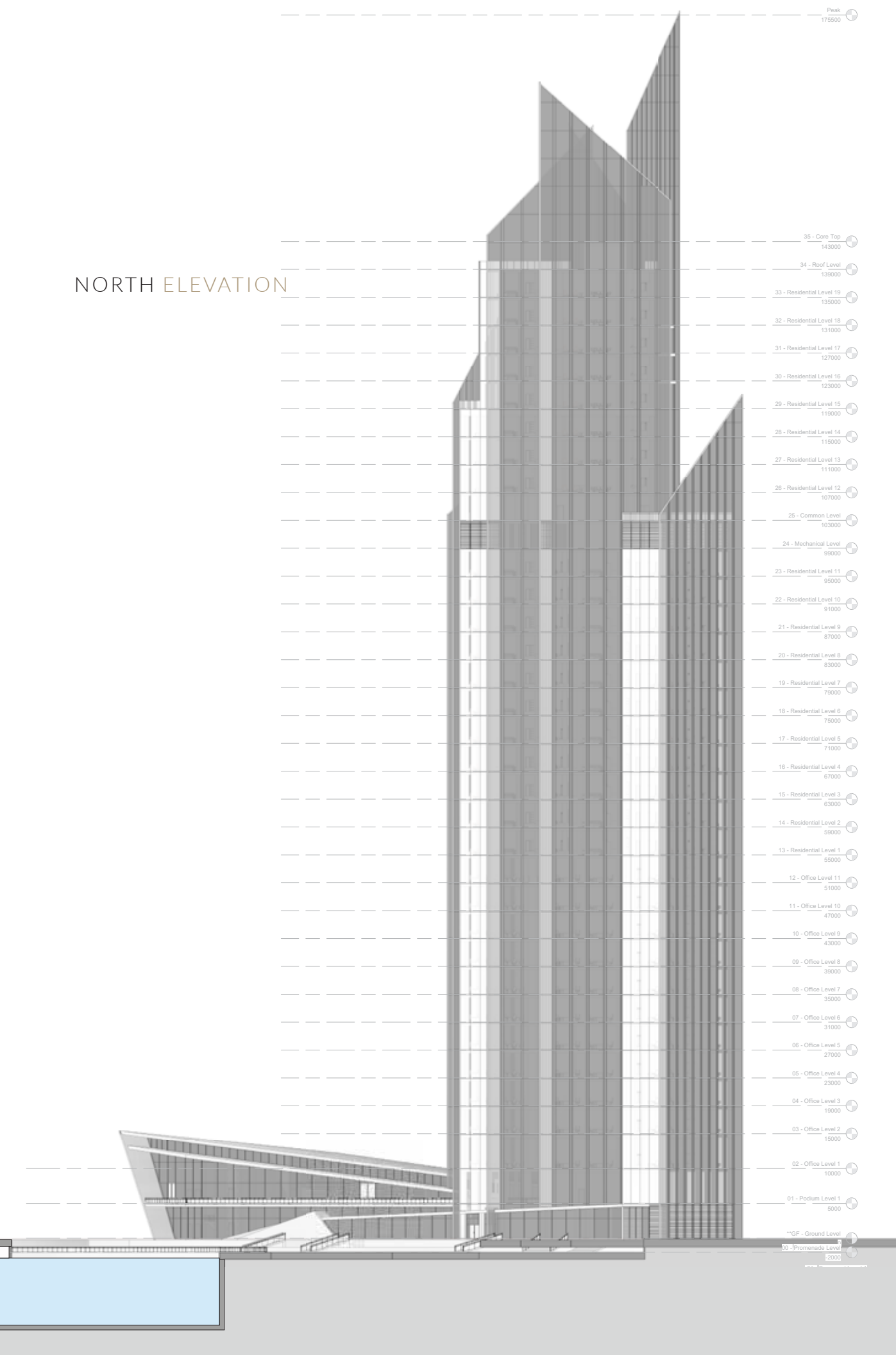


RESIDENTIAL PLAN  
LEVELS 29-33

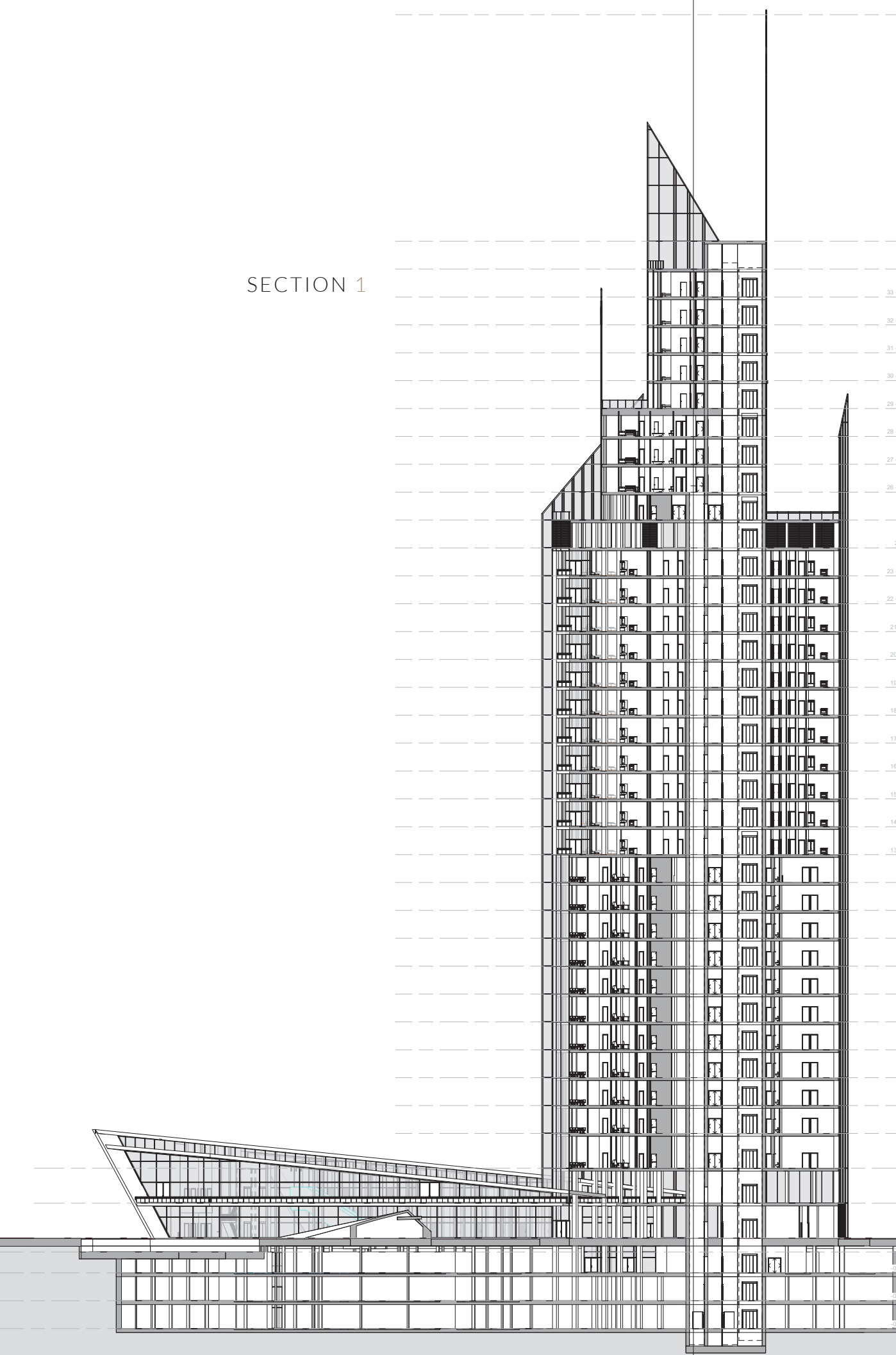
EAST ELEVATION



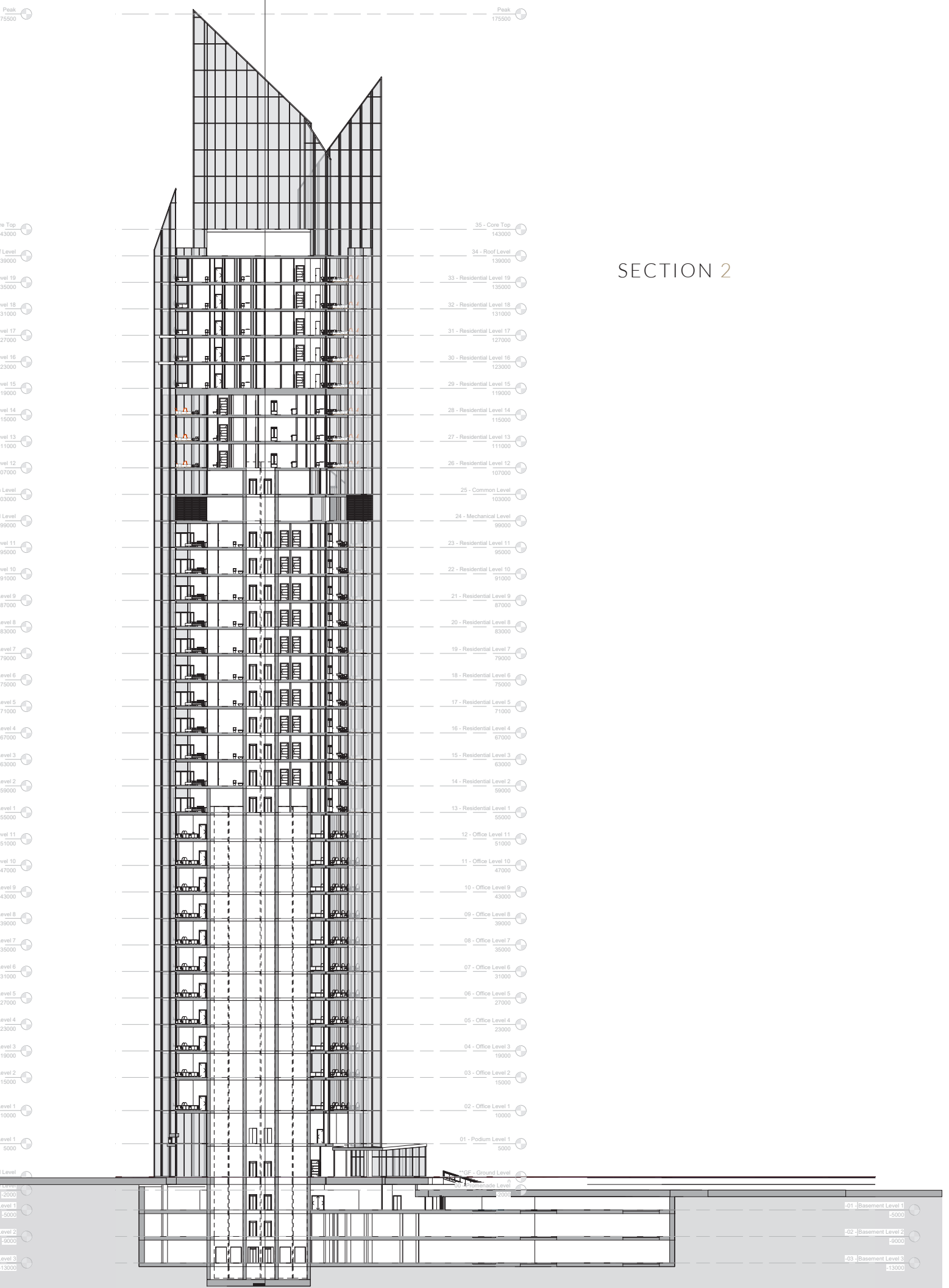
NORTH ELEVATION



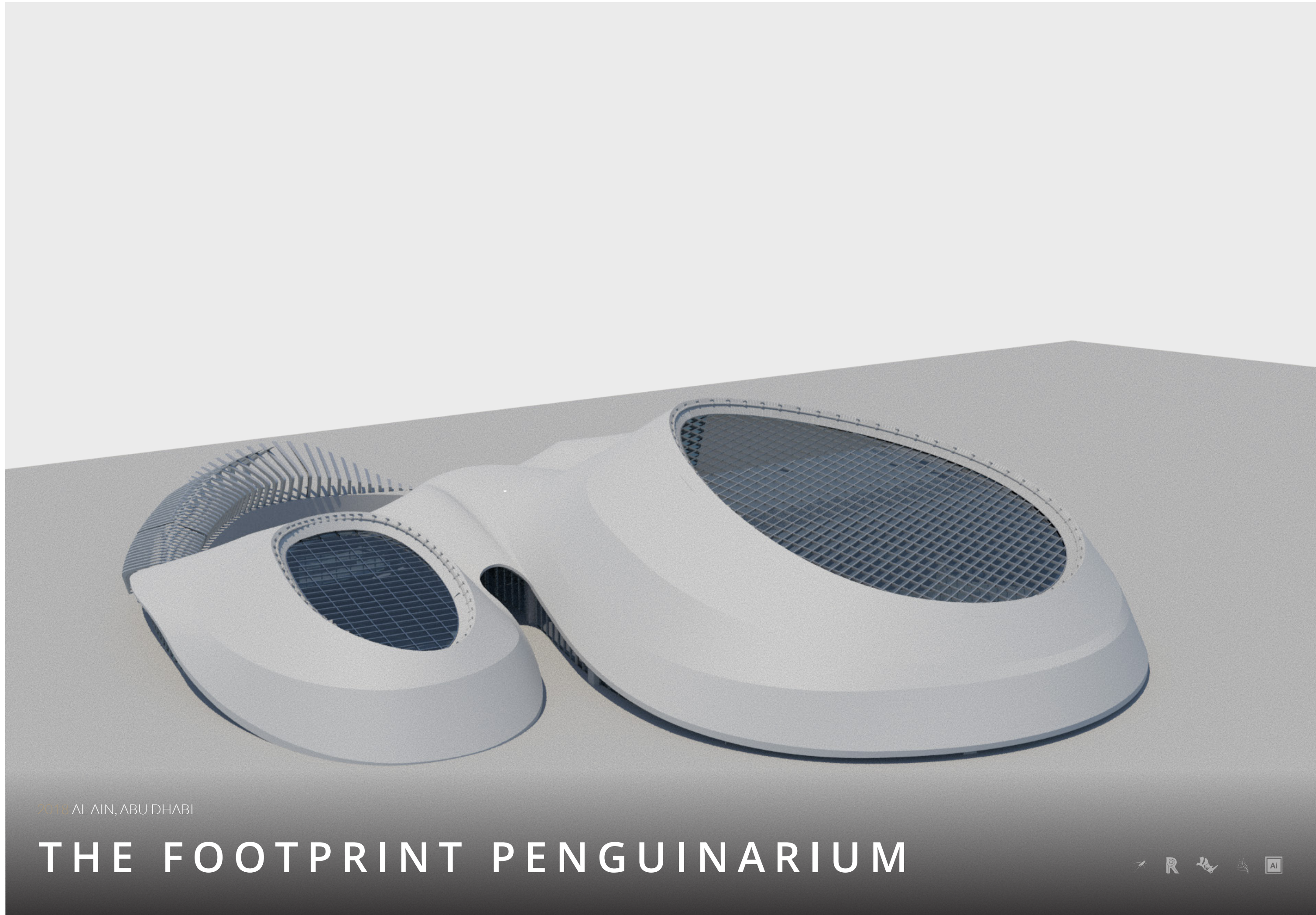
SECTION 1



SECTION 2







2010 AL AIN, ABU DHABI

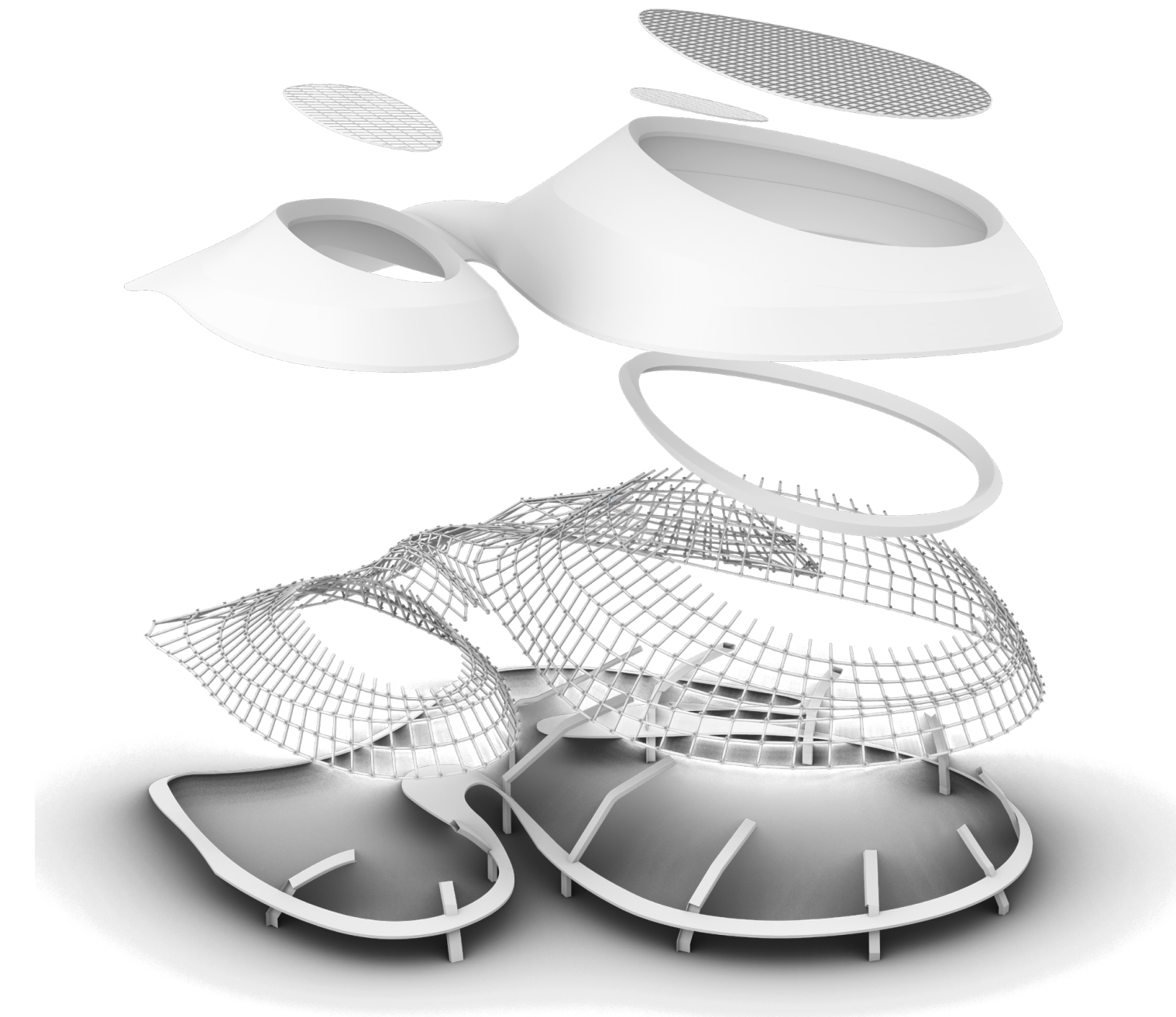
# THE FOOTPRINT PENGUINARIUM



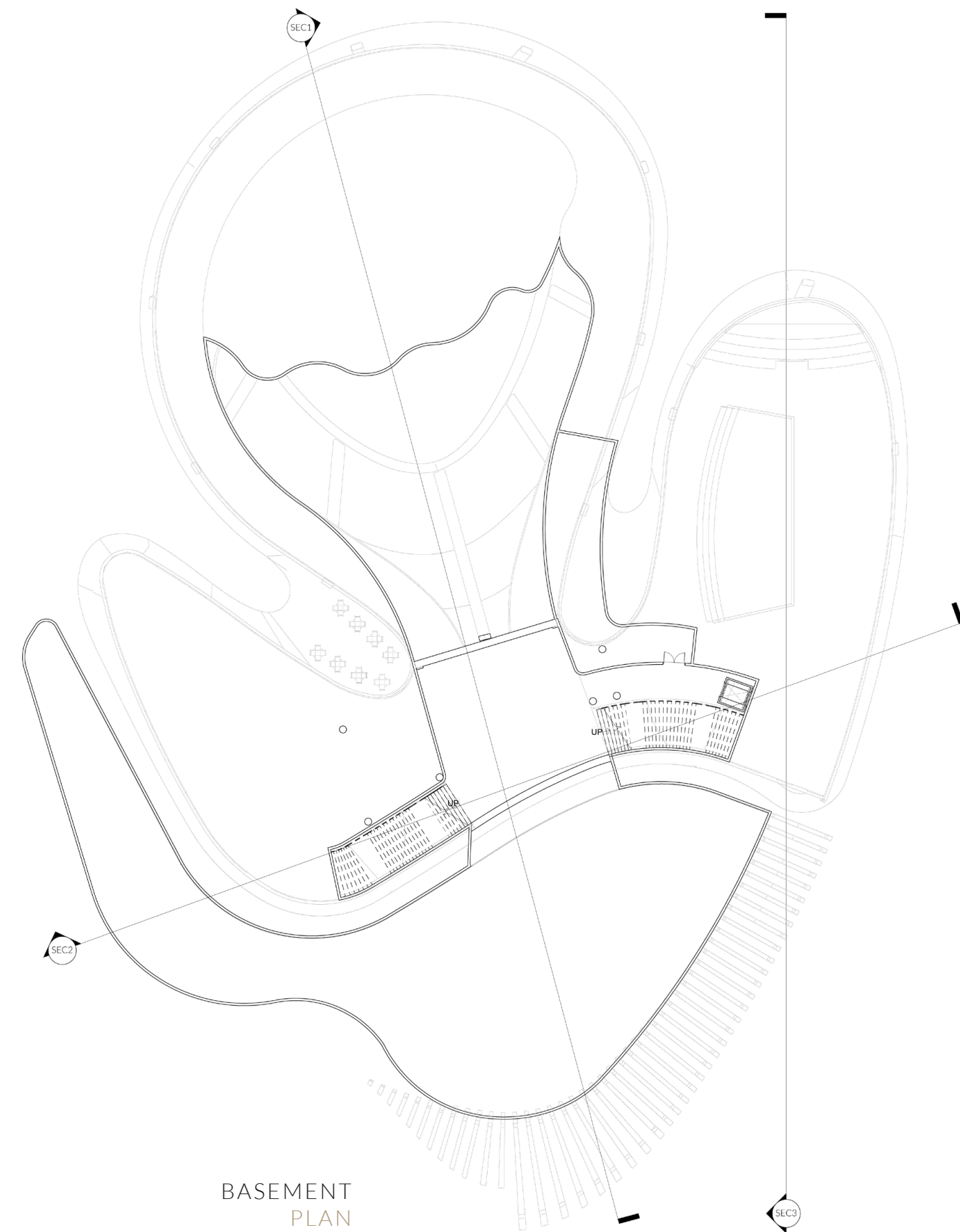
## CONCEPT AND BRIEF

The Footprint was inspired by, you guessed it, the footprint of a penguin. From the inception of the idea the goal was to make the footprint of the building mimic the footprint of a penguin. The goal was achieved by creating three dome shaped forms or varying sizes. Each dome imitates one toe of the penguin's footprint. To complete the concept of a footprint in plan, ribbed shading elements begin before the entrance. These ribs create an obvious and interesting entrance to the building. On one side of the ribs is the external penguin exhibition area and on the other is a beautiful view of Al-Ain's mountains. Additionally, the ribs provide shading to the southern façade of the building.

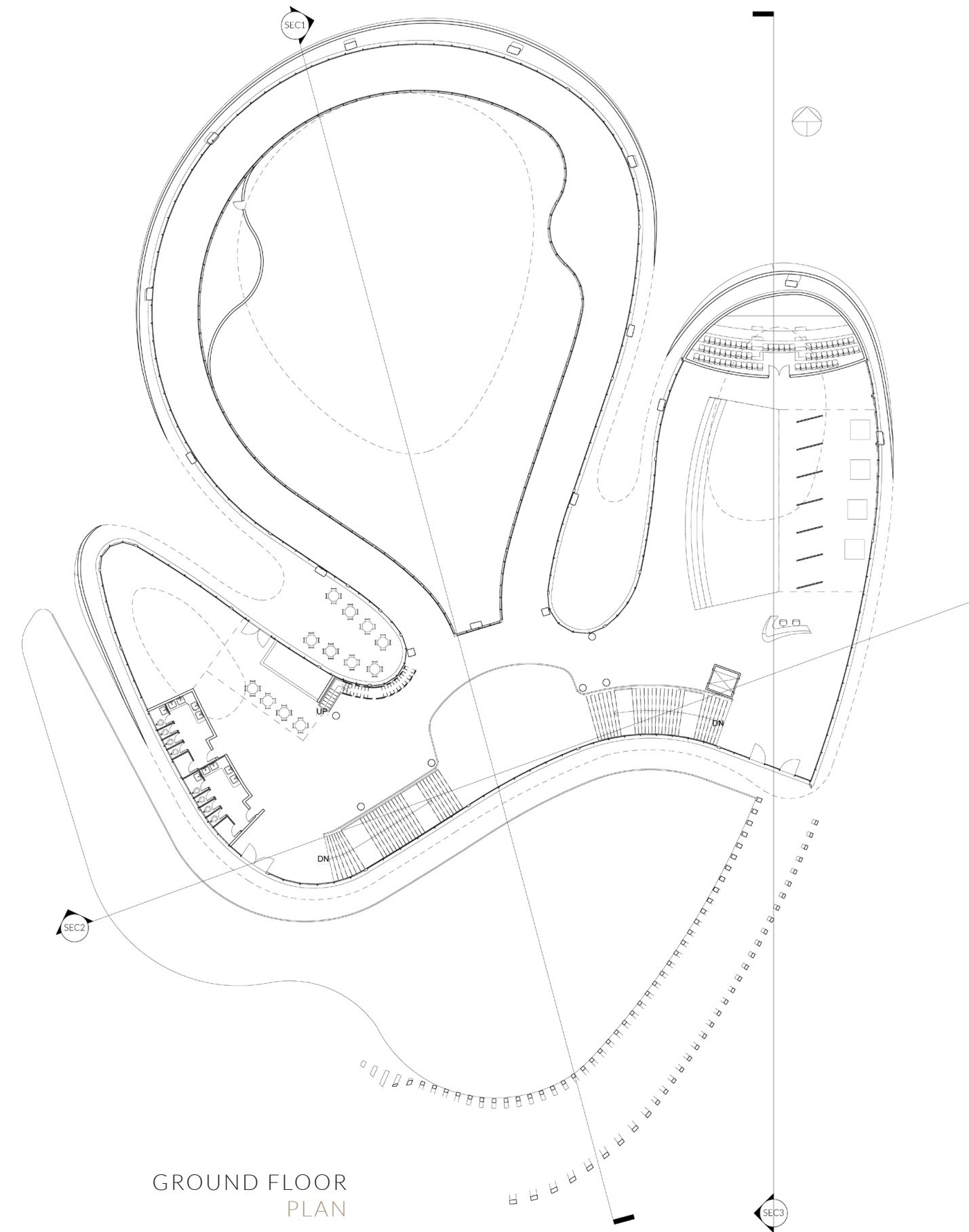
Sunlight is indirectly diffused into the building with the three north facing skylights mounted on each of the domes. Load is transferred through a combination of steel mesh and concrete structures.



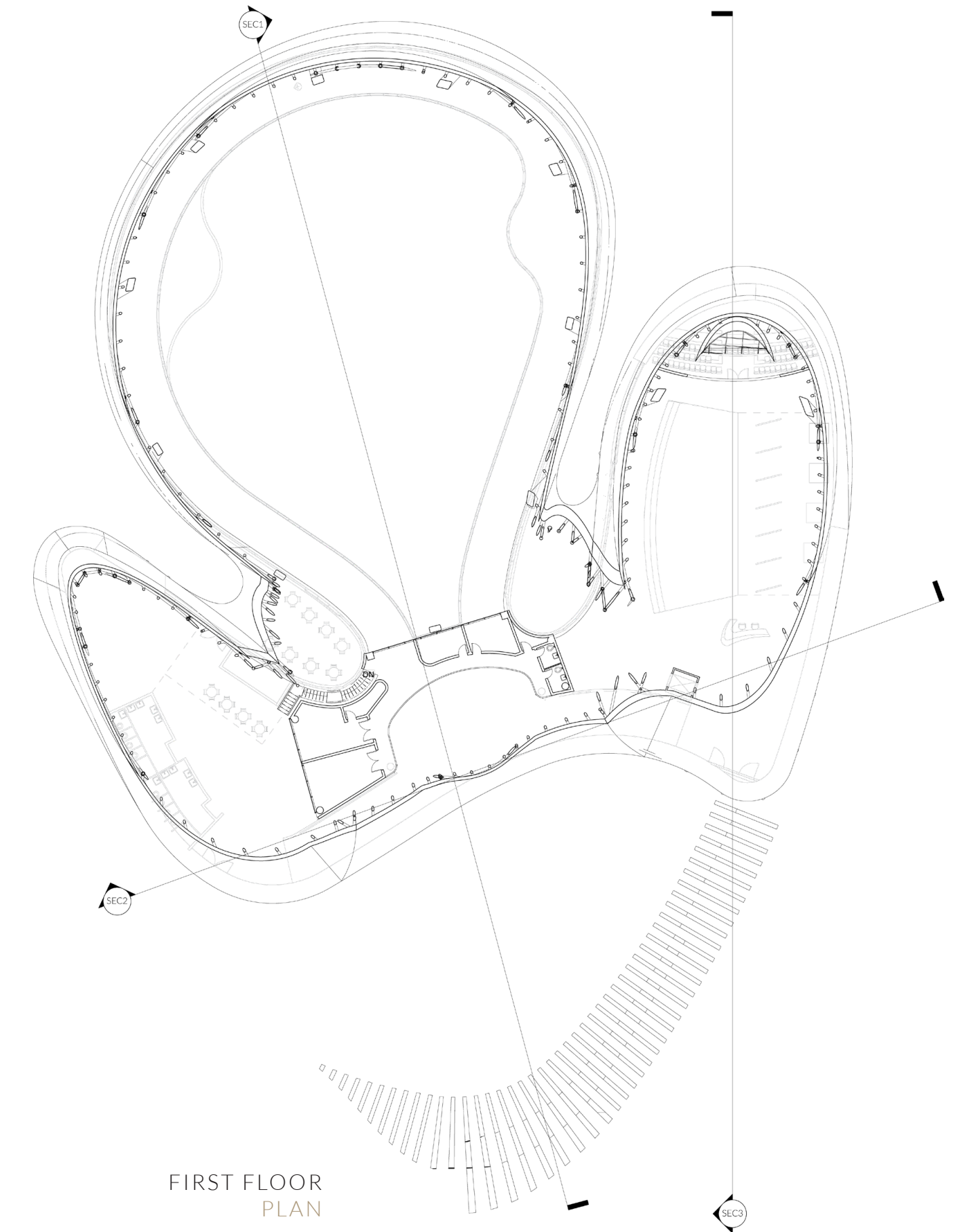
CONCEPT FORM EVOLUTION



BASEMENT  
PLAN

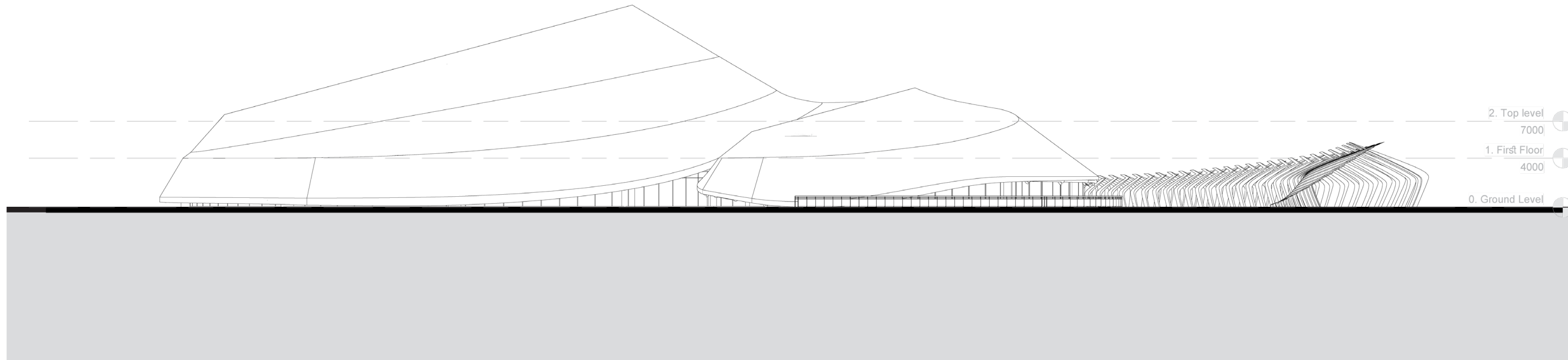


GROUND FLOOR  
PLAN

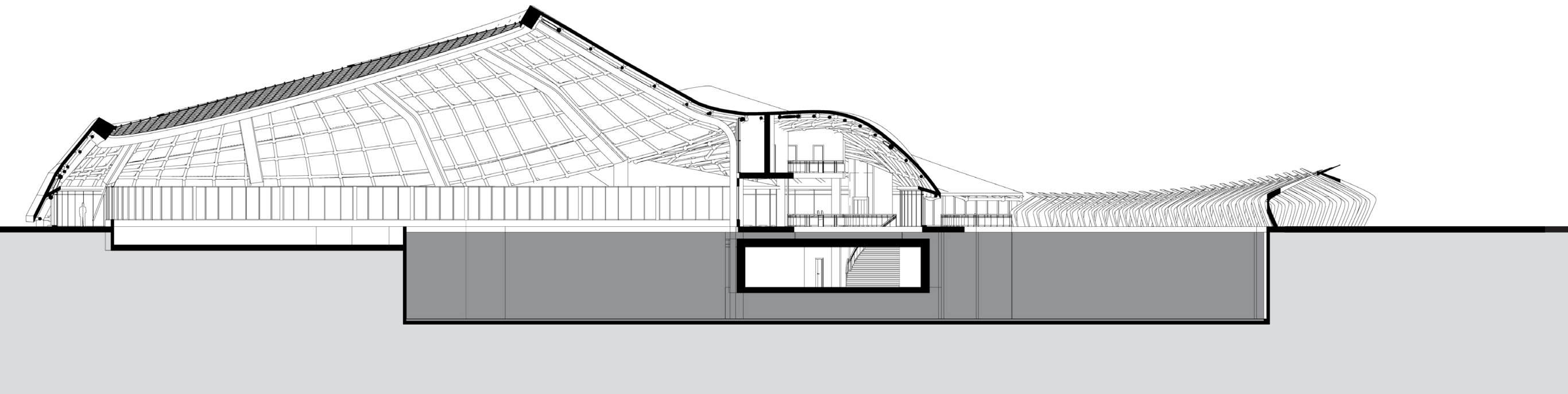


FIRST FLOOR  
PLAN

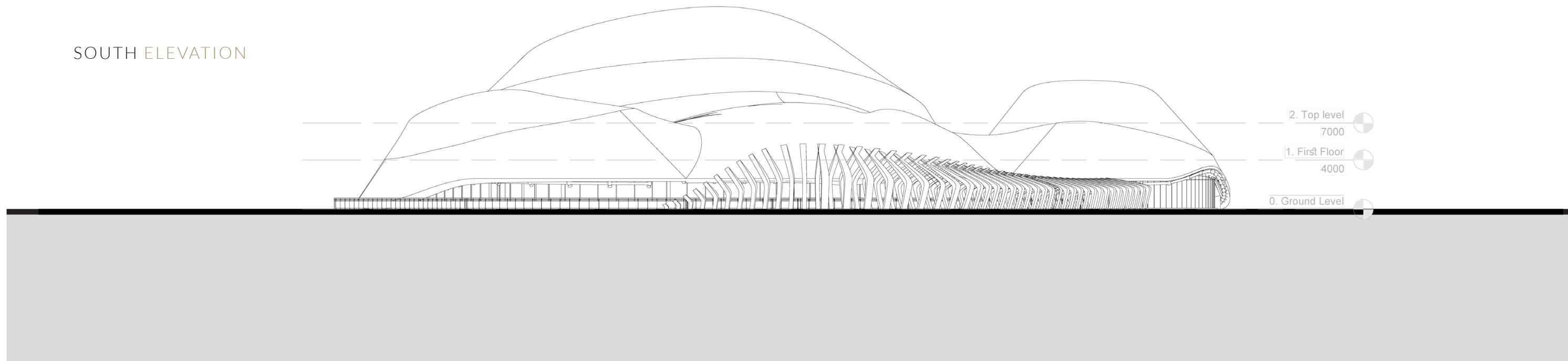
EAST ELEVATION



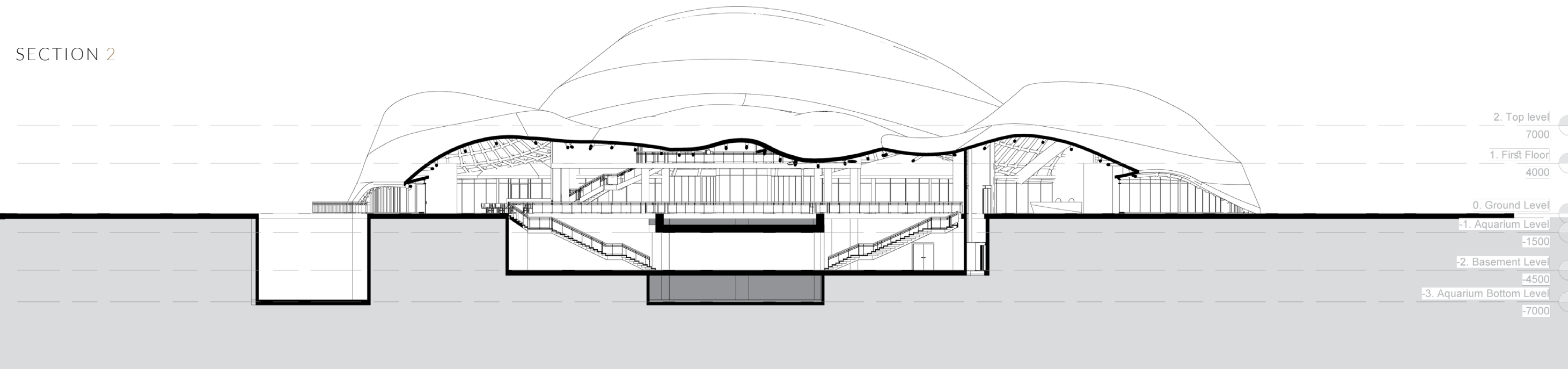
SECTION 1



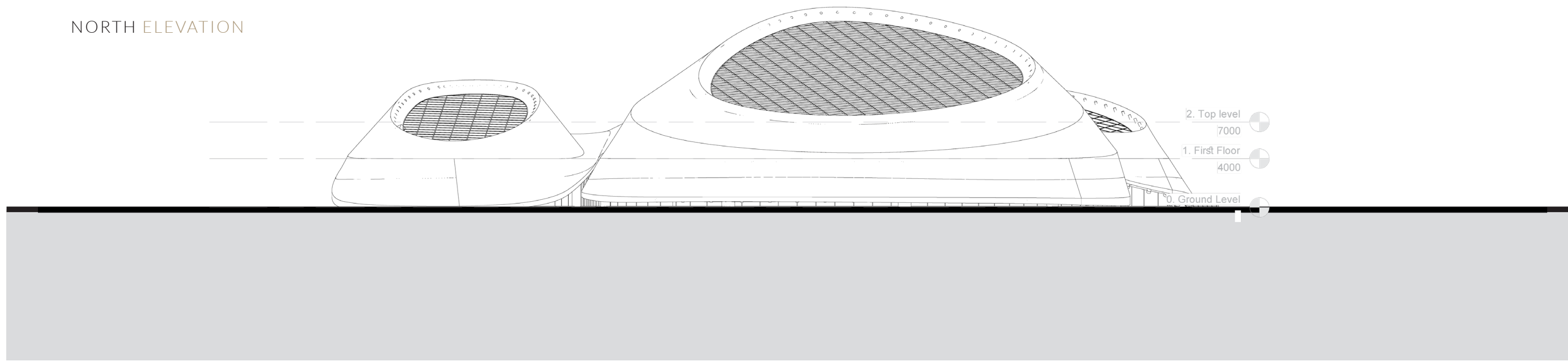
SOUTH ELEVATION



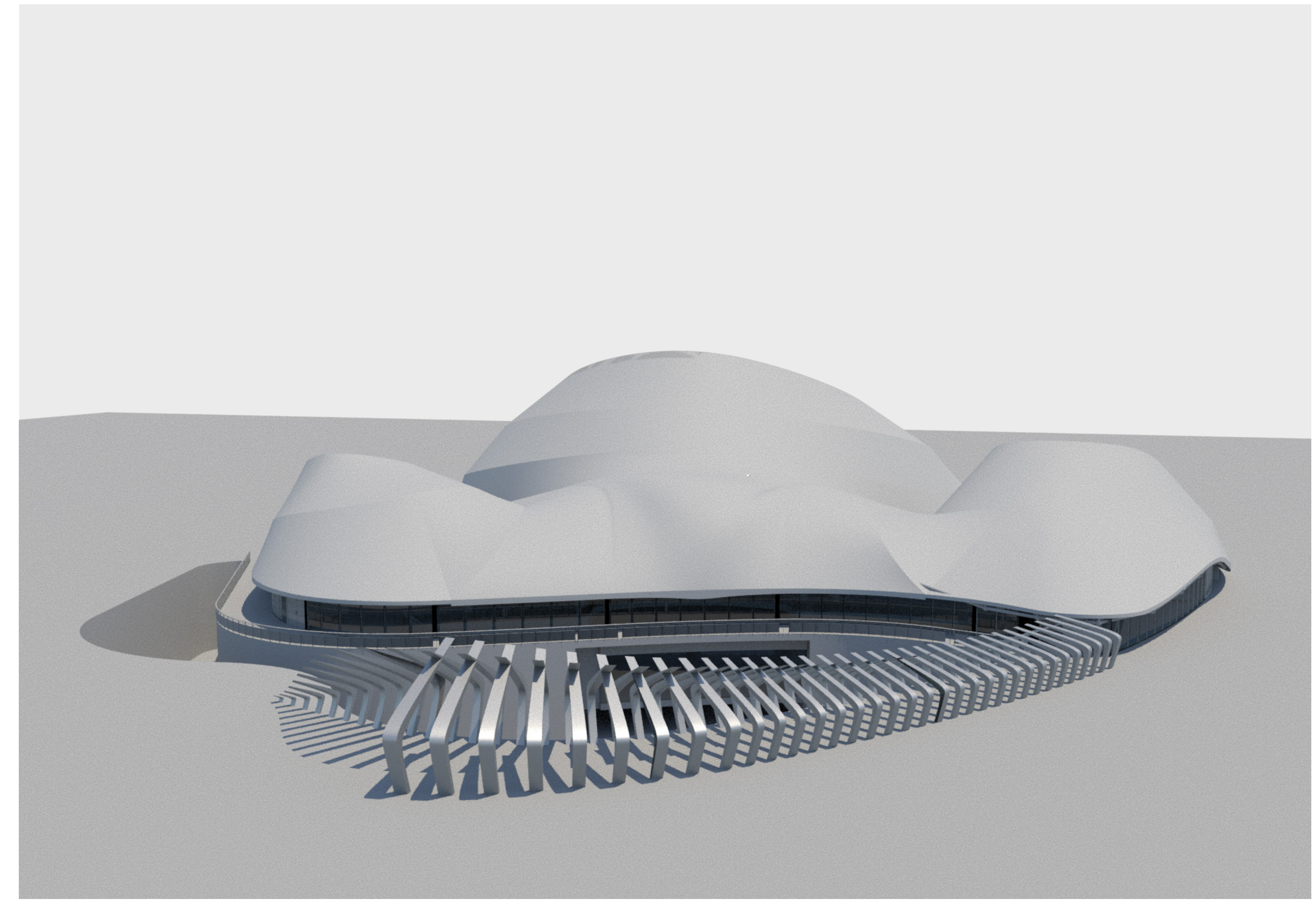
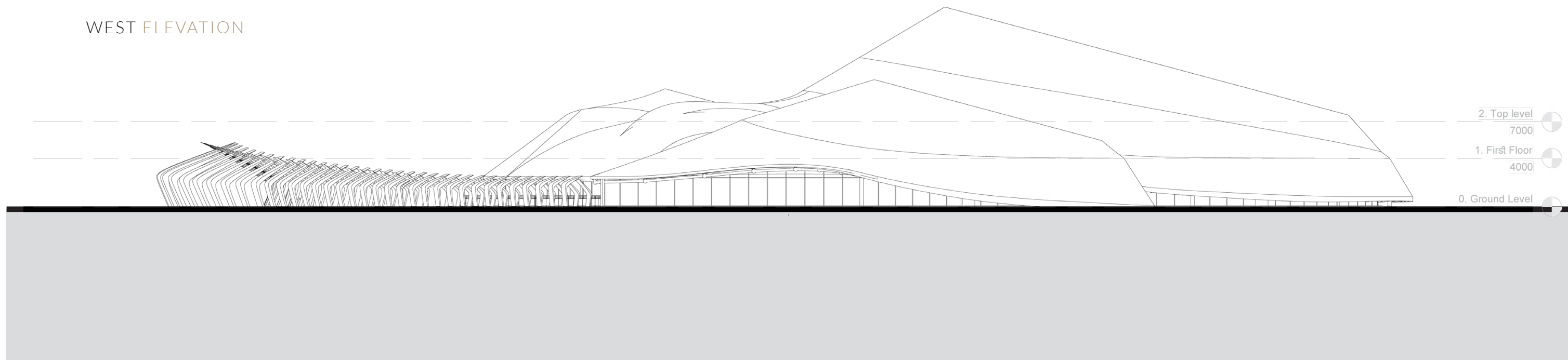
SECTION 2



NORTH ELEVATION



WEST ELEVATION





2019 SADIYAAT MARINA DISTRICT, ABU DHABI

# THE GARDEN OF GARDENS



## CONCEPT AND BRIEF

### PROGRAM

This studio was divided into two projects, a group project and an individual project. The group phase involved planning the given site whereas the individual phase focused on a specific area of the site planned in the previous phase.

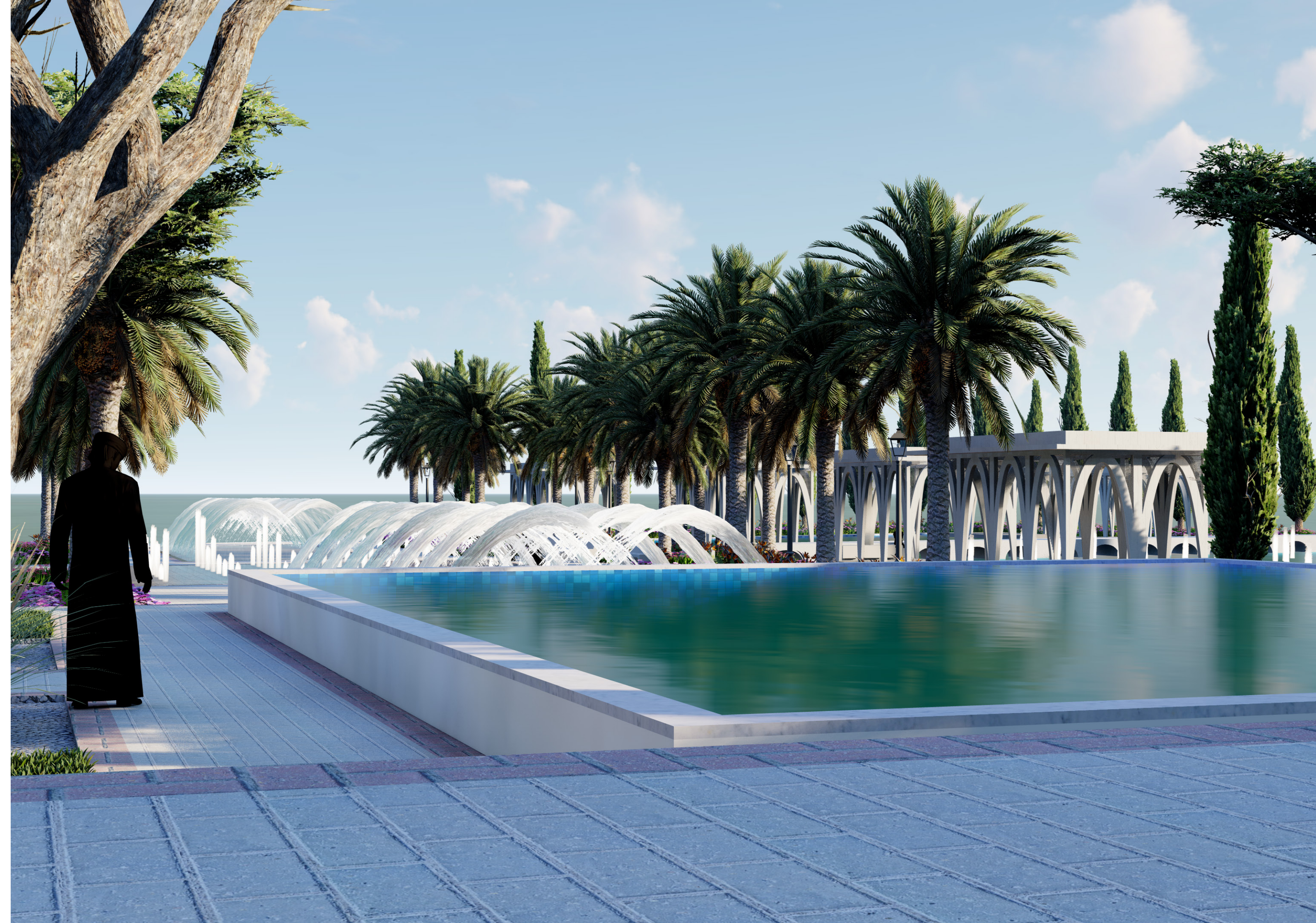
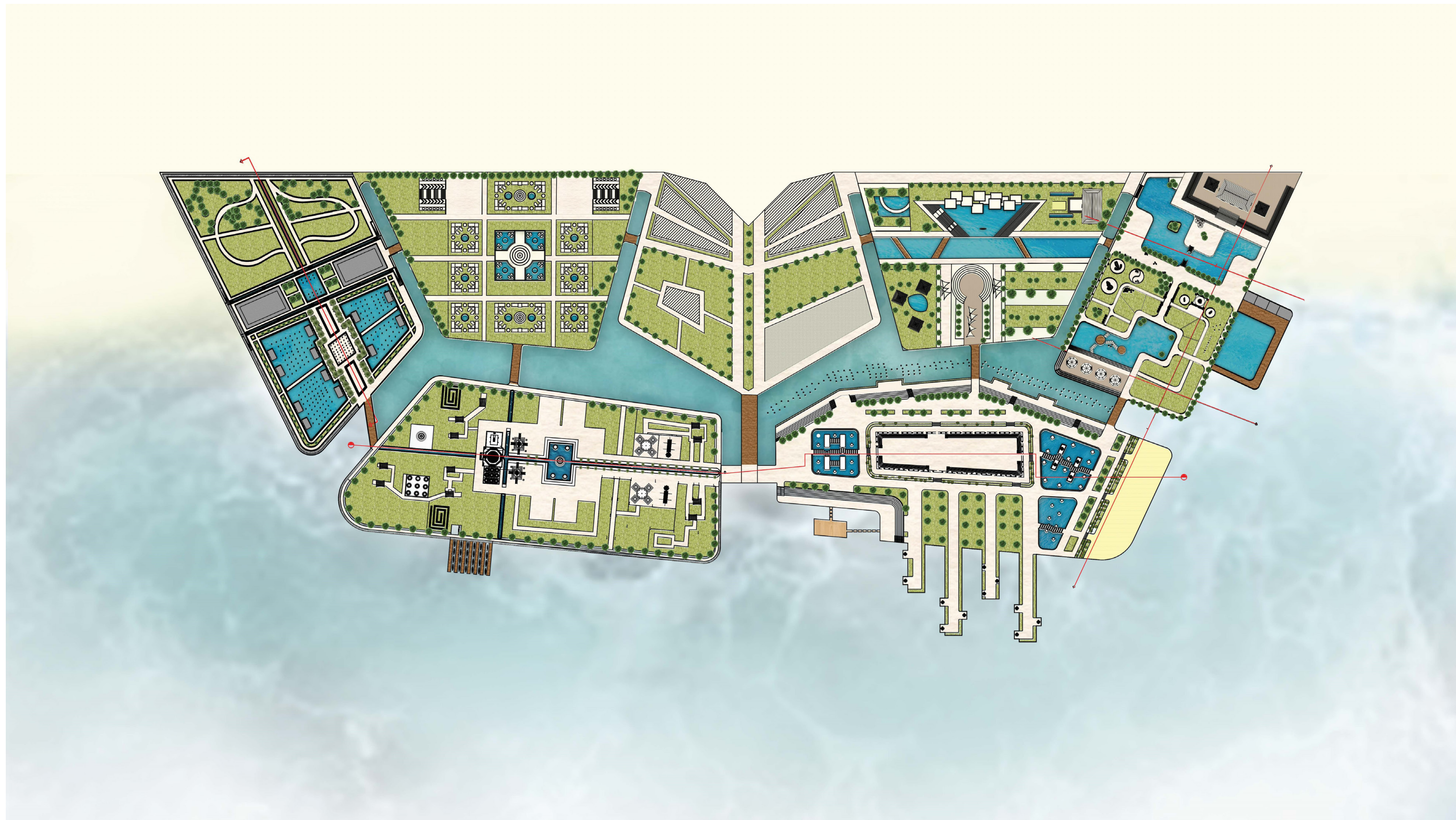
### DESIGN FRAMEWORK AND PLANNING

During team brainstorming sessions, we decided we would divide our site into several smaller gardens. Each garden represents a different kind of garden from cultures all around the world. This reflects the acceptance of the United Arab Emirates of all sorts of different cultures from all over the world. The gardens planned were:

- The Mughal Garden
- The Persian Garden
- The Japanese Garden
- The Renaissance Garden
- The Greek Garden
- The Chinese Garden
- The UAE Garden

The gardens are separated by a canal that runs through the park. Visitors enter through the UAE garden and can make their way around by crossing bridges that connect the gardens. Visitors can rent canoes from a station in the Persian garden and travel through the canals to the various gardens. Between the Greek, Chinese and Japanese gardens are a series of dancing fountains.







## PROJECT OVERVIEW

### THE DEVELOPMENT

Al Jazeera Youth Hub was a development designed to fill a major need of Abu Dhabi. It is comprised of two structures, a Youth Forum and a Youth Hostel.

### THE FORUM

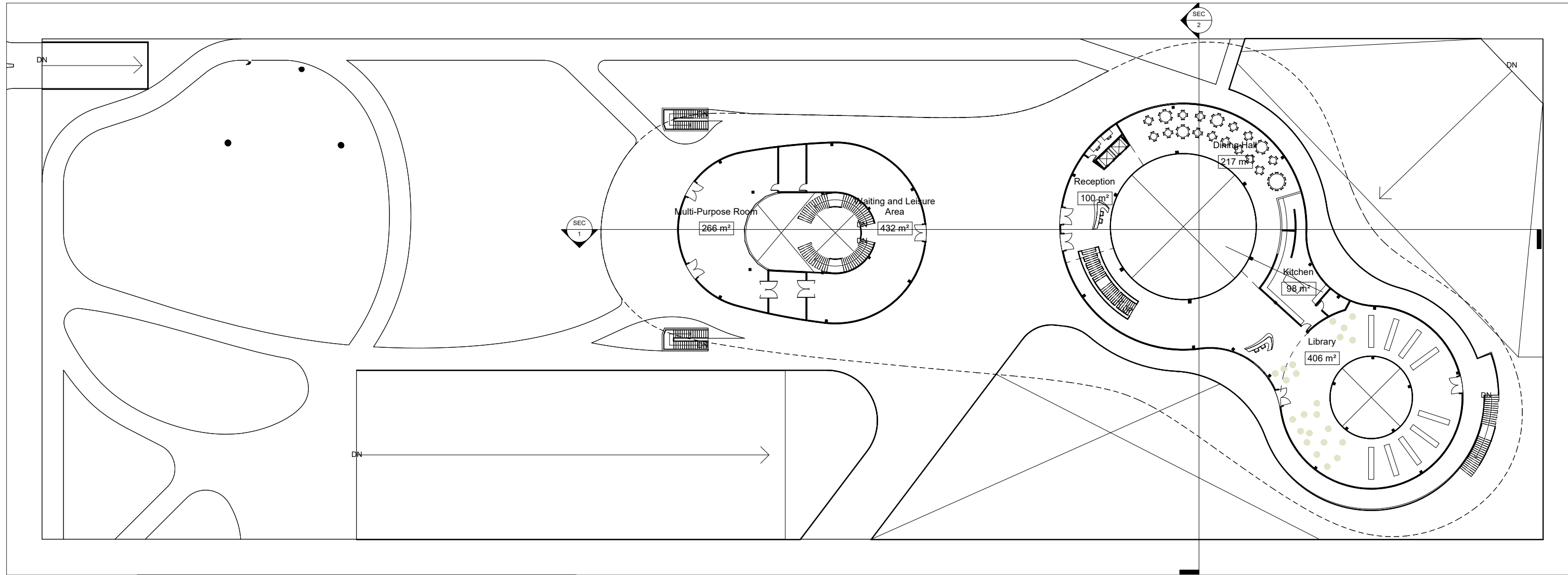
The Youth Forum was designed to give Abu Dhabi's Youth a place to come relax, work, play and collaborate. With a total area of 6849m<sup>2</sup> the youth forum houses many facilities that are required by the youth of today. Such facilities include areas for learning such as classroom and workshops. Areas for play, such as a gaming center and plenty of open space for sports activities are available. In addition, the forum has an auditorium, multi-purpose hall and exhibition space to show off the skills and talents of the youth. Finally, the youth hub is a center for collaboration, whether it be a young entrepreneur looking to start the next big thing or students looking to work on a group project, the library, meeting rooms and lounges make this is the place to collaborate.

### THE HOSTEL

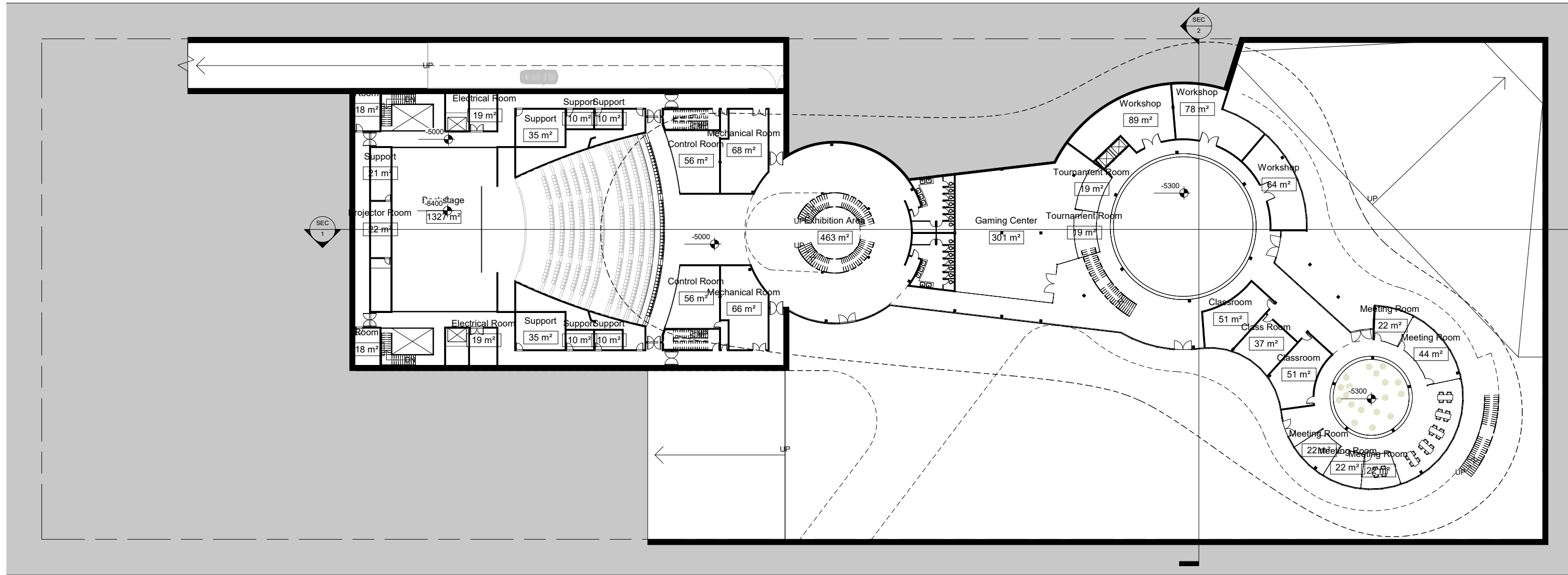
The Youth Hostel was designed to allow groups of traveling students and their teachers to come to Abu Dhabi and stay affordably and comfortably. The hostel has a capacity of 56 people. Its facilities include a cafeteria, laundry room and lounges.

The Hostel was designed as an exercise in design that needs a quick turn around. The 'mini' project was designed in one week.



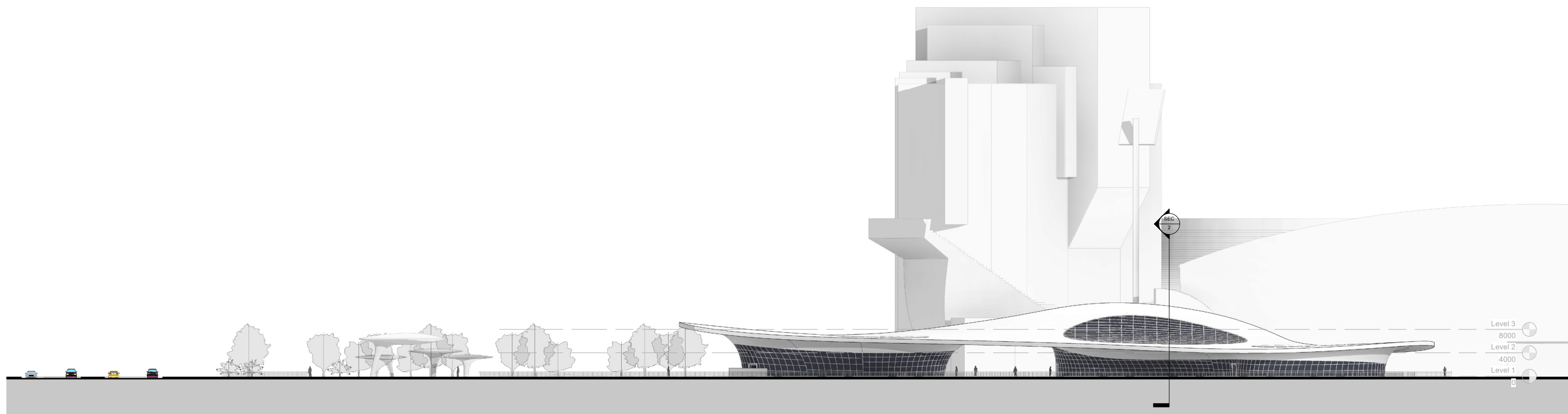


GROUND FLOOR PLAN

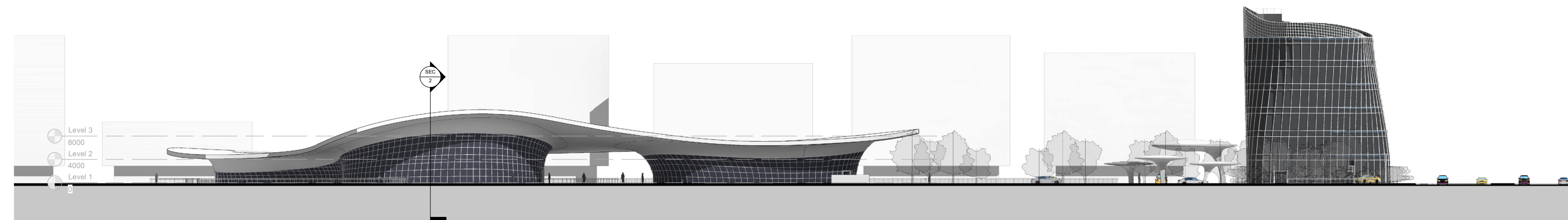


SUNKEN FLOOR PLAN

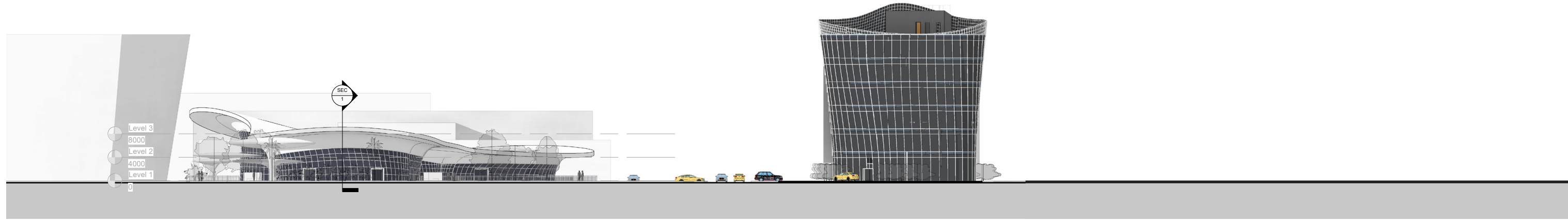




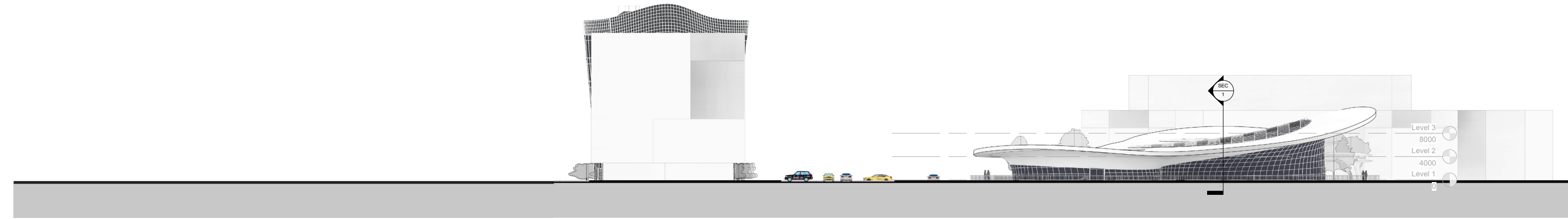
SOUTHWEST ELEVATION



NORTHEAST ELEVATION



NORTHWEST ELEVATION



SOUTHEAST ELEVATION



2019 SADIYAAT MARINA DISTRICT, ABU DHABI

# URBAN DESIGN + LUXURY COMPOUND



## CONCEPT AND BRIEF

### PROGRAM

This studio was divided into two projects, a group project and an individual project. The group phase involved planning the given site whereas the individual phase focused on a specific area of the site planned in the previous phase.

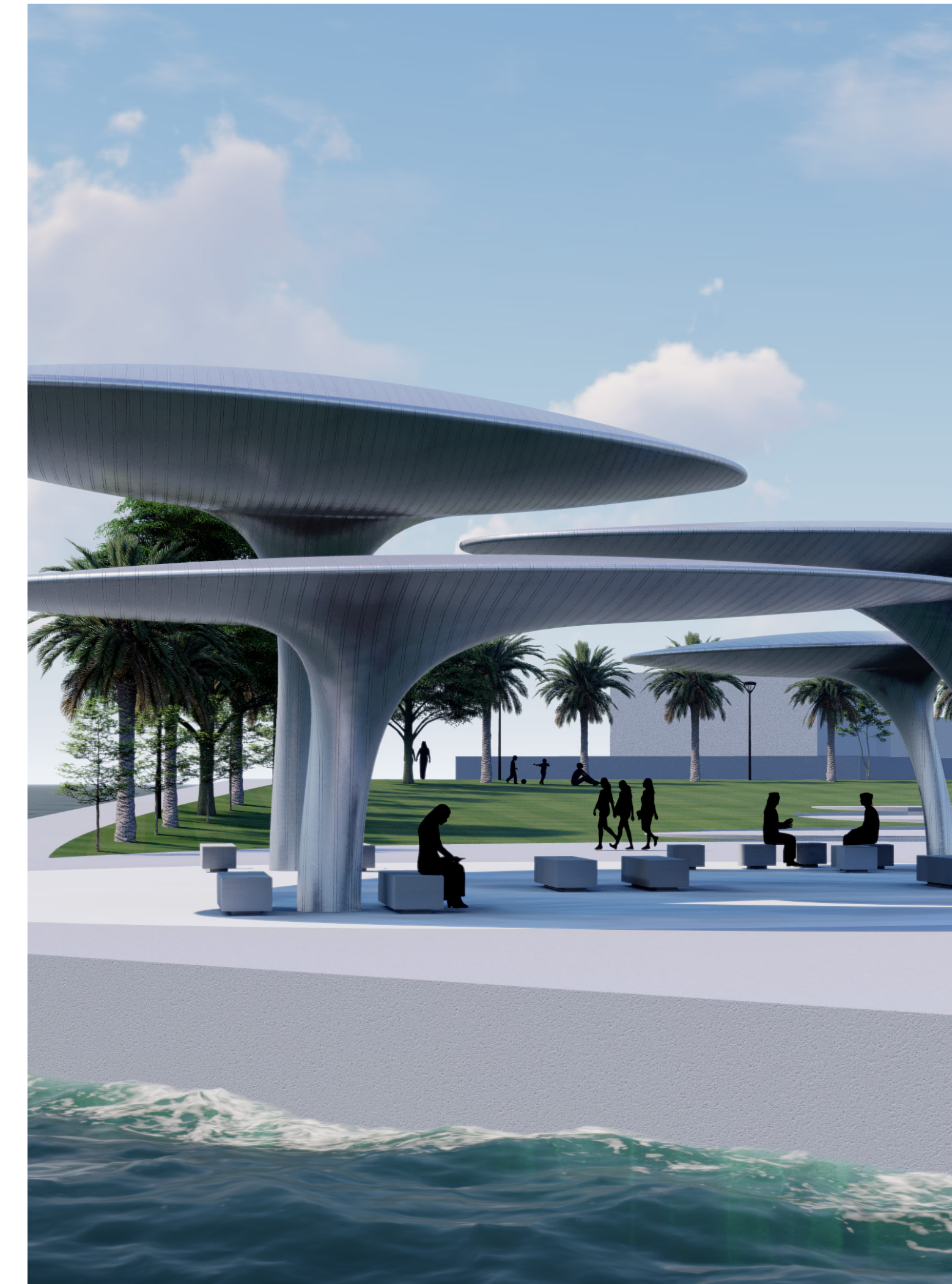
### DESIGN FRAMEWORK

The master site is located on the coast of S'adiyaat Island in the Marina District facing downtown Abu Dhabi. The studio decided as a whole the function of each part of the master site. Then each group took one third of the site to plan. Our group chose the area of the site with the best access. It was decided that the site would include the following:

- City Walk
- Dancing Fountains
- Grand Mosque
- Central Park
- Luxurious Compound
- Private Plaza
- Business Marina
- Business Marina Plaza

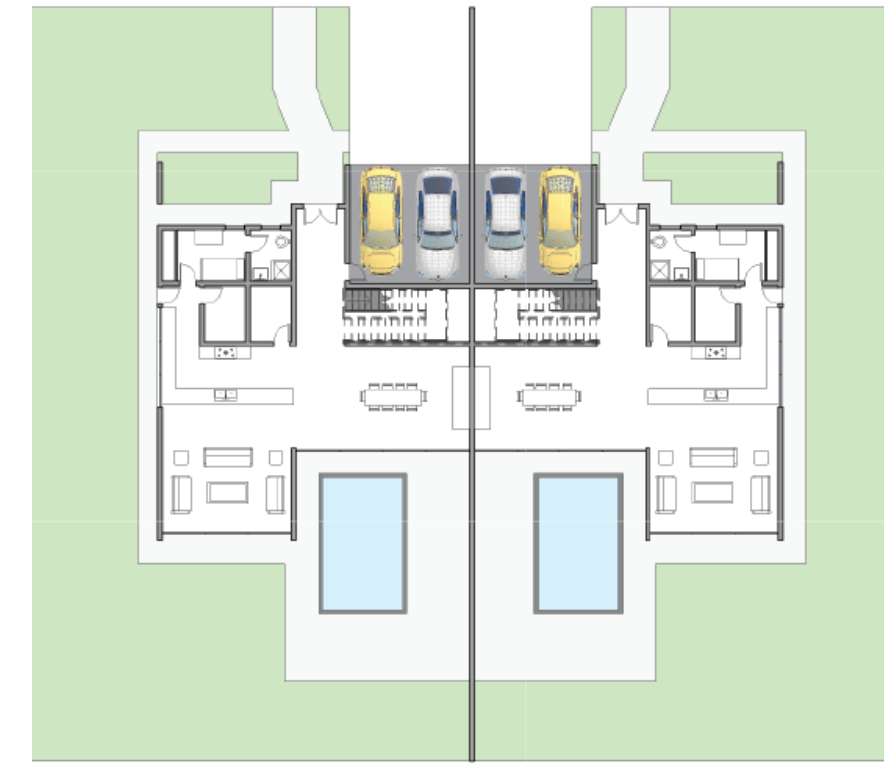
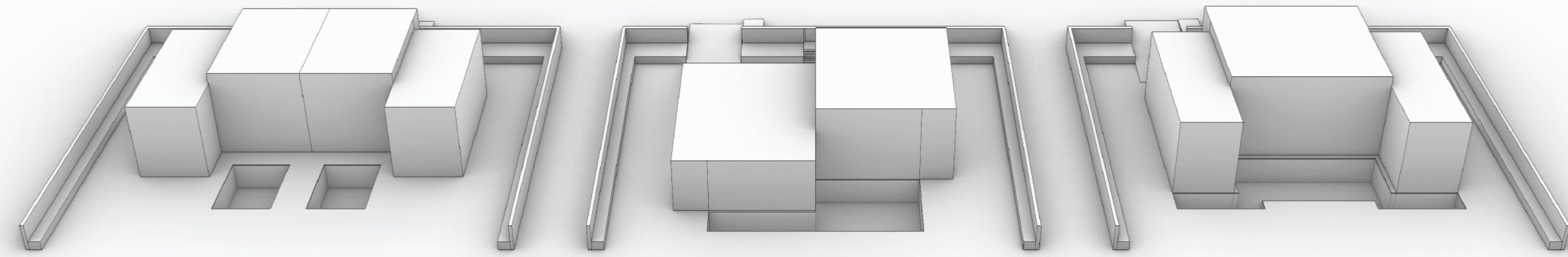
### THE COMPOUND

The compound was separated from the main land as privacy was given a high priority. Two bridges connect the island to the mainland. The compound features 3, 4 and 5 bedroom villas. Each villa gets amazing views to the marina and Abu Dhabi.

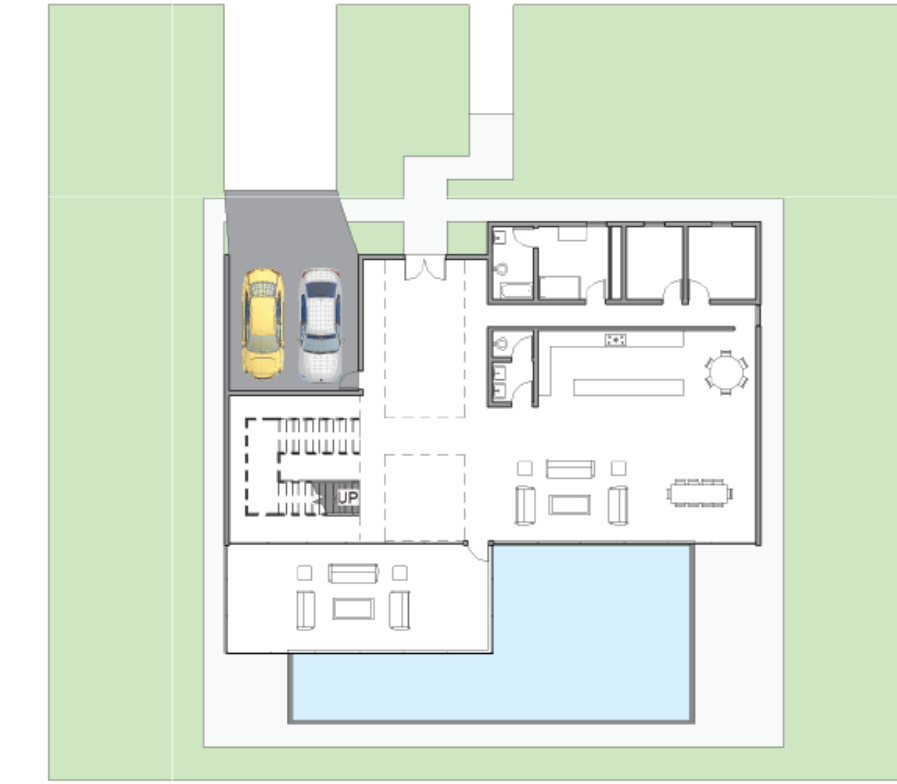




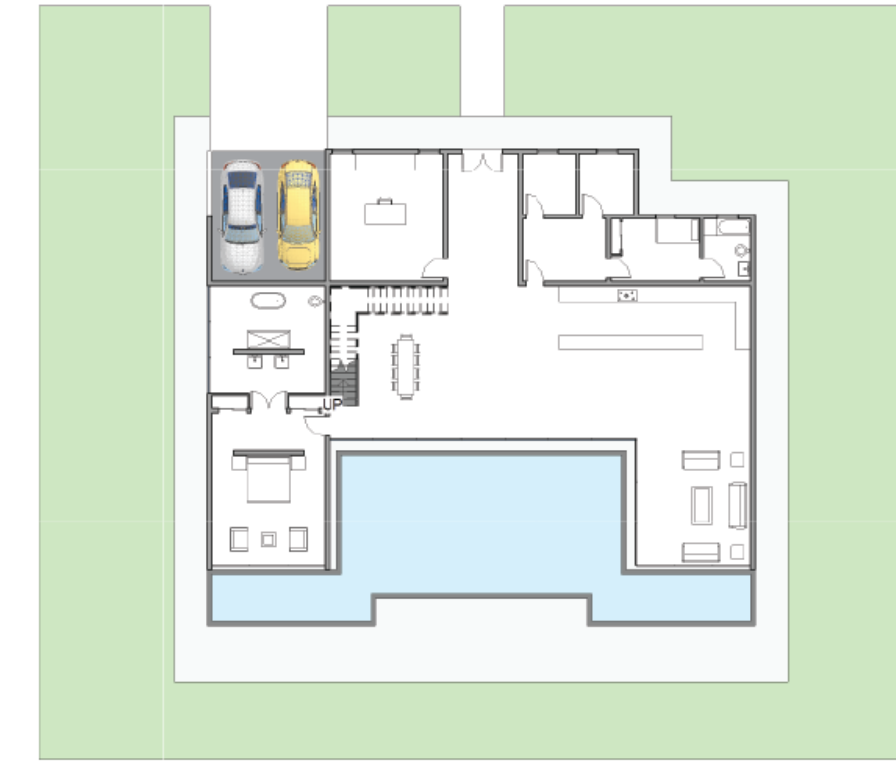
## VILLA TYPOLOGY & PROGRAM



GROUND FLOOR PLAN



GROUND FLOOR PLAN

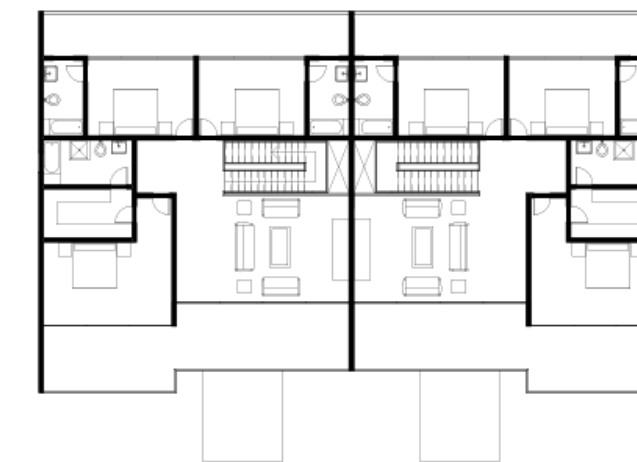


GROUND FLOOR PLAN

Villa Type 1	
14	Number of Villa's
3	Number of Bedroom's
320m <sup>2</sup>	Approximate Floor Space
Attached	Villa Type
4.6	Population Per Villa
65	Total Population

Villa Type 2	
9	Number of Villa's
4	Number of Bedroom's
546m <sup>2</sup>	Approximate Floor Space
Detached	Villa Type
5.9	Population Per Villa
54	Total Population

Villa Type 3	
6	Number of Villa's
5	Number of Bedroom's
700m <sup>2</sup>	Approximate Floor Space
Detached	Villa Type
7.1	Population Per Villa
43	Total Population



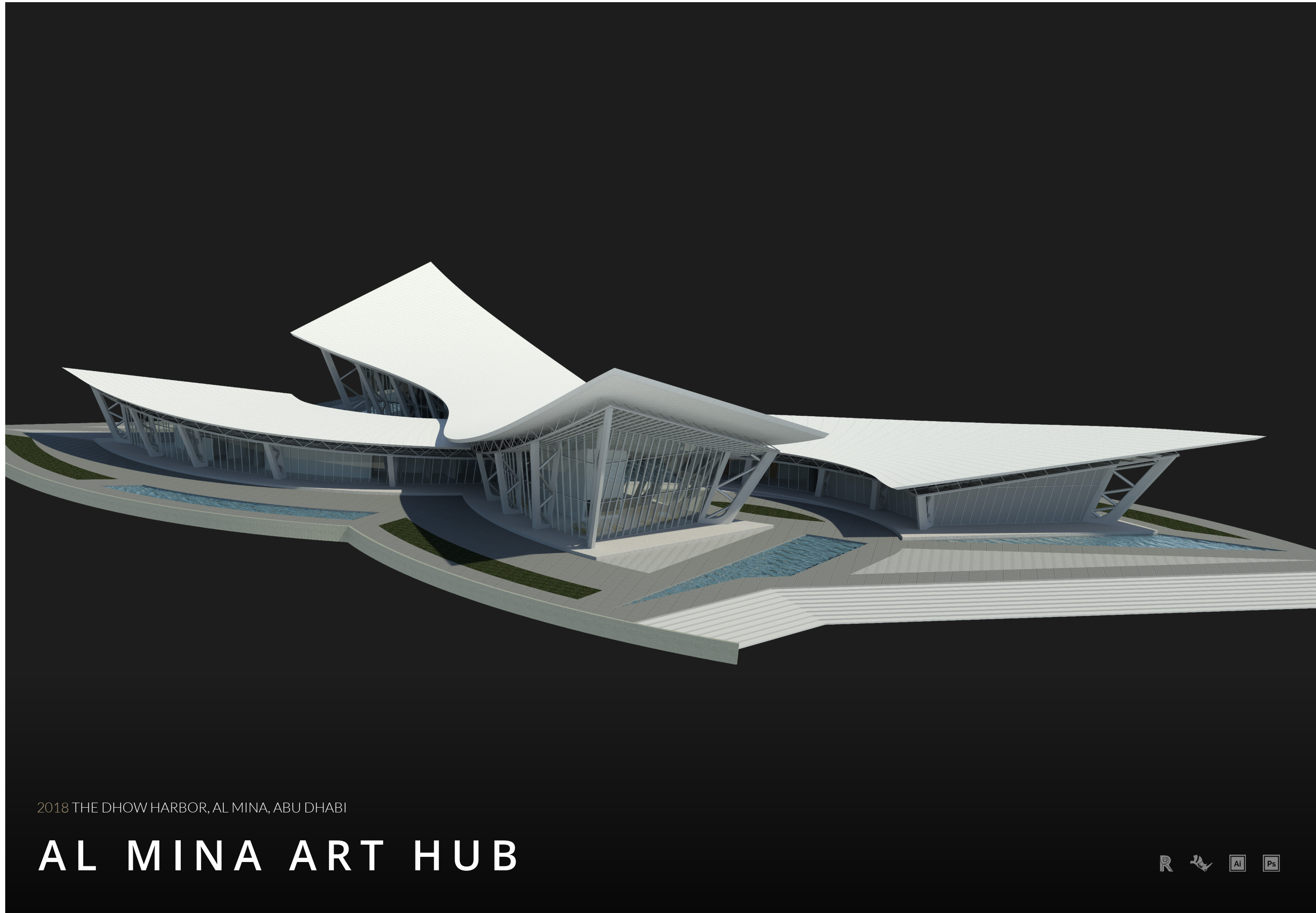
FIRST FLOOR PLAN



FIRST FLOOR PLAN



FIRST FLOOR PLAN



2018 THE DHOW HARBOR, AL MINA, ABU DHABI

# AL MINA ART HUB



## CONCEPT AND BRIEF

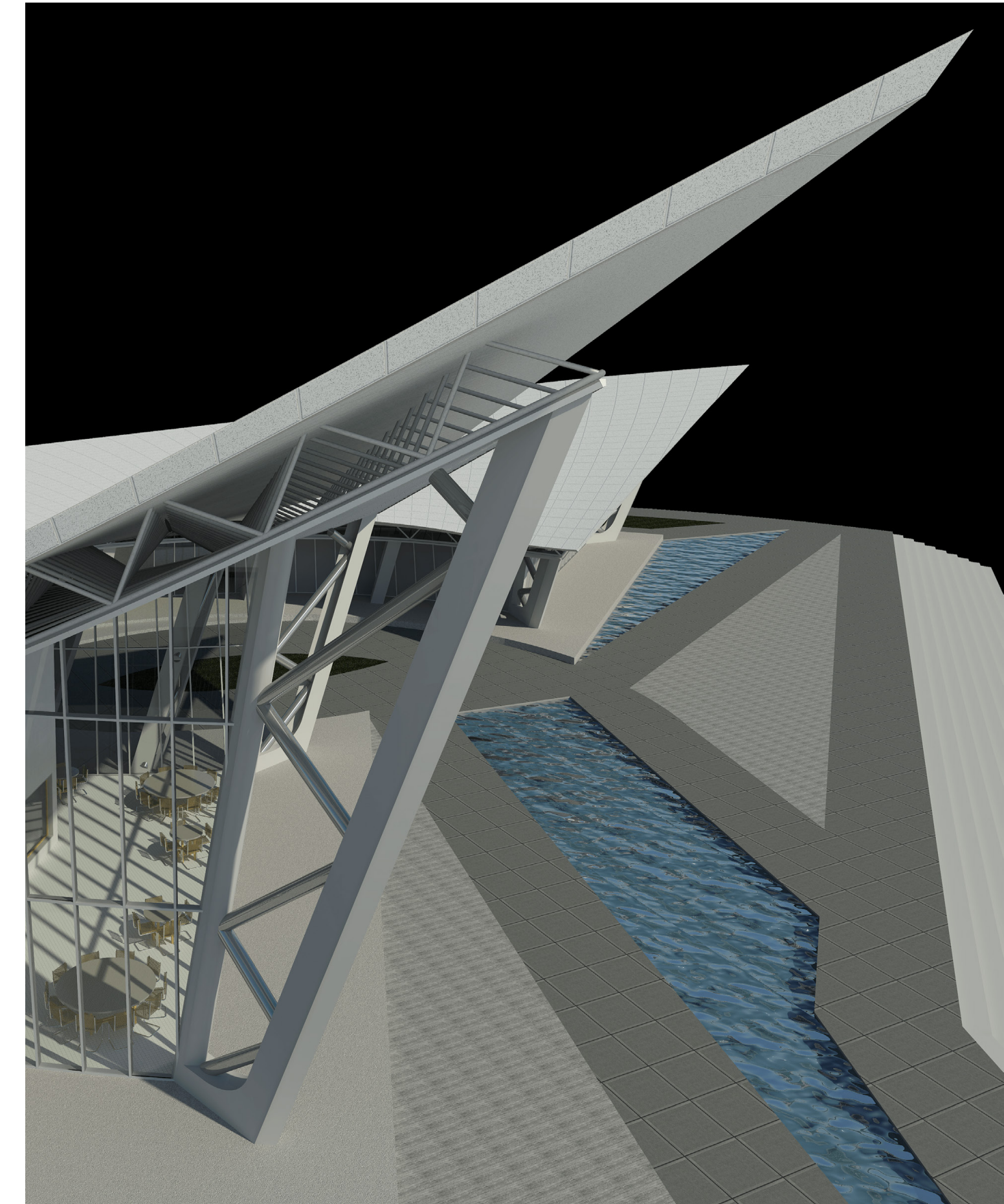
### PROJECT SUMMARY

Al Mina Art Hub was a studio project which placed a special focus on the concept and form of the building.

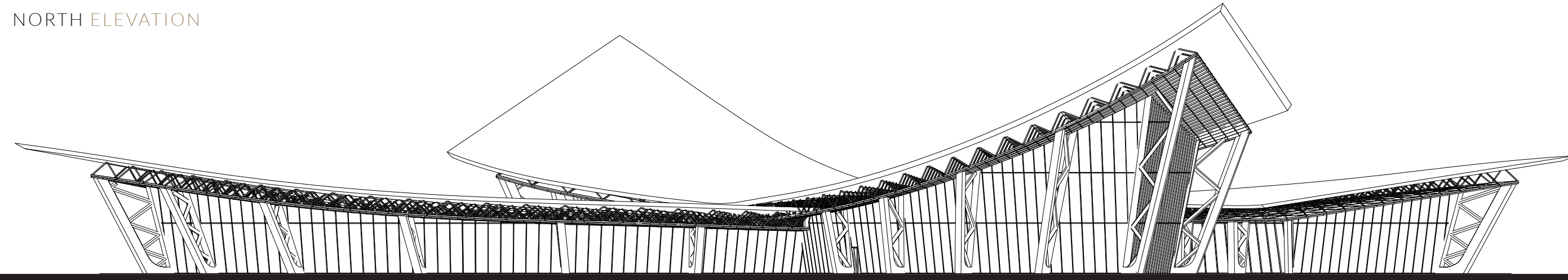
The Hub was a cultural exhibition space designed to be a center for art in Abu Dhabi. The project was located right of the Dhow Harbor, in Al Mina, across the sea from what is now the Abu Dhabi Youth Hub.

### CONCEPT

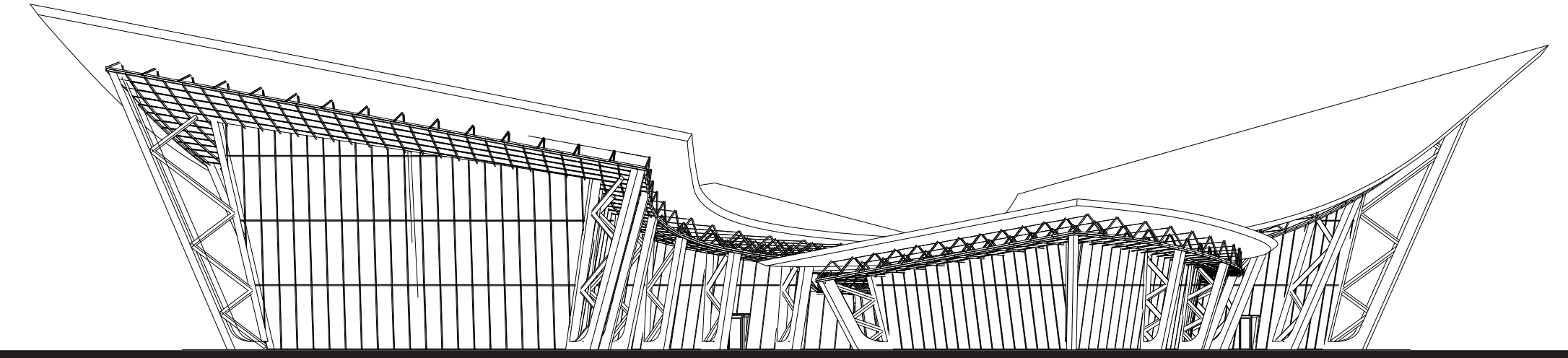
The original design was inspired by the National Day Air Show that takes place on the Corniche in Abu Dhabi every year. The fluidity of the planes flying over each other was incorporated into the design. The design had only two wings at first. After a few iterations, later the design had four wings in order to accommodate all program requirements.



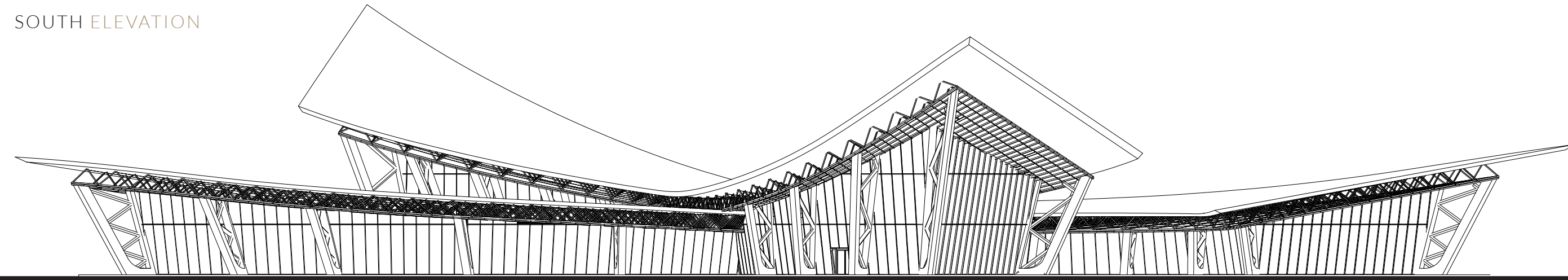
NORTH ELEVATION



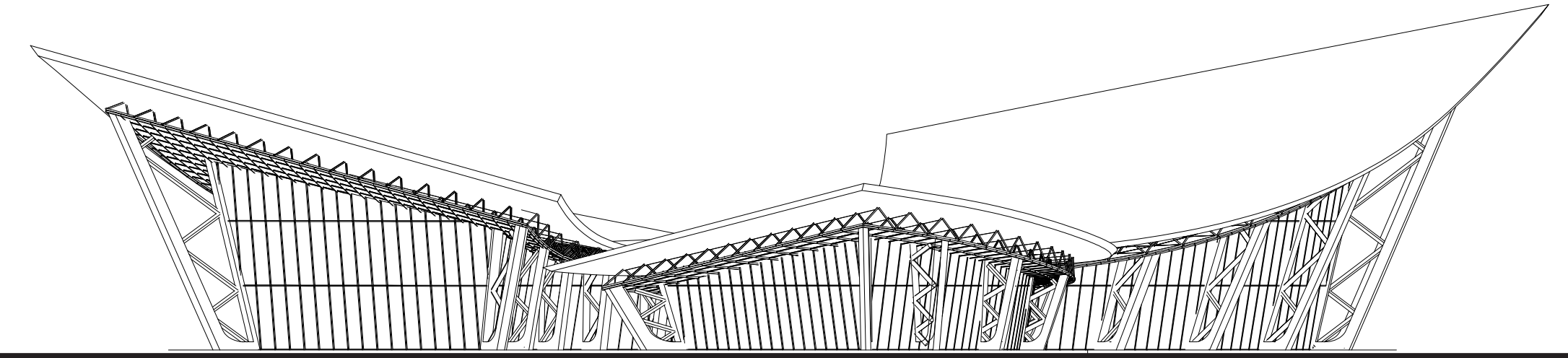
EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION





2017 AL ZEINA, ABU DHABI

# THE DHOW VILLA



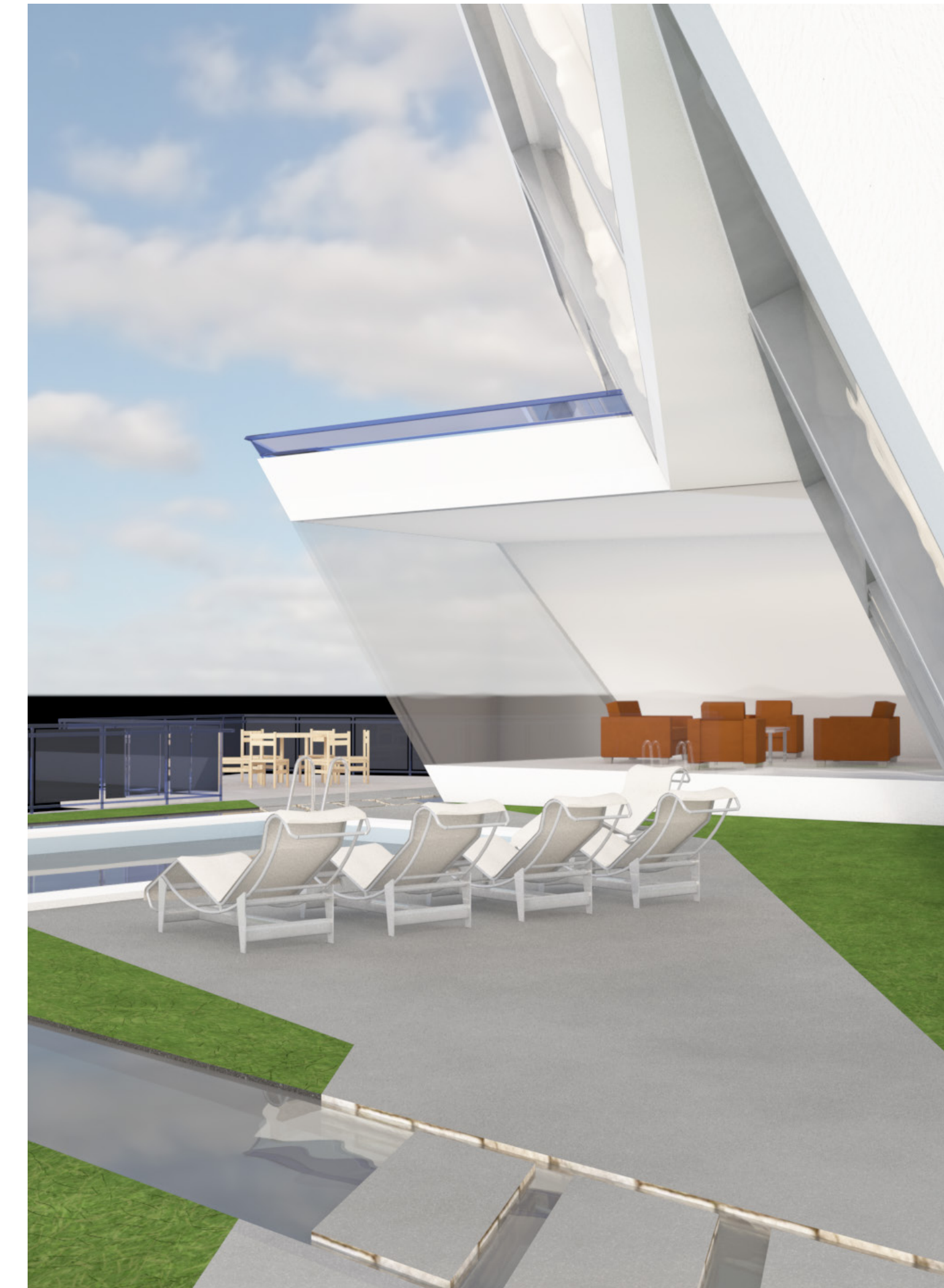
## CONCEPT AND BRIEF

### CONCEPT AND INSPIRATION

The villa was inspired by the dhow boat commonly used in the middle eastern region for fishing, pearl diving and much more. It is a part of the history of the region. The resemblance to the dhow is most clearly seen in elevations and sections.

### CLIENT STORY

A small family of four. A husband, wife, son, and daughter. A very outdoor family. Love to go out to the park for a picnic or to the beach to have a swim. Both parents work. Father is a lawyer with his own a small practice. Mother is a surgeon who works late hours. Both children are young and in school.

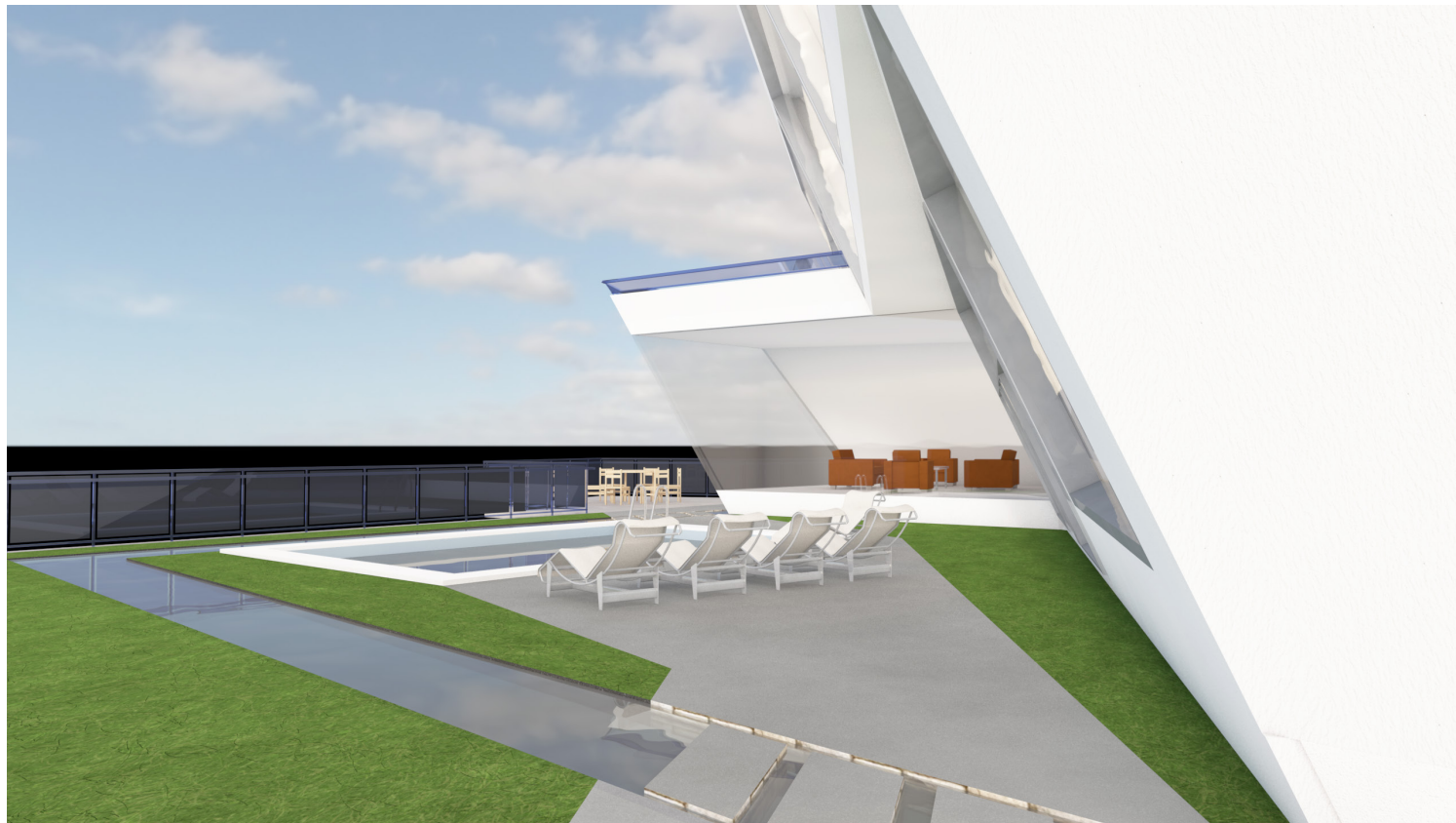


# BUILDING FEATURES



EAST FACADE

The entrance of the building and the front/east façade of the building is made up of interesting angles and lines. This has been done to make the entrance a distinguished part of the building.



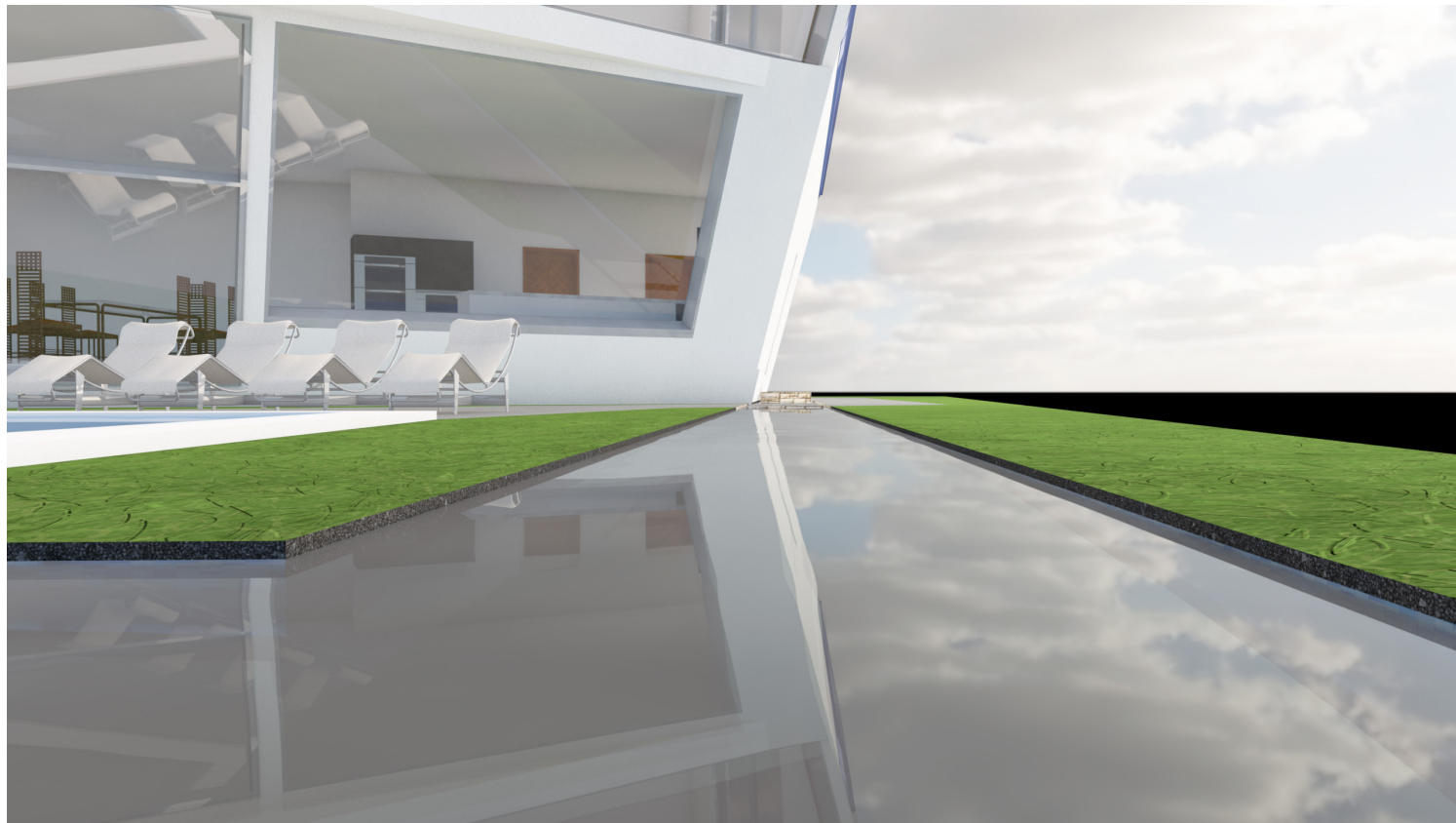
LANDSCAPING

Walking to the front of the building reveals a beautifully crafted landscape. Complete with a pool, deck, and of course the buildings' signature water canal.



INTERIOR LANDSCAPING

Inside the landscaping continues and seamlessly integrates with the exterior landscaping. The interior landscaping serves to add variation to the inside of the building as well as divide the usable area of the first floor into different zones/areas.



THE WATER CANAL

The water canal is a specially designed element of the project that seemingly brings the water of the sea around and into the building. The water not only surrounds but also enters the building.





## PROJECT SUMMARY

This master plan was created as a response to a prompt to create a neighborhood that achieves as many Estidama Pearl Points as possible. The site is in western Al Ain and is bordered by a small pond, Al Ain Wadi, and an existing residential compound.

### ACHIEVING POINTS

To achieve the points, the Estidama Manual by the Urban Planning Council was studied and, where possible, the requirements were applied to the master plan of the site. A total of 14 points were achieved.



# ESTIDAMA PEARLS ACHIEVED



RE-1  
COMMUNITY STRATEGIES FOR PASSIVE COOLING

RE-1  
COMMUNITY STRATEGIES FOR PASSIVE COOLING

LC-2  
NEIGHBORHOOD CONNECTIVITY

LC-3  
OPEN SPACE NETWORK

LC-6  
COMMUNITY WALKABILITY

LC-8  
TRAVEL PLAN

**ALIGNMENT OF STREETS(1PT)**  
Streets are aligned within 15 degrees of the prevailing wind direction

**ALIGNMENT OF PARKS(1PT)**  
Open spaces and corridors run parallel to the prevailing wind direction

**STAGGERED BUILDING MASSING(1PT)**  
Staggered building prevent wind flow from becoming stagnant

**LANDSCAPED SITE PERIMETER(1PT)**  
90% of the perimeter of the development is bordered by greenery with the prevailing wind side receiving almost 100% greenery

**INCREASED VEHICLE CONNECTIVITY**  
Vehicle Connectivity to surroundings is increased with the addition of new collector roads

**INCREASED BICYCLE CONNECTIVITY**  
Bike Lanes connect to existing network and expand it

**EASE OF ACCESS (1PT)**  
At least 70% of residents are within 350m of a 1Ha public space

**PURPOSES (1PT)**  
Each Space will serve a unique function

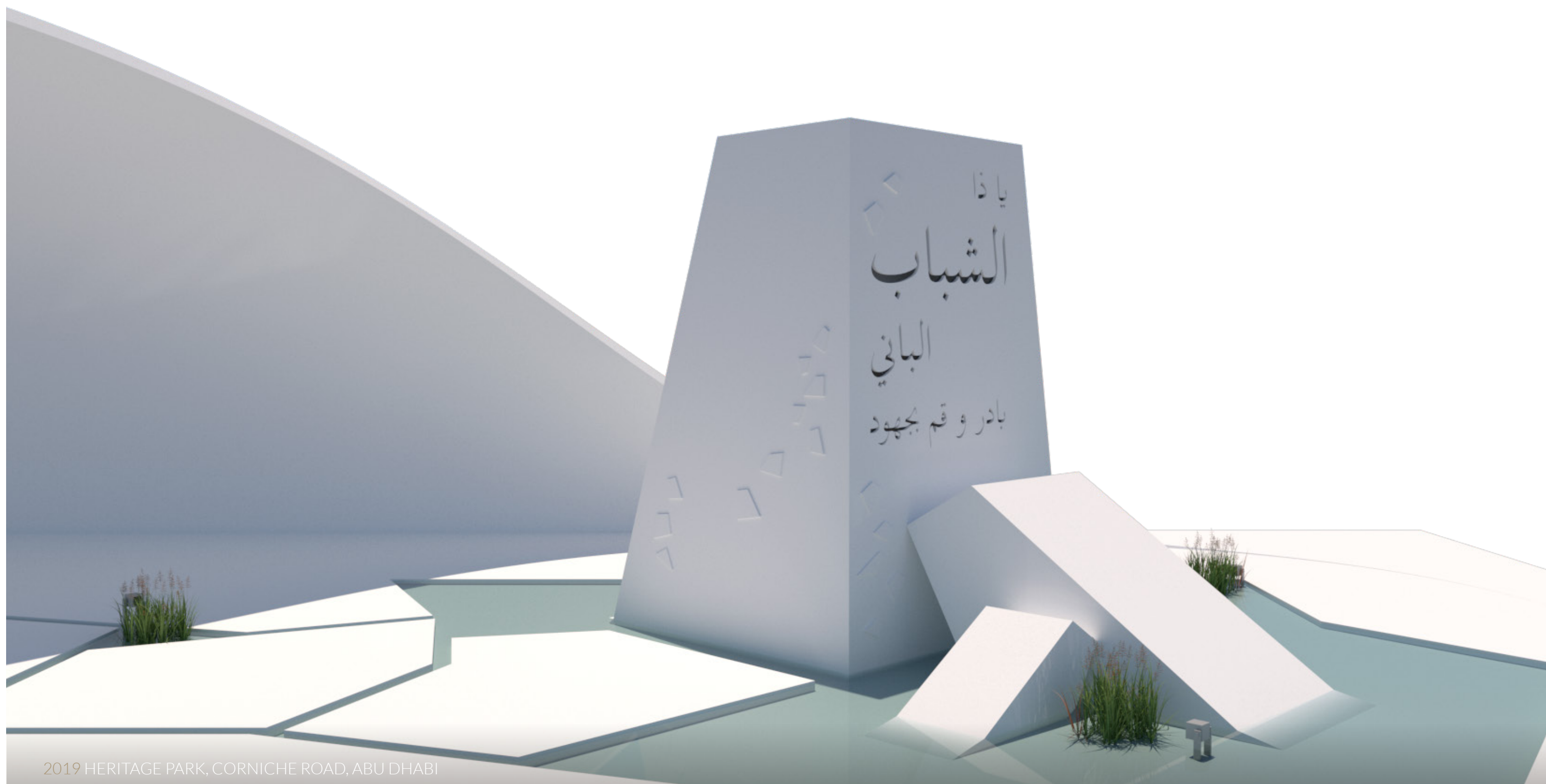
**DIRECT ROUTE INDEX (1PT)**  
All facilities of the development will be connected by pedestrian routes with a direct route index of less than 1.5

**SHADING (1PT)**  
There will be 100% shaded areas at least every 350m

**REDUCTION OF CAR JOURNEYS(1PT)**  
A combination of the reduction of roads and the alignment of the streets and public spaces with the prevailing wind direction will promote walking and bicycling over the use of cars

DESIGN STUDIO COMPETITION TECHNICAL FABRICATION RESEARCH

# COMPETITION



2019 HERITAGE PARK, CORNICHE ROAD, ABU DHABI

## ABU DHABI YOUTH HUB EXTERNAL PAVILION



## CONCEPT AND BRIEF

### THE COMPETITION

The brief provided by the Abu Dhabi Youth Hub called for:

- A structure inspired by the phrase " الشباب الباني ", from the poem of the Late Sheikh Zayed Bin Sultan Al Nahyan. The material of the structure to be durable to withstand the harsh weather conditions.
- Lighting to be considered; as the structure must be visible and lit at night time.
- Participants to produce plans, sections, elevations, and 3D renders.

The winning design was intended to be constructed and installed at the Abu Dhabi Youth Hub front/main entrance area. However, limiting factors halted the project as shown here. A

different design was conceived by Farasat Mirza and Rashed Al Mazrouei which was built and sits at the entrance of the Abu Dhabi Youth Hub.

### OUR INSPIRATION

The verse: 'معلم ثقافته و علم و إتقان' from Sheikh Zayed's poem, ' الشباب الباني' was the main inspiration behind the design of our pavilion. The design consists of three main concrete blocks. The large, 3 meter tall block imitates a book, representing knowledge and signifies Abu Dhabi Youth Hub as a center for the exchange of ideas.

The two smaller blocks represent youth. These smaller blocks look to be leaning on the largest block, creating imagery of youth gaining knowledge from a book.

### EARLY SKETCH

The first idea in the thought process was to create a pavilion that is in high contrast in shape to the main building.

Our design mirrors the aesthetics of Abu Dhabi, taking inspiration from modern cultural sights in Abu Dhabi such as The Founder's Memorial, Wahat Al Karama, and Qaser al Hosn.

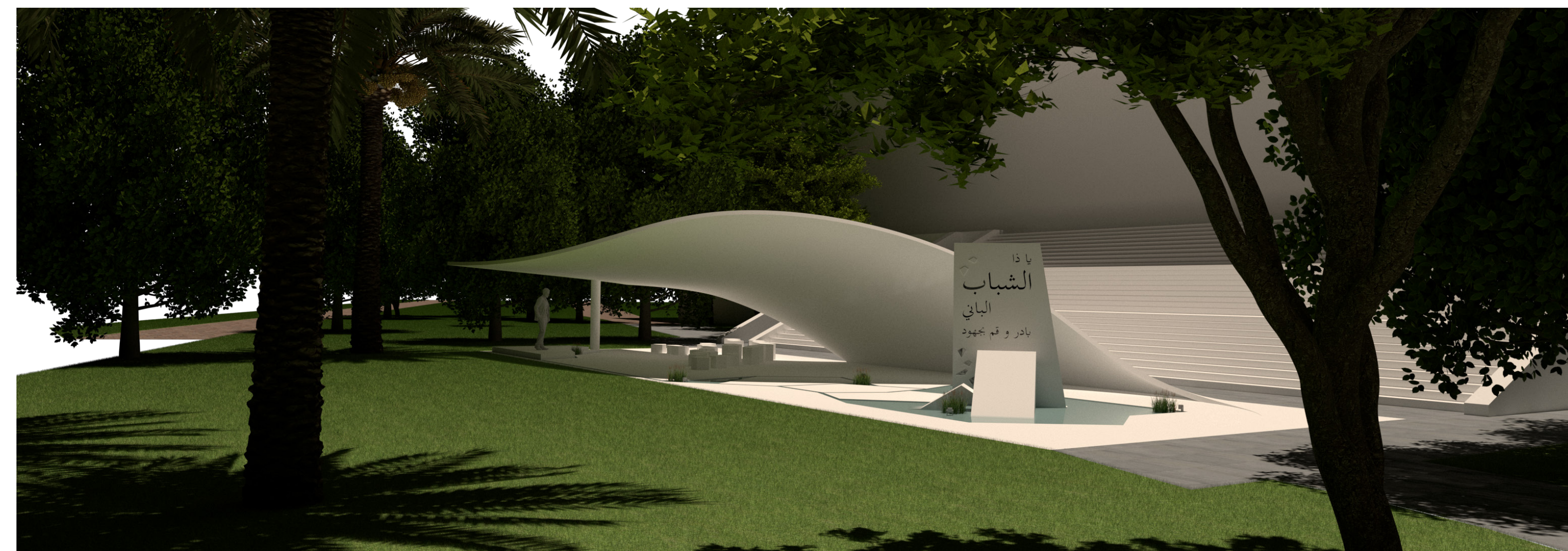
### INTEGRATING WITH THE SURROUNDINGS

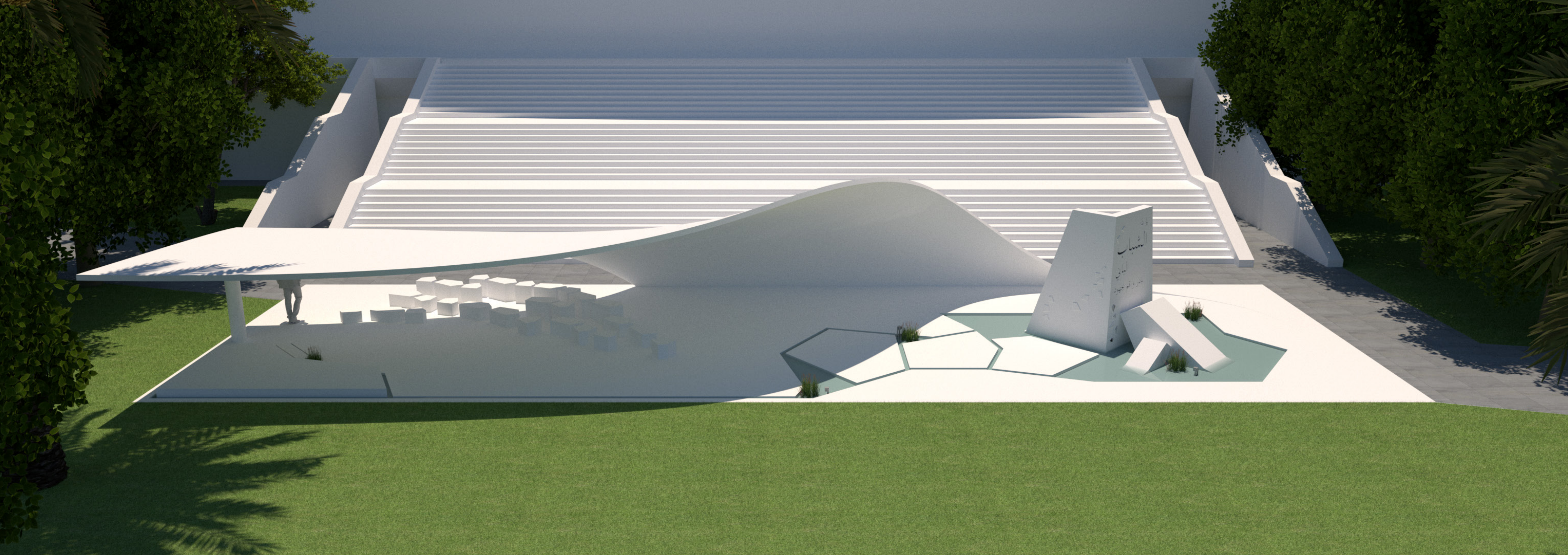
We wanted our pavilion to integrate with its surroundings, namely with the main Youth Hub building. The Youth Hub building has an organic shape inspired by the rear wing of an F1 race car. In order to make sure the pavilion isn't mistaken for a building of some other purpose, we decided to add a cantilevered concrete canopy that mirrors the design of the

main building. The combination of angular and organic design blended seamlessly together create for an overall striking, visually appealing and clean modern design.

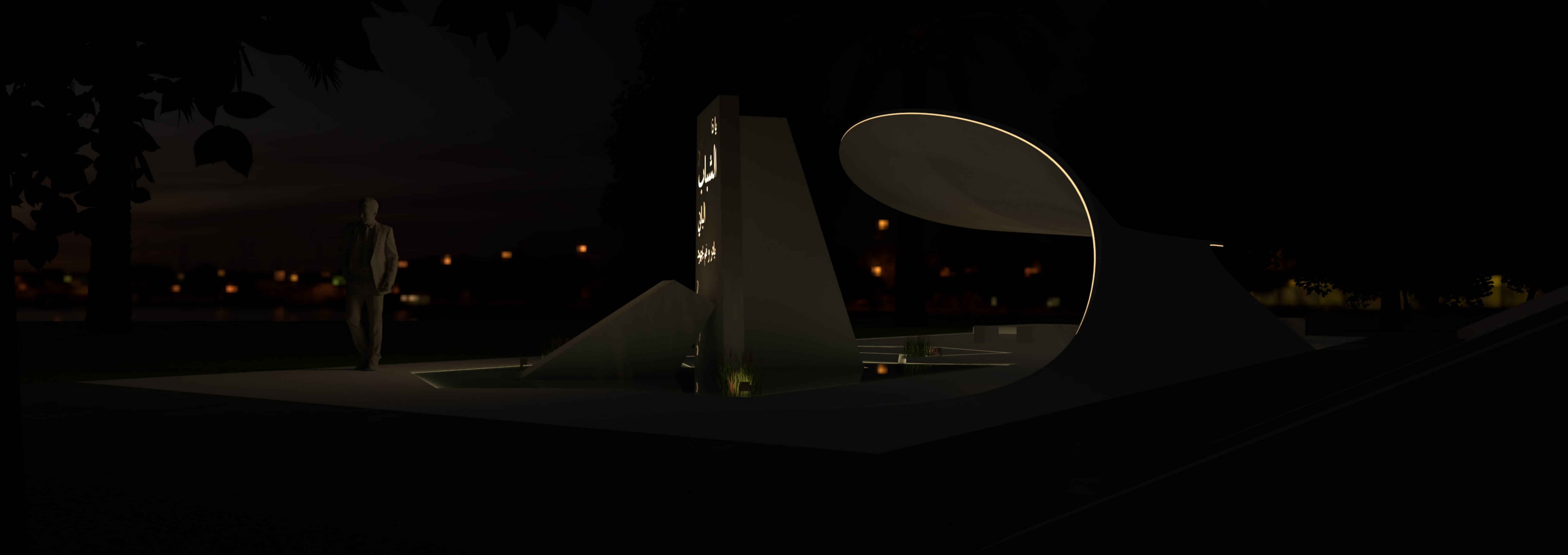
### PROVIDING ACCESS TO THE MAIN BUILDING

As our design progressed, an issue arose. Access to the main building was obscured by the pavilion's canopy/shading element. This meant that people would be inconvenienced, as they would have to walk to one side of the pavilion to enter and exit. The solution to this problem came in the form of another swooping line that cuts out part of the rear of the canopy. This line is an elegant solution to the problem and adds character to the overall structure.





بيت  
الشباب  
البي  
بني و تم تجهيزه





2018 MANARAT SADIYAAT, SADIYAAT ISLAND, ABU DHABI

# ABU DHABI ART PALM PAVILION



## CONCEPT AND BRIEF

The goal for the entry was to design and build the best and most meaningful pavilion for the Abu Dhabi Art Fair during the Year of Zayed.

### INSPIRATION

The Palm Pavilion takes inspiration from the palm tree. The palm tree in general has been very important throughout history, specifically, in the UAE.

"For us, the date palm is, and always has been, truly the tree of life. We have grown up with this remarkable species and its many products and find it impossible to imagine life without it. When we admire a date palm, we are looking at the foundations of our civilization and the sustaining force for countless generations." ~ Sheikh Zayed bin Sultan Al Nahyan

The Palm Pavilion was designed to directly reflect the huge importance the Palm tree has played in the history of the UAE.

### THE DESIGN

The Pavilion consists of four elements. The three palm inspired pillars, the ribbed side walls and roof, the glass curtain walls on the front and back and the round benches around the pavilion.

### THE PILLARS

The pillars take their shape from the trunk of a palm tree. The organic swooping design starts at the bottom on the floor and blends seamlessly with the roof lines. In addition, the pillars are divided into ribs to imitate the look of wooden veneer.

### THE WALLS AND ROOF

The design incorporates two types of wall. The first type is located on either side of the pavilion. These walls are a series of ribs and extend from the front to the back of the pavilion. The ribs are slanted and curve into the roof. Glass panels will be integrated into the ribs to isolate the interior from the exterior.

The second type of wall is used on the front and back of the pavilion. These curtain walls allow for wonderful views of the unique palm inspired pillars. They also allow visitors to look out into the beautiful landscaping of Manarat Al S'adiyaat.

The roof continues the theme of using ribbed elements. The ribs of the pillars and side walls blend in with the roof to create a flowing building profile. The ribs on the roof represent the leaves of the palm tree. The leaves (the roof) sprout from the tree trunk (the pillars) and curve down towards the ground.

The ribbed walls and roof allow light to filter into the pavilion creating a pattern of light throughout the building. They may also allow for natural ventilation if they aren't closed off by glass panels.

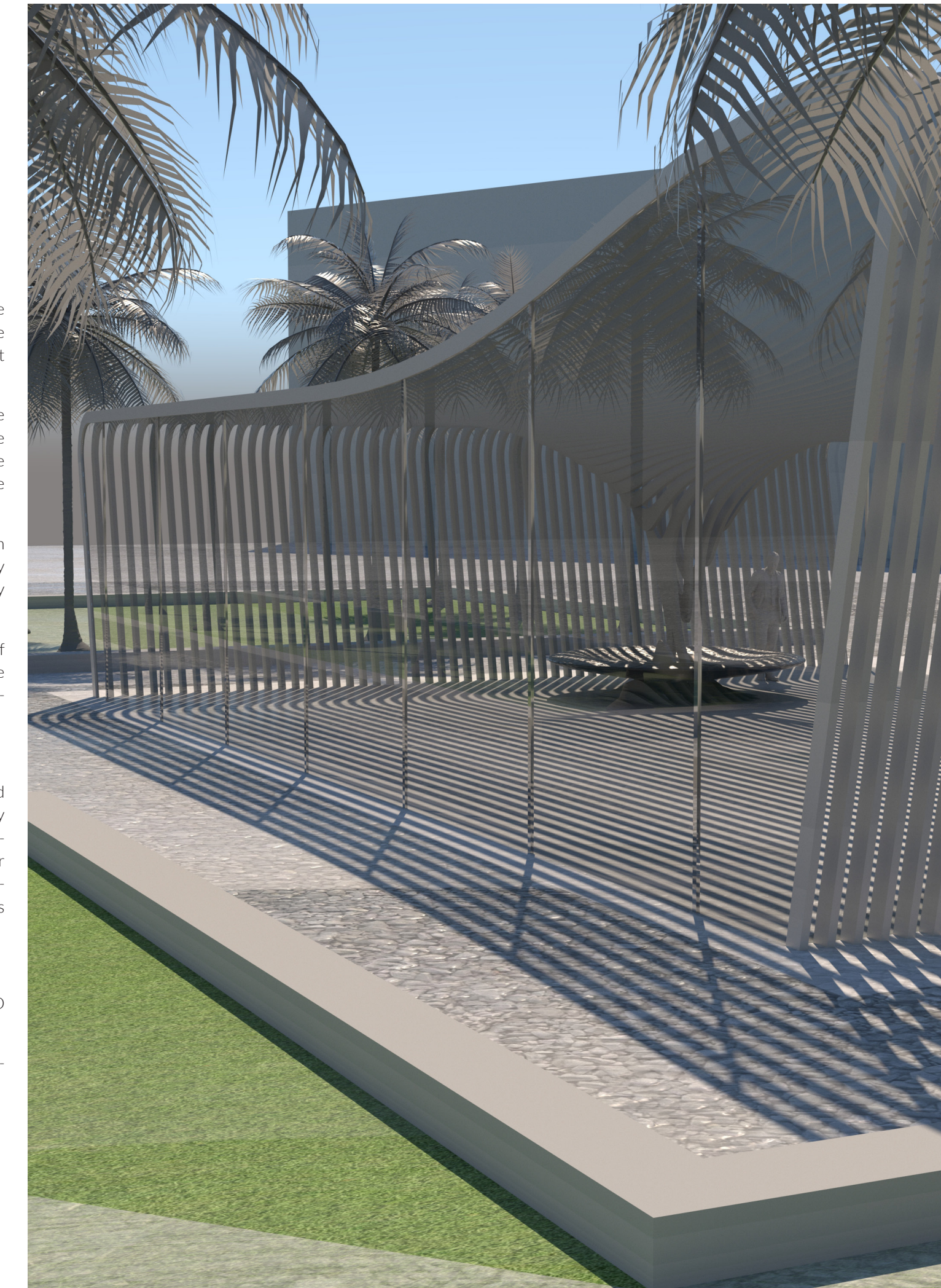
Each rib can be divided into multiple pieces and fabricated off site. The suggested material is steel or reinforced concrete. The fabricated pieces can then be transported and assembled on-site.

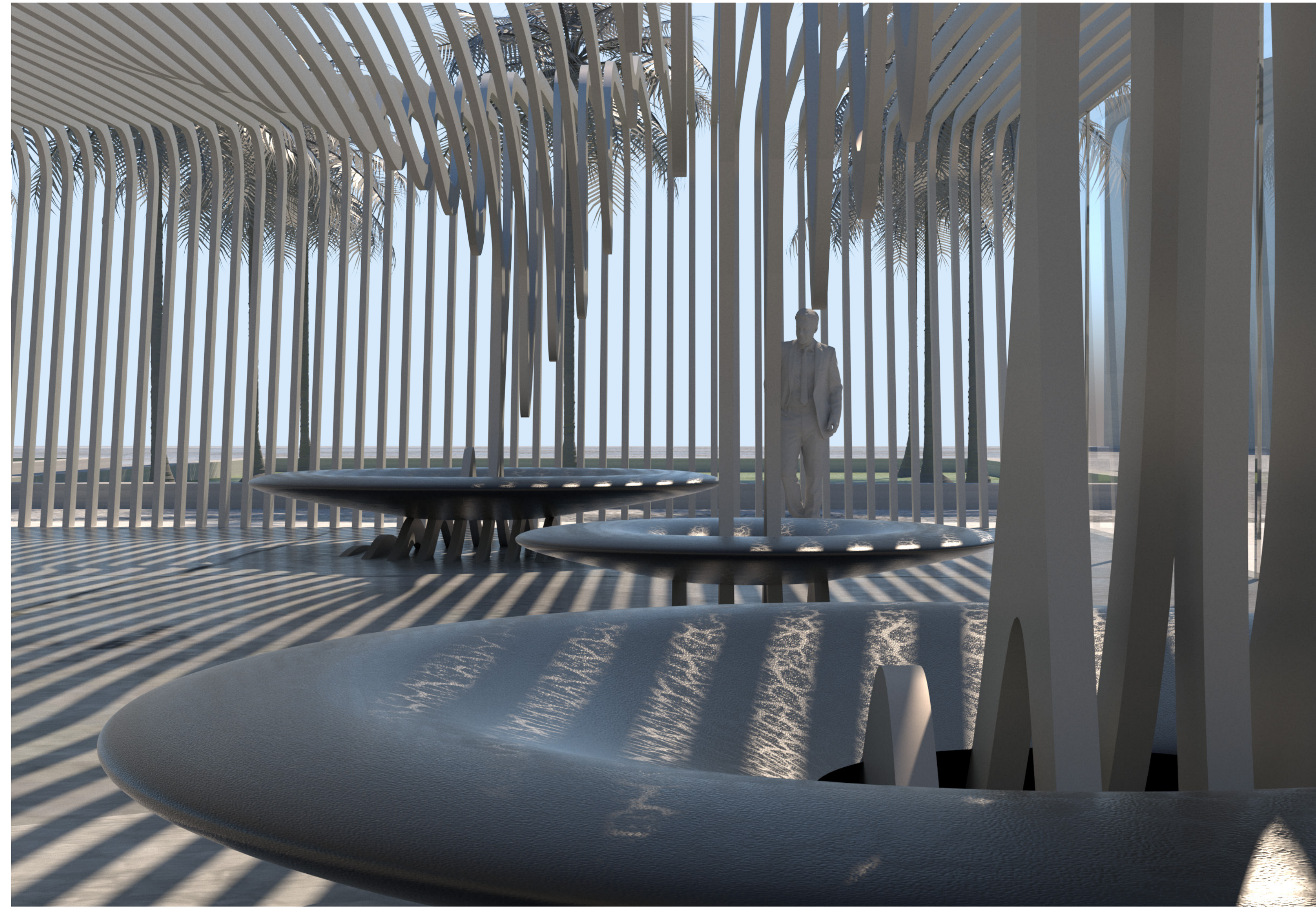
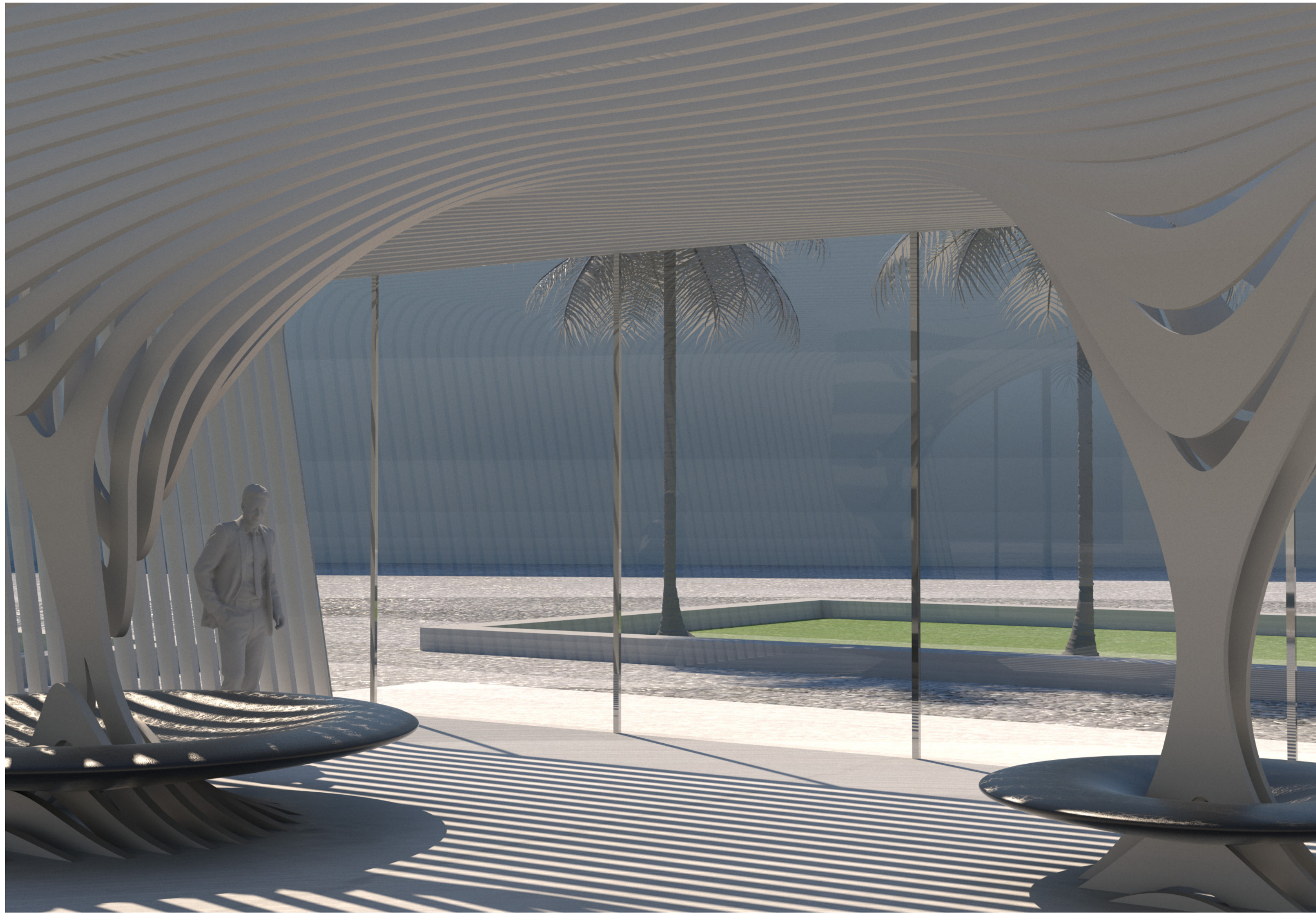
### FURNITURE

The round seating incorporated into this design are fitted around the pillars. They imitate vegetation that commonly grows around trees. The seating allows for intimate conversations between 2 people. They can also be used to seat larger groups of people when required from things like talks and presentations. The design of the seating can be replicated minus the pillar to seat more people when required.

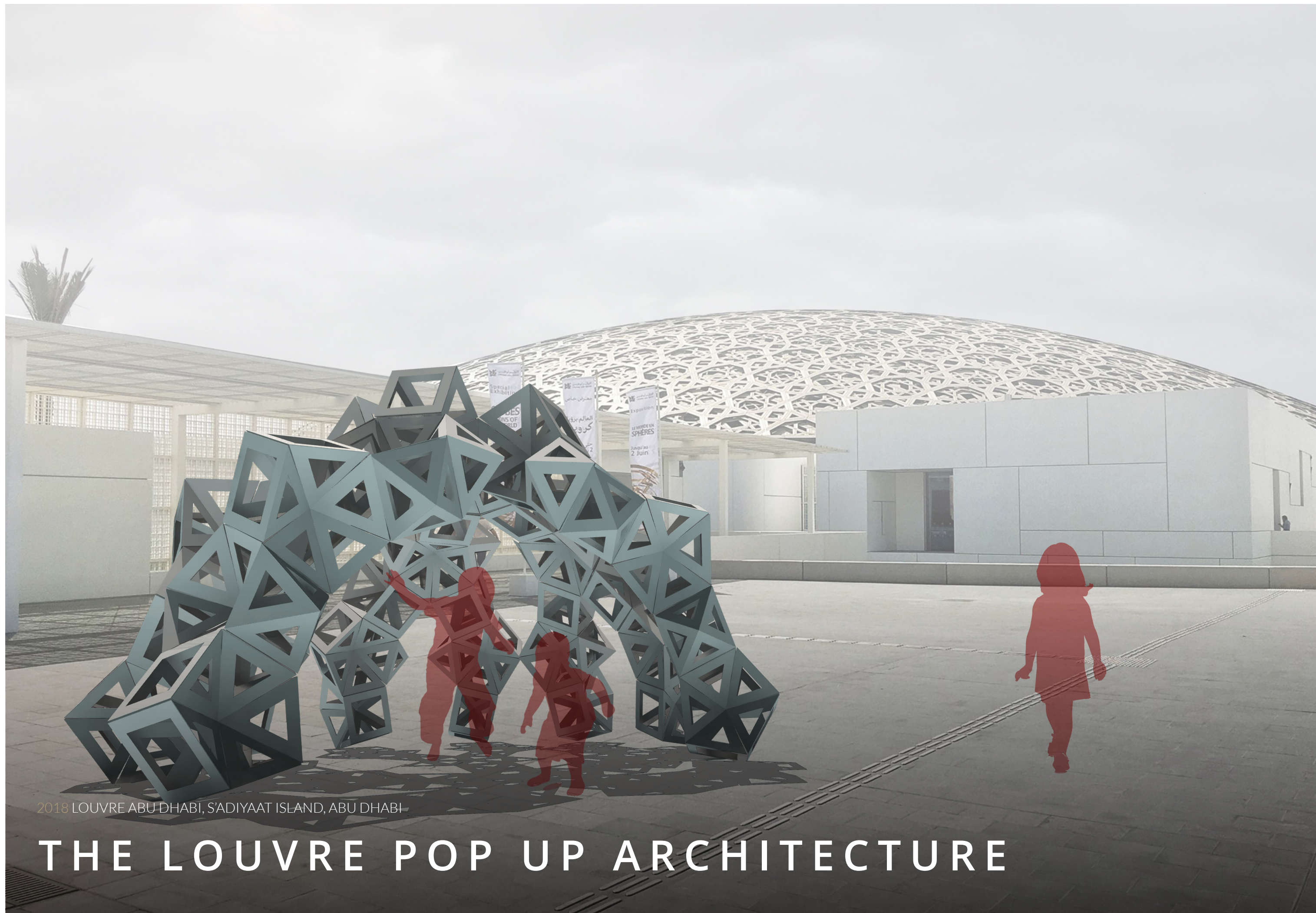
### OTHER DESIGN CONSIDERATIONS

- At night the pavilion will be lit up with a series of LED strips mounted to the bottom of the roof ribs.
- AC units can be placed in the empty space inside the pillars.









2018 LOUVRE ABU DHABI, SADIYAAT ISLAND, ABU DHABI

# THE LOUVRE POP UP ARCHITECTURE

## PROJECT OVERVIEW

### PROJECT SUMMARY

Students from all over the United Arab Emirates were invited by the Louvre Abu Dhabi in the winter of 2018 to participate in a Pop Up Architecture event.

Teams from Abu Dhabi University, The Canadian University of Dubai, UAE University and The American University of Sharjah participated.

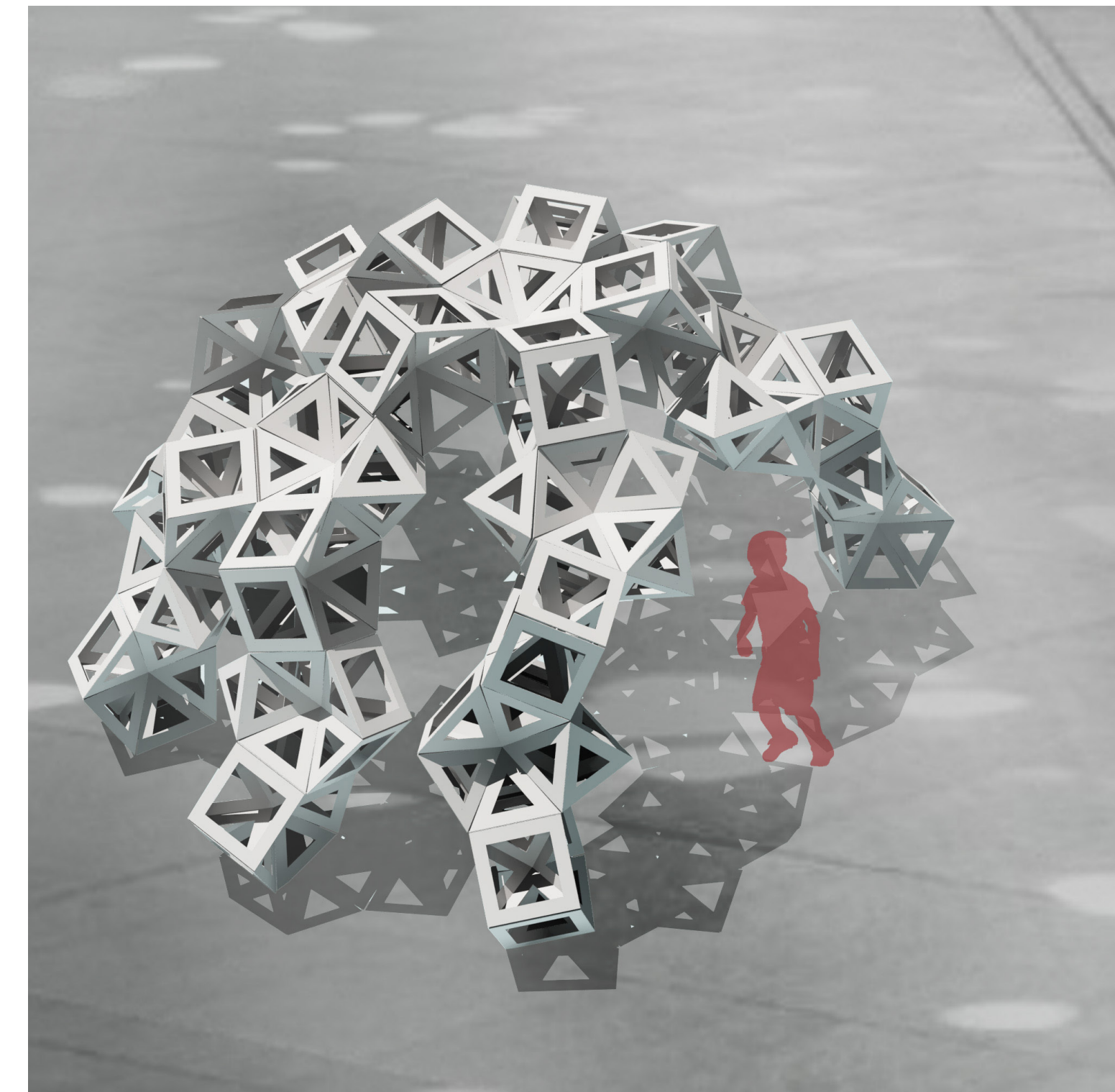
### THE RAIN OF LIGHT

In buildings, the phenomena of 'The Rain of Light' is when architectural elements are used to soften or diffuse direct sunlight. The elements used not only help insulate a space from the sun, but also create rays of light. The movement of the sun allows the light to dance with the shadows as they smoothly spread across the space.

### CONCEPT AND PURPOSE - A PLACE FOR CHILDREN

The structure attempts to break free from the massive and serious scale of the Louvre Abu Dhabi to create a less intimidating and more playful environment for children to come and express their creativity. The welcoming environment for children was achieved by lowering the maximum height of the structure to 1.5 meters, the ideal height for children.

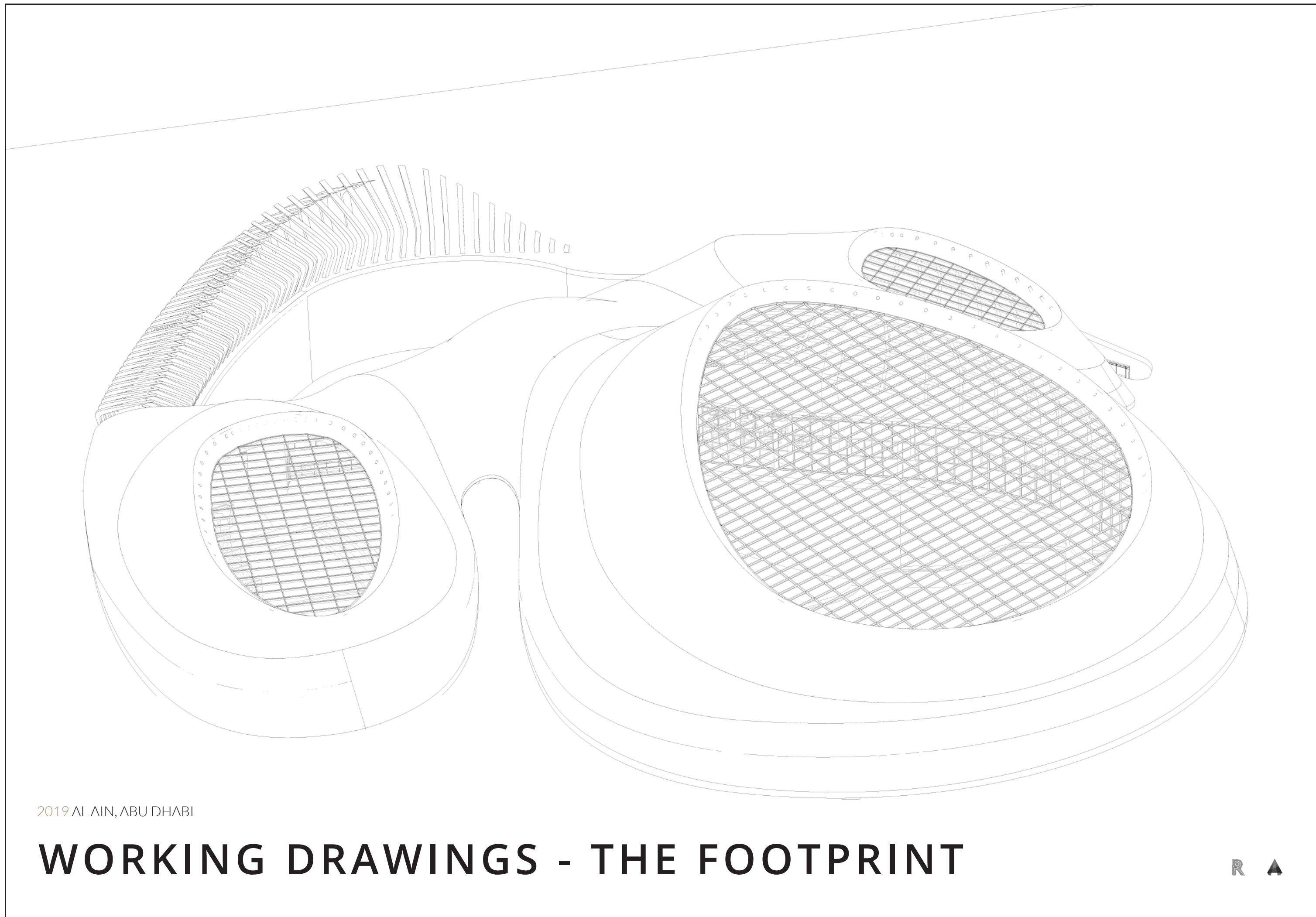
Farasat's contribution to the project included the compilation of assets and design of the presentation for the project proposal. He was also one of three speakers to present the project at the Louvre Abu Dhabi theatre to the museum staff and the other teams participating in the event.





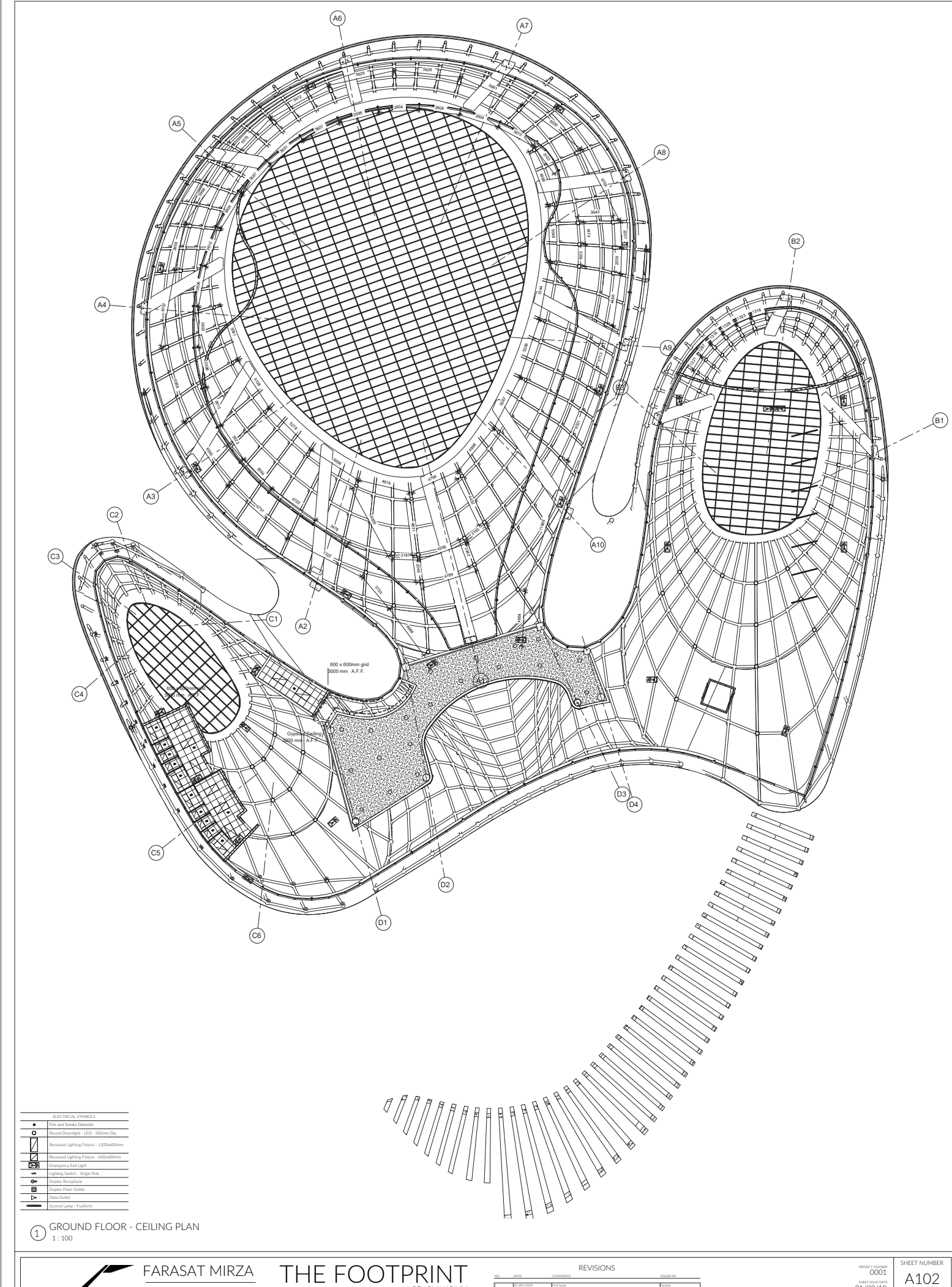
DESIGN STUDIO COMPETITION TECHNICAL FABRICATION RESEARCH

# TECHNICAL



2019 AL AIN, ABU DHABI

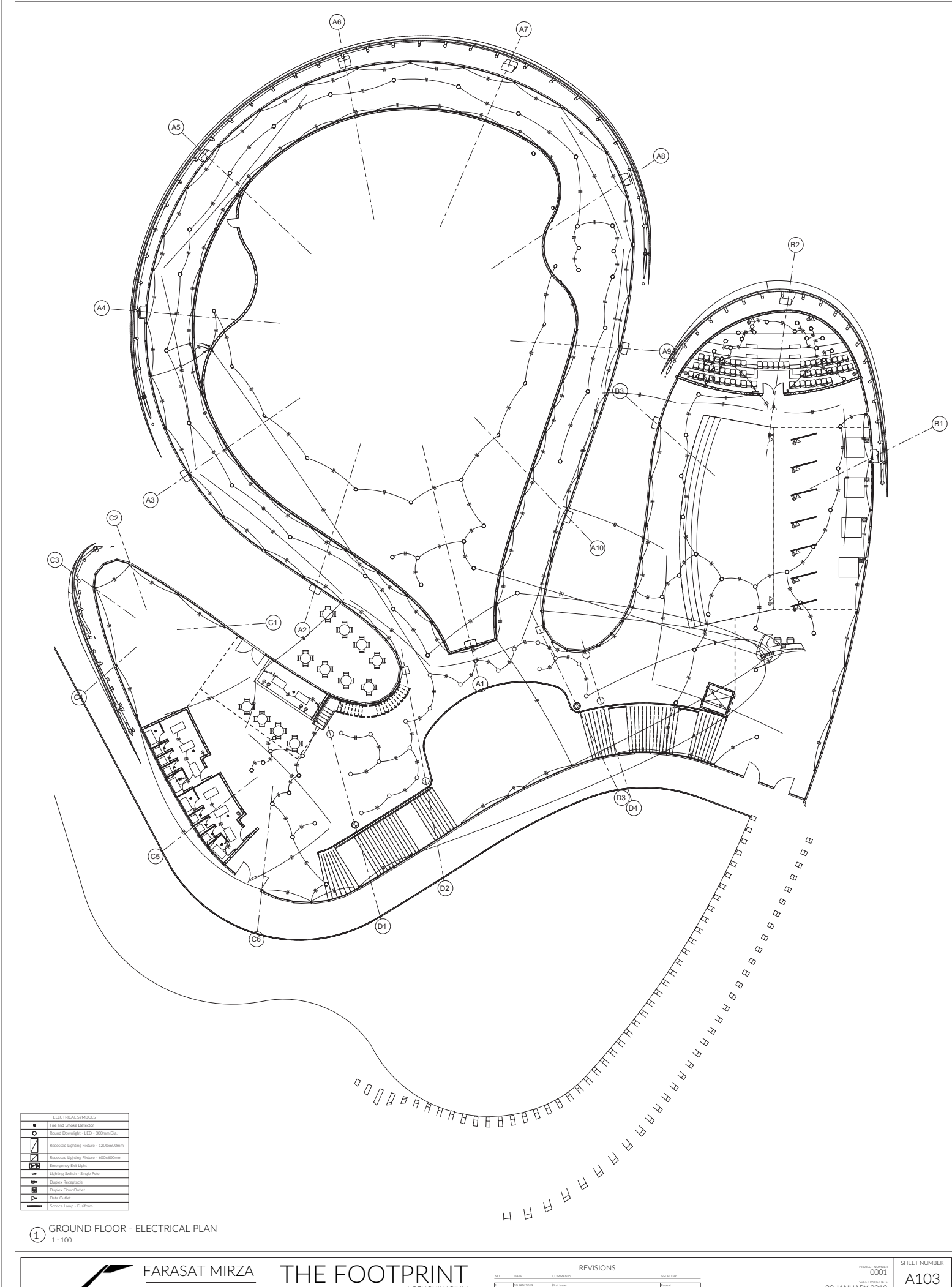
# WORKING DRAWINGS - THE FOOTPRINT



SYMBOLS	
[Symbol]	Structural Symbols
[Symbol]	Electrical Symbols
[Symbol]	Lighting Symbols
[Symbol]	Other Symbols

1 GROUND FLOOR - CEILING PLAN  
1:100

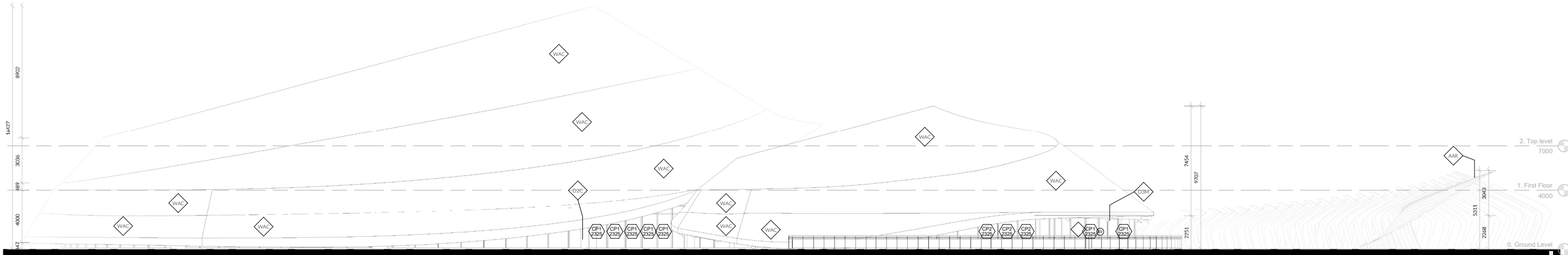
<b>FARASAT MIRZA</b> 23A CORNICHE TOWER, RIVA ALA, STREET AL MARAZAYA, ABU DHABI, UNITED ARAB EMIRATES	<b>THE FOOTPRINT</b> A PENGUMBARILUM	REVISIONS 	SHEET NUMBER <b>A102</b>	DRAWING SCALES 1:100
			20 JANUARY 2019 AL AIN ZOO, AL AIN, UNITED ARAB EMIRATES	0001 01/2019



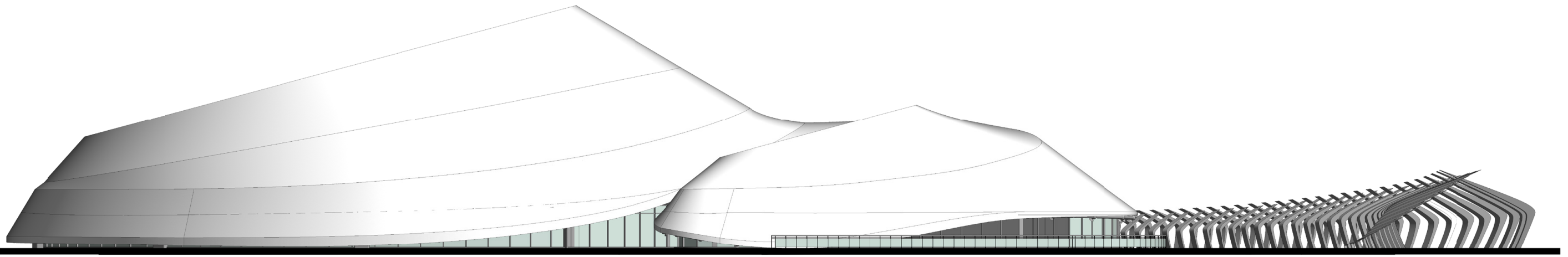
SYMBOLS	
[Symbol]	Electrical Symbols
[Symbol]	Lighting Symbols
[Symbol]	Other Symbols

1 GROUND FLOOR - ELECTRICAL PLAN  
1:100

<b>FARASAT MIRZA</b> 23A CORNICHE TOWER, RIVA ALA, STREET AL MARAZAYA, ABU DHABI, UNITED ARAB EMIRATES	<b>THE FOOTPRINT</b> A PENGUMBARILUM	REVISIONS 	SHEET NUMBER <b>A103</b>	DRAWING SCALES 1:100
			20 JANUARY 2019 AL AIN ZOO, AL AIN, UNITED ARAB EMIRATES	0001 01/2019



1 West  
1:100



2 West - Material Finishing  
1:100

ELEVATION SYMBOLS	
	Visible Elevation - White Aluminium Roof Cladding
	Down 1 - External/Concrete Column - Painted
	Down 2 - External/Concrete Column - Painted
	Down 3 - Steel Mesh
	Down 4 - Steel Mesh
	Wooded Aluminium Entrance Ribs
	300x300mm Roof Raylight System

SHEET NUMBER: 0001  
**A104-B**  
 DATE: 27 JANUARY 2019  
 PROJECT: AL-AIN ZOO, AL-AIN, UNITED ARAB EMIRATES  
 DRAWING SCALES: 1:100  
 REVISIONS: [REVISIONS TRACK]  
**FARASAT MIRZA THE FOOTPRINT**  
 A PENGUINARIUM  
 23A CORNICHE TOWER, EMALIFA, STREET, AL MARAAZHA, ABU DHABI, UNITED ARAB EMIRATES  
 West Elevation

Curtain Panel Type	Quantity	Family and Type	Height	Width	Glazing Type	Frame Finish	Comments
M1	1	System Panel_Glass	2500	1500	Clear	Black Anodized Aluminium	
M2	1	System Panel_Glass	2400	850	Clear	Black Anodized Aluminium	
M3	1	System Panel_Glass	2400	850	Clear	Black Anodized Aluminium	
M4	1	System Panel_Glass	2400	1140	Clear	Black Anodized Aluminium	
M5	1	System Panel_Glass	2400	1120	Clear	Black Anodized Aluminium	
M6	1	System Panel_Glass	2400	1120	Clear	Black Anodized Aluminium	
M7	1	System Panel_Glass	2400	1081	Clear	Black Anodized Aluminium	
M8	1	System Panel_Glass	2400	1075	Clear	Black Anodized Aluminium	
M9	1	System Panel_Glass	2400	1025	Clear	Black Anodized Aluminium	
M10	1	System Panel_Glass	2400	1009	Clear	Black Anodized Aluminium	
M11	1	System Panel_Glass	2400	980	Clear	Black Anodized Aluminium	
M12	1	System Panel_Glass	2400	967	Clear	Black Anodized Aluminium	
M13	1	System Panel_Glass	2400	958	Clear	Black Anodized Aluminium	
M14	1	System Panel_Glass	2400	950	Clear	Black Anodized Aluminium	
M15	1	System Panel_Glass	2400	889	Clear	Black Anodized Aluminium	
M16	1	System Panel_Glass	2400	884	Clear	Black Anodized Aluminium	
M17	1	System Panel_Glass	2400	863	Clear	Black Anodized Aluminium	
M18	1	System Panel_Glass	2400	862	Clear	Black Anodized Aluminium	
M19	1	System Panel_Glass	2400	800	Clear	Black Anodized Aluminium	
M20	1	System Panel_Glass	2325	1100	Clear	Black Anodized Aluminium	
M21	1	System Panel_Glass	2325	1050	Clear	Black Anodized Aluminium	
M22	1	System Panel_Glass	2325	1025	Clear	Black Anodized Aluminium	
M23	1	System Panel_Glass	2325	1009	Clear	Black Anodized Aluminium	
M24	1	System Panel_Glass	2325	980	Clear	Black Anodized Aluminium	
M25	1	System Panel_Glass	2325	967	Clear	Black Anodized Aluminium	
M26	1	System Panel_Glass	2325	958	Clear	Black Anodized Aluminium	
M27	1	System Panel_Glass	2325	950	Clear	Black Anodized Aluminium	
M28	1	System Panel_Glass	2325	889	Clear	Black Anodized Aluminium	
M29	1	System Panel_Glass	2325	884	Clear	Black Anodized Aluminium	
M30	1	System Panel_Glass	2325	863	Clear	Black Anodized Aluminium	
M31	1	System Panel_Glass	2325	862	Clear	Black Anodized Aluminium	
M32	1	System Panel_Glass	2325	800	Clear	Black Anodized Aluminium	
M33	1	System Panel_Glass	2325	1000	Clear	Black Anodized Aluminium	
M34	1	System Panel_Glass	2325	975	Clear	Black Anodized Aluminium	
M35	1	System Panel_Glass	2325	950	Clear	Black Anodized Aluminium	
M36	1	System Panel_Glass	2325	930	Clear	Black Anodized Aluminium	
M37	1	System Panel_Glass	2325	915	Clear	Black Anodized Aluminium	
M38	1	System Panel_Glass	2325	900	Clear	Black Anodized Aluminium	
M39	1	System Panel_Glass	2325	885	Clear	Black Anodized Aluminium	
M40	1	System Panel_Glass	2325	870	Clear	Black Anodized Aluminium	
M41	1	System Panel_Glass	2325	855	Clear	Black Anodized Aluminium	
M42	1	System Panel_Glass	2325	840	Clear	Black Anodized Aluminium	
M43	1	System Panel_Glass	2325	825	Clear	Black Anodized Aluminium	
M44	1	System Panel_Glass	2325	810	Clear	Black Anodized Aluminium	
M45	1	System Panel_Glass	2325	795	Clear	Black Anodized Aluminium	
M46	1	System Panel_Glass	2325	780	Clear	Black Anodized Aluminium	
M47	1	System Panel_Glass	2325	765	Clear	Black Anodized Aluminium	
M48	1	System Panel_Glass	2325	750	Clear	Black Anodized Aluminium	
M49	1	System Panel_Glass	2325	735	Clear	Black Anodized Aluminium	
M50	1	System Panel_Glass	2325	720	Clear	Black Anodized Aluminium	
M51	1	System Panel_Glass	2325	705	Clear	Black Anodized Aluminium	
M52	1	System Panel_Glass	2325	690	Clear	Black Anodized Aluminium	
M53	1	System Panel_Glass	2325	675	Clear	Black Anodized Aluminium	
M54	1	System Panel_Glass	2325	660	Clear	Black Anodized Aluminium	
M55	1	System Panel_Glass	2325	645	Clear	Black Anodized Aluminium	
M56	1	System Panel_Glass	2325	630	Clear	Black Anodized Aluminium	
M57	1	System Panel_Glass	2325	615	Clear	Black Anodized Aluminium	
M58	1	System Panel_Glass	2325	600	Clear	Black Anodized Aluminium	
M59	1	System Panel_Glass	2325	585	Clear	Black Anodized Aluminium	
M60	1	System Panel_Glass	2325	570	Clear	Black Anodized Aluminium	
M61	1	System Panel_Glass	2325	555	Clear	Black Anodized Aluminium	
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M71	1	System Panel_Glass	2325	405	Clear	Black Anodized Aluminium	
M72	1	System Panel_Glass	2325	390	Clear	Black Anodized Aluminium	
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M76	1	System Panel_Glass	2325	330	Clear	Black Anodized Aluminium	
M77	1	System Panel_Glass	2325	315	Clear	Black Anodized Aluminium	
M78	1	System Panel_Glass	2325	300	Clear	Black Anodized Aluminium	
M79	1	System Panel_Glass	2325	285	Clear	Black Anodized Aluminium	
M80	1	System Panel_Glass	2325	270	Clear	Black Anodized Aluminium	
M81	1	System Panel_Glass	2325	255	Clear	Black Anodized Aluminium	
M82	1	System Panel_Glass	2325	240	Clear	Black Anodized Aluminium	
M83	1	System Panel_Glass	2325	225	Clear	Black Anodized Aluminium	
M84	1	System Panel_Glass	2325	210	Clear	Black Anodized Aluminium	
M85	1	System Panel_Glass	2325	195	Clear	Black Anodized Aluminium	
M86	1	System Panel_Glass	2325	180	Clear	Black Anodized Aluminium	
M87	1	System Panel_Glass	2325	165	Clear	Black Anodized Aluminium	
M88	1	System Panel_Glass	2325	150	Clear	Black Anodized Aluminium	
M89	1	System Panel_Glass	2325	135	Clear	Black Anodized Aluminium	
M90	1	System Panel_Glass	2325	120	Clear	Black Anodized Aluminium	
M91	1	System Panel_Glass	2325	105	Clear	Black Anodized Aluminium	
M92	1	System Panel_Glass	2325	90	Clear	Black Anodized Aluminium	
M93	1	System Panel_Glass	2325	75	Clear	Black Anodized Aluminium	
M94	1	System Panel_Glass	2325	60	Clear	Black Anodized Aluminium	
M95	1	System Panel_Glass	2325	45	Clear	Black Anodized Aluminium	
M96	1	System Panel_Glass	2325	30	Clear	Black Anodized Aluminium	
M97	1	System Panel_Glass	2325	15	Clear	Black Anodized Aluminium	
M98	1	System Panel_Glass	2325	0	Clear	Black Anodized Aluminium	
M99	1	System Panel_Glass	2325	0	Clear	Black Anodized Aluminium	
M100	1	System Panel_Glass	2325	0	Clear	Black Anodized Aluminium	

11 Curtain Panels - Ground Floor Key Plan  
1:200

12 Double Flush - 1800 x 2100  
1:200

13 Single Flush Wood Panel Door 800 x 2100  
1:200

14 Single Flush Wood Panel Door 650 x 2000  
1:200

15 Doors - Ground Floor Key Plan  
1:200

Door Schedule		Type Mark	Quantity	Width	Height	Thickness	Door Material	Frame Material	Finish	Hardware	Thickness Group	Comments
M1	Door-Curtain Wall-Single Glass	D1	2	1501	2175	25	Glass	Aluminium	Black Anodized Aluminium	Lockset	1	
M2	Door-Curtain Wall-Double Storefront	D2	2	2400	2400	25	Glass	Aluminium	Black Anodized Aluminium	Lockset	2	
M3	Door-Curtain Wall-Double Storefront	D3	2	2400	2100	25	Glass	Aluminium	Black Anodized Aluminium	Lockset	2	
M4	Door-Passage Double Flush - 1800 x 2100mm	D4	4	1800	2100	45	Wood	Wood	Stony Wood	Lockset	3	
M5	Door-Interior Single Flush - Panel Wood 800 x 2100	D5	4	800	2100	35	Wood	Wood	Stony Wood	Lockset	4	
M6	Door-Interior Single Flush - Panel Wood 650 x 2000	D6	4	650	2000	35	Wood	Wood	Stony Wood	Lockset	4	

15 Curtain Wall - Single Glass Door  
1:200

16 Curtain Wall - Double Storefront Door  
1:200

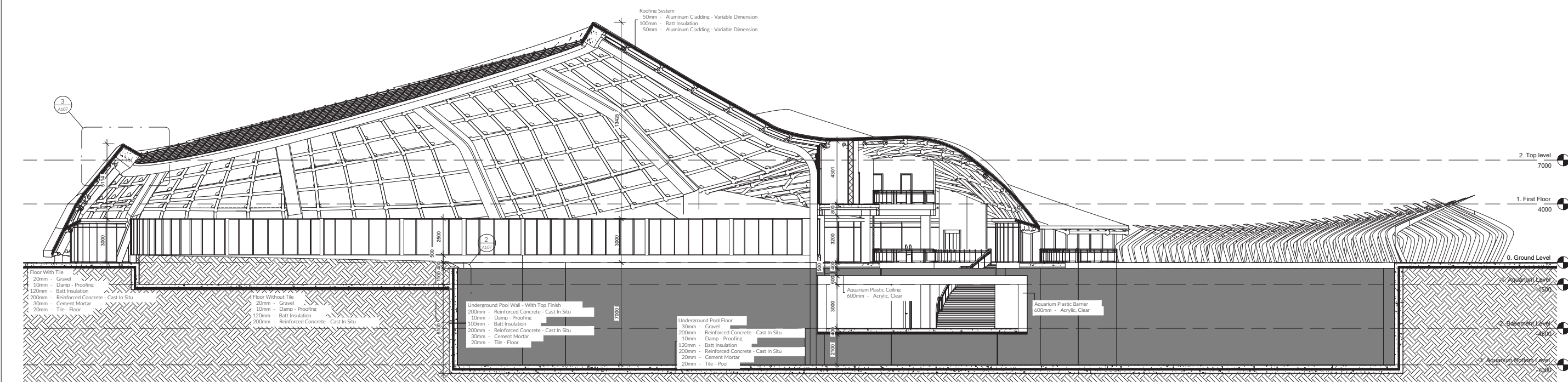
17 Double Flush - 1800 x 2100  
1:200

18 Single Flush Wood Panel Door 800 x 2100  
1:200

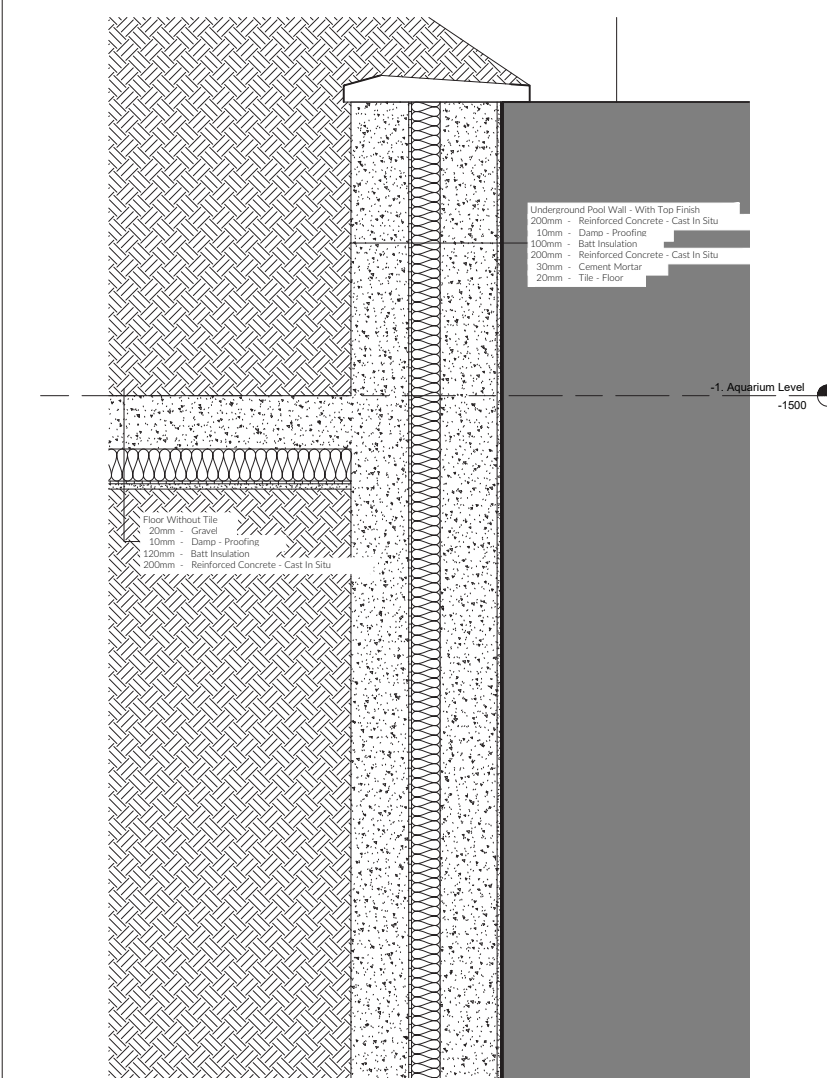
19 Single Flush Wood Panel Door 650 x 2000  
1:200

20 Doors - Ground Floor Key Plan  
1:200

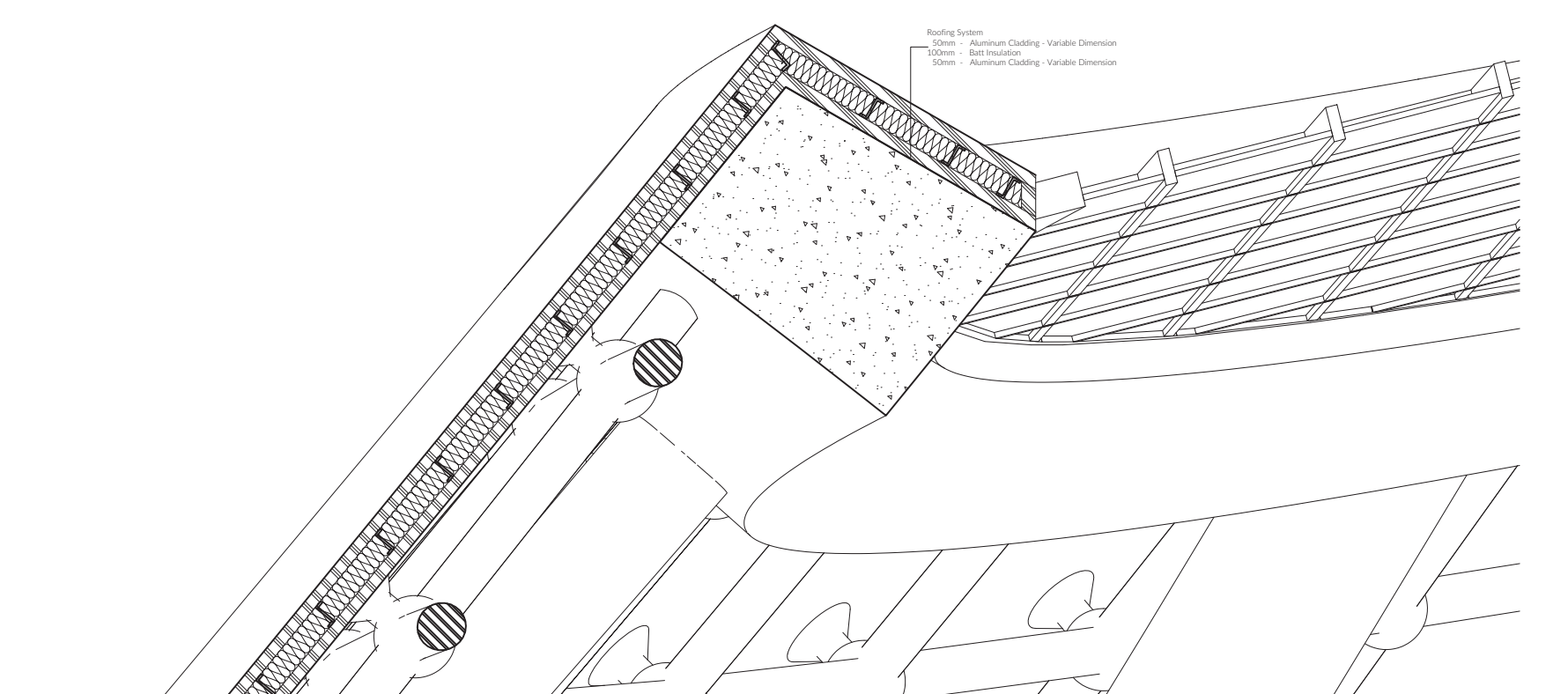
Door Schedule		Type Mark	Quantity	Width	Height	Thickness	Door Material	Frame Material	Finish	Hardware	Thickness Group	Comments
M1	Door-Curtain Wall-Single Glass	D1	2	1501	2175	25	Glass	Aluminium	Black Anodized Aluminium	Lockset	1	
M2	Door-Curtain Wall-Double Storefront	D2	2	2400	2400	25	Glass	Aluminium	Black Anodized Aluminium	Lockset	2	
M3	Door-Curtain Wall-Double Storefront	D3	2	2400	2100	25	Glass	Aluminium	Black Anodized Aluminium	Lockset	2	
M4	Door-Passage Double Flush - 1800 x 2100mm	D4	4	1800	2100	45	Wood	Wood	Stony Wood	Lockset	3	
M5	Door-Interior Single Flush - Panel Wood 800 x 2100	D5	4	800	2100	35	Wood	Wood	Stony Wood	Lockset	4	
M6	Door-Interior Single Flush - Panel Wood 650 x 2000	D6	4	650	2000	35	Wood	Wood	Stony Wood	Lockset	4	



1 Section 1  
1:100



2 Section 1 - Callout 1 - Pool Wall Detail  
1:10



3 Section 1 - Callout 2 - Roof Detail  
1:10

SHEET NUMBER  
**A107**

PROJECT NUMBER  
0001

DATE  
10 FEBRUARY 2019

PROJECT LOCATION  
AL AIN ZOO, AL AIN, UNITED ARAB EMIRATES

DRAWING SCALES  
As indicated

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REVISIONS

NO.	DATE	DESCRIPTION

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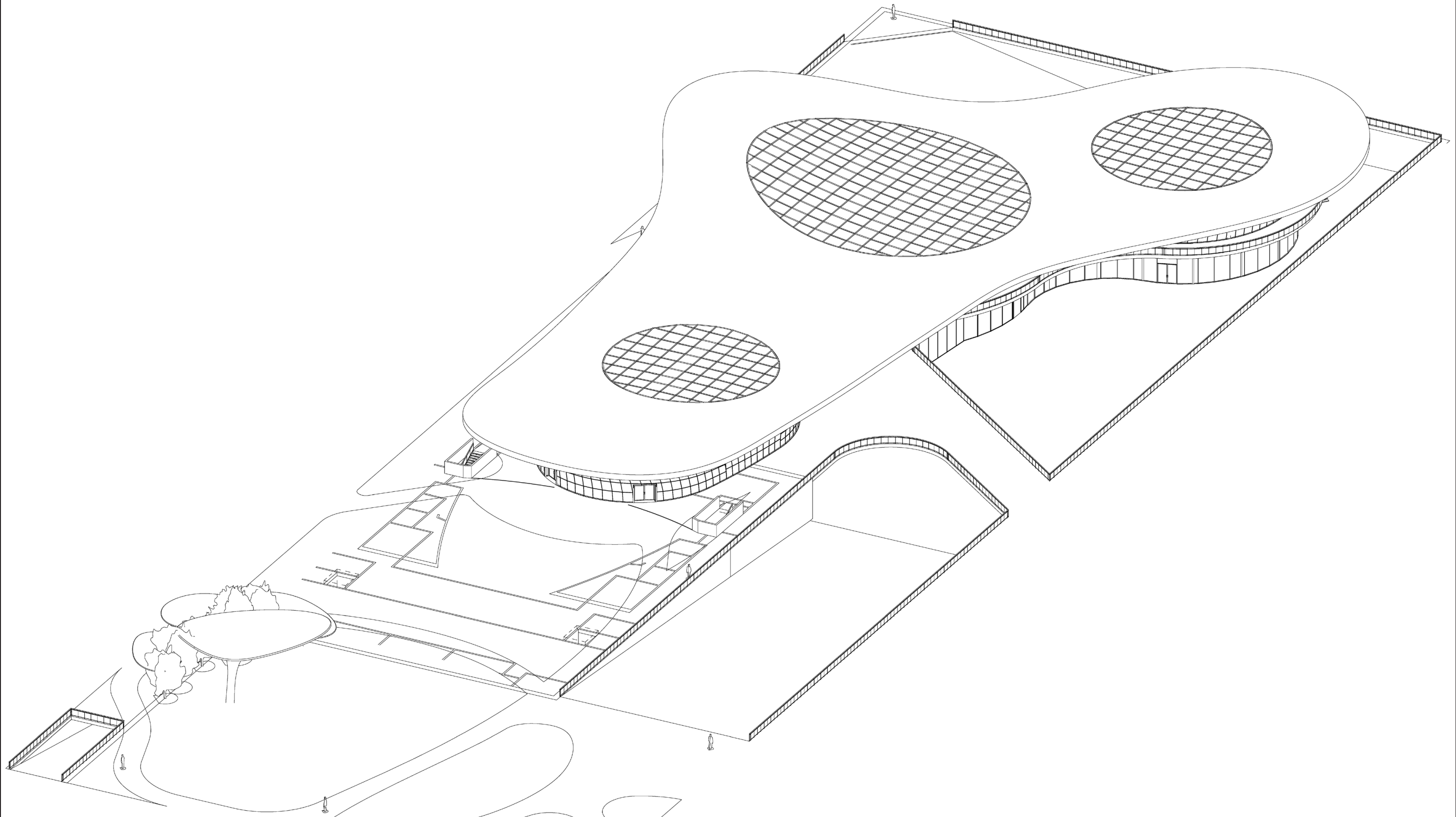
10 METERS

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FARASAT MIRZA THE FOOTPRINT  
A PENGUINARIUM

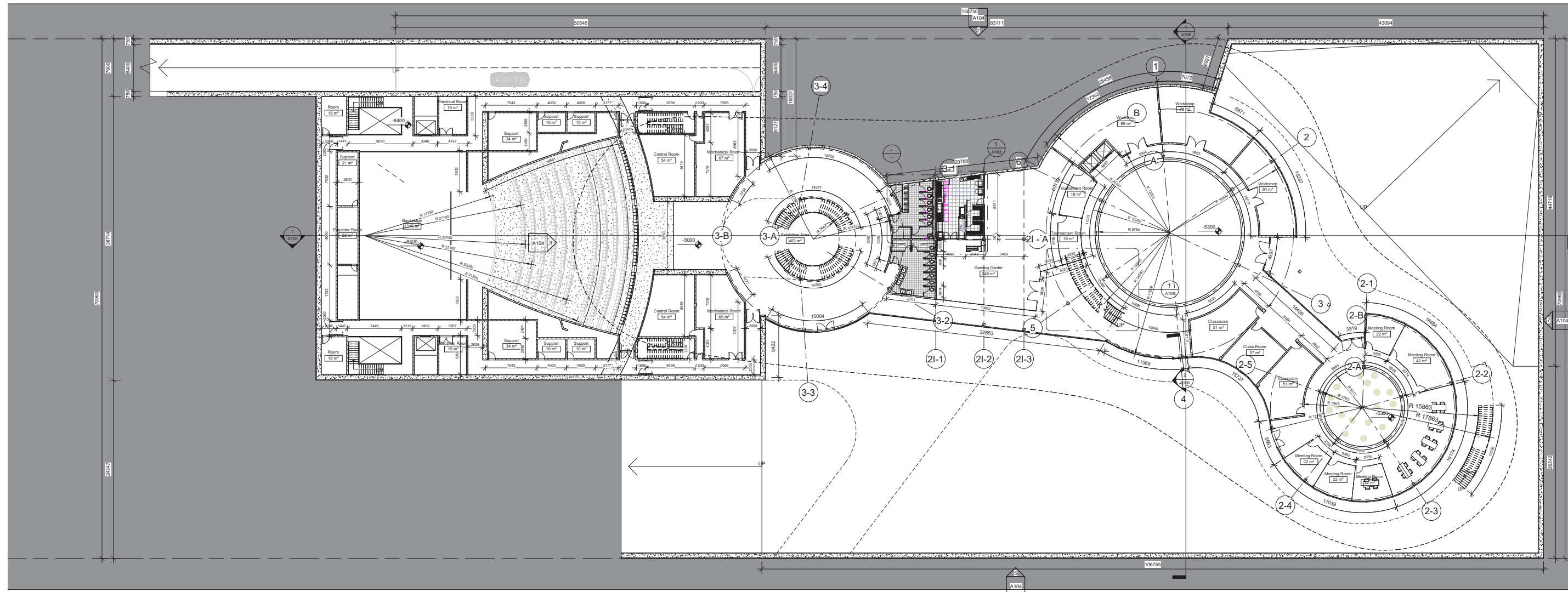
22A CORNICHE TOWER, KHALIFA STREET, AL MARRAZIAH, ABU DHABI, UNITED ARAB EMIRATES

SHEET TITLE  
SECTION 1



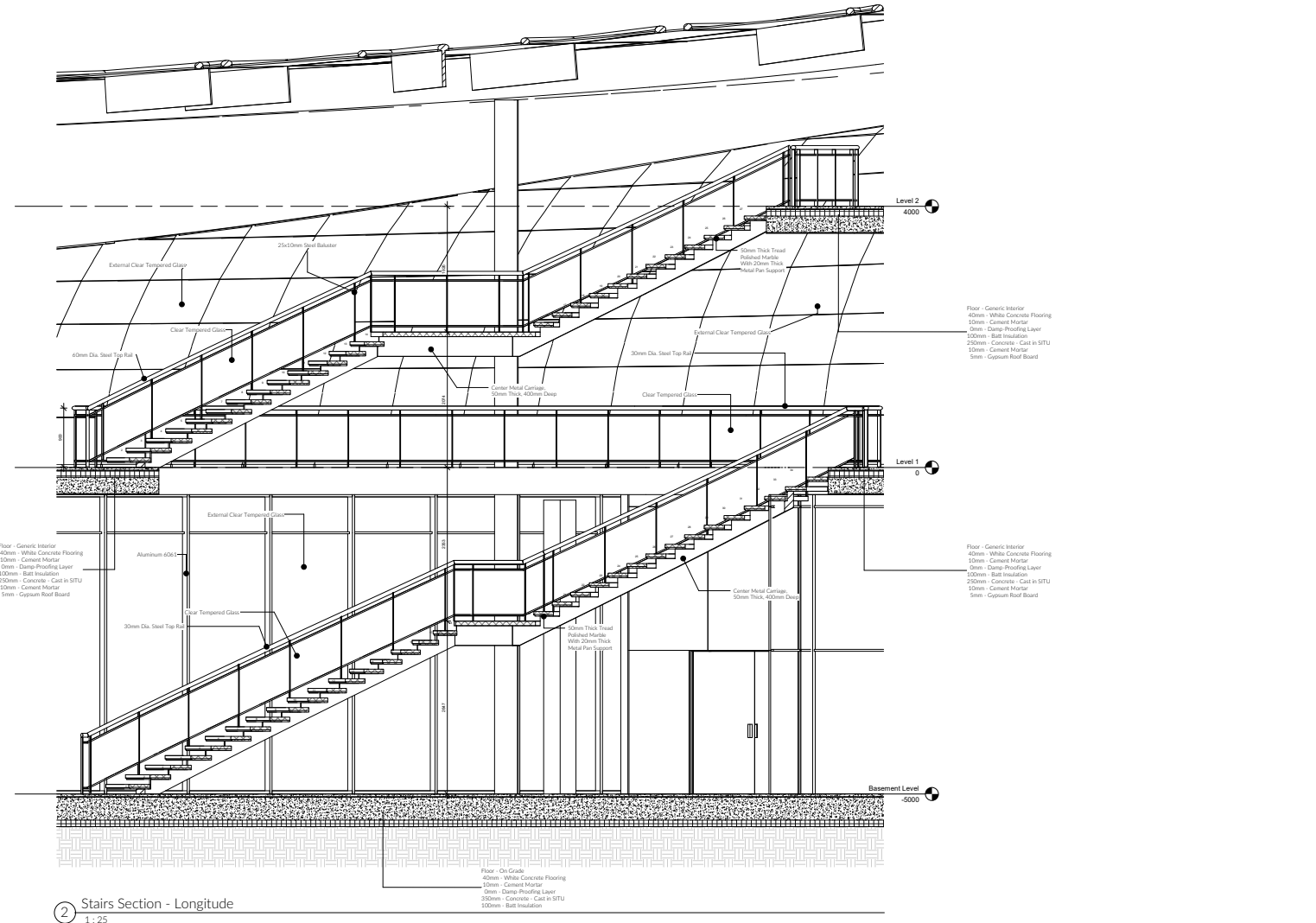
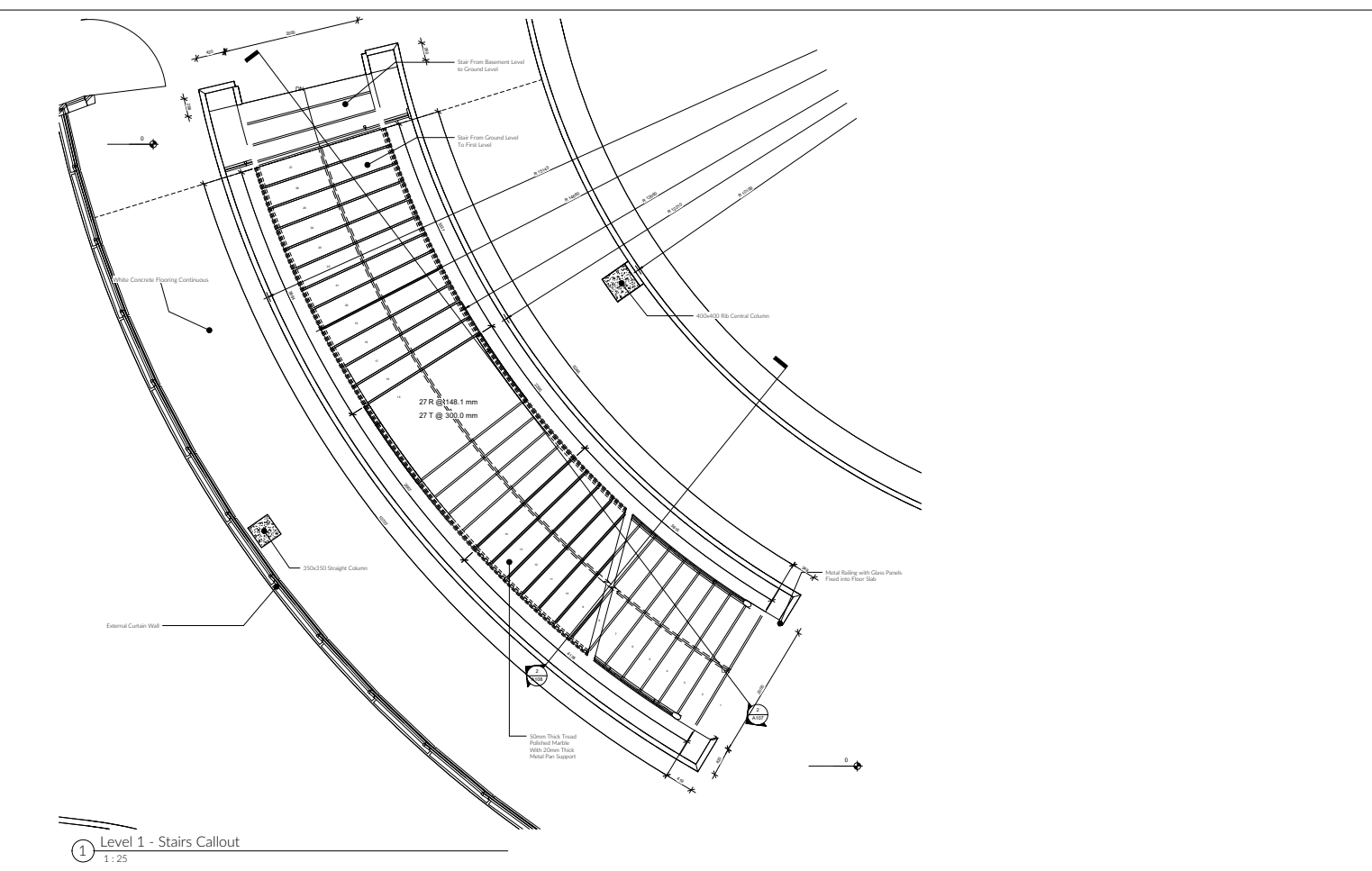
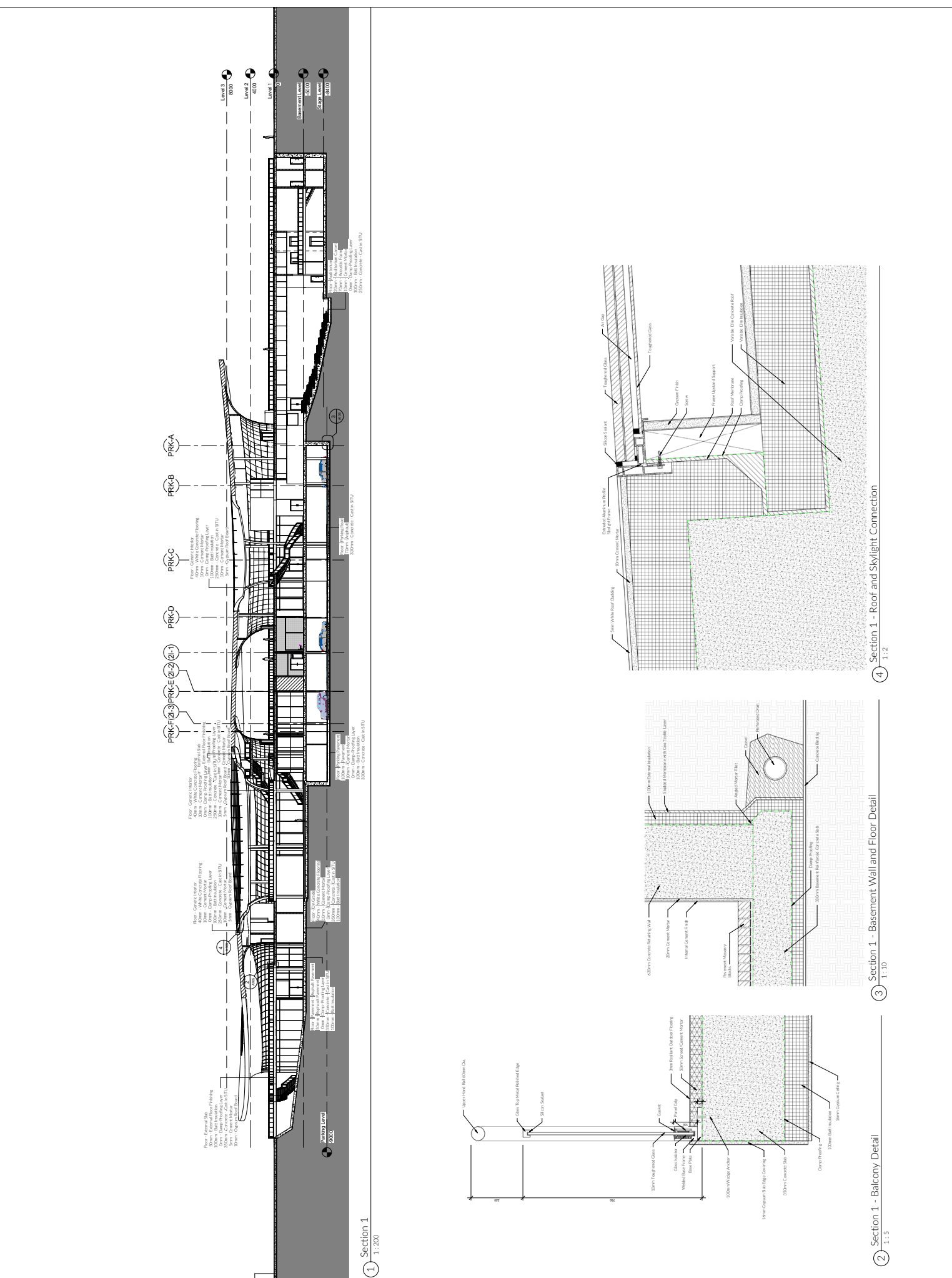
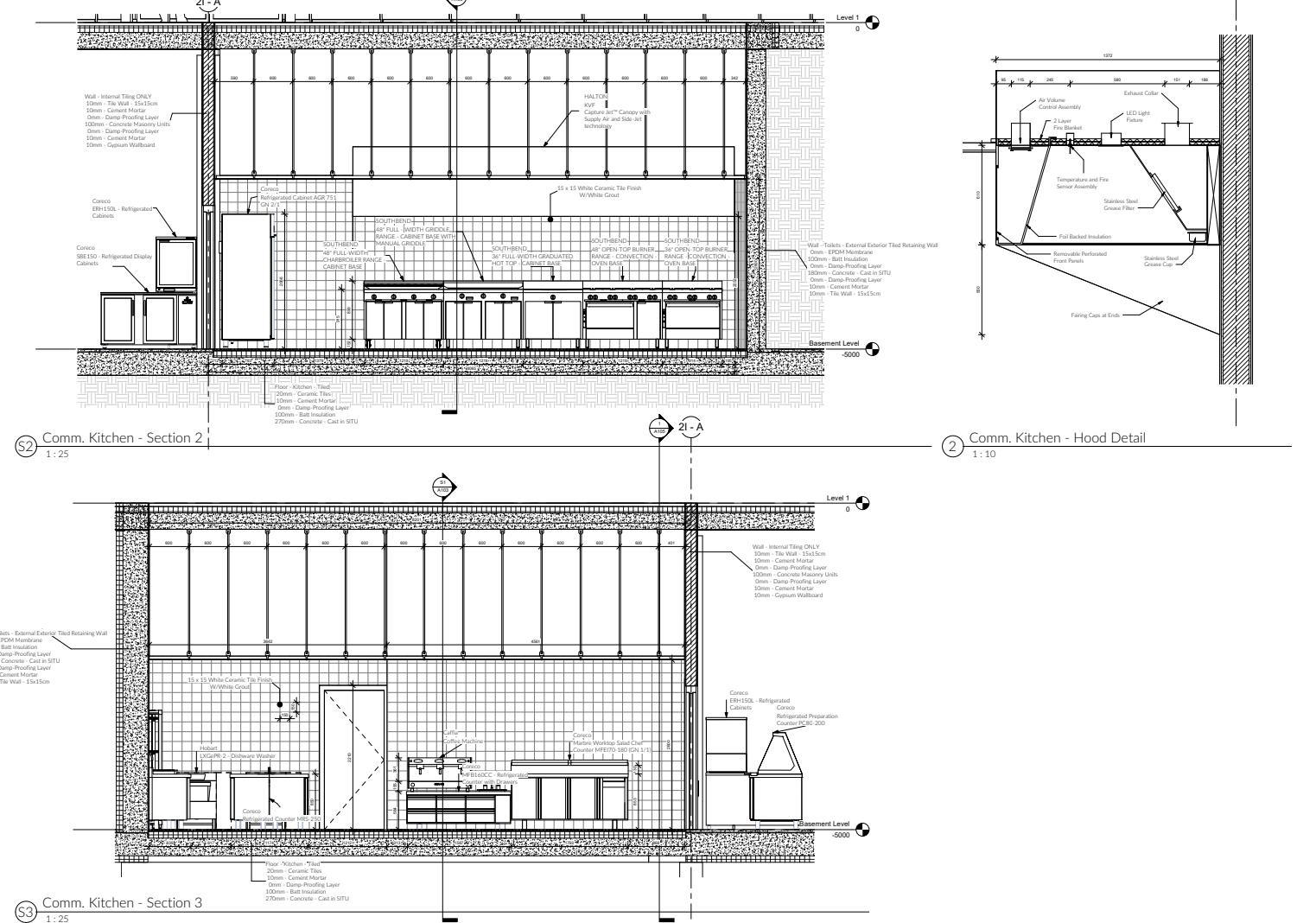
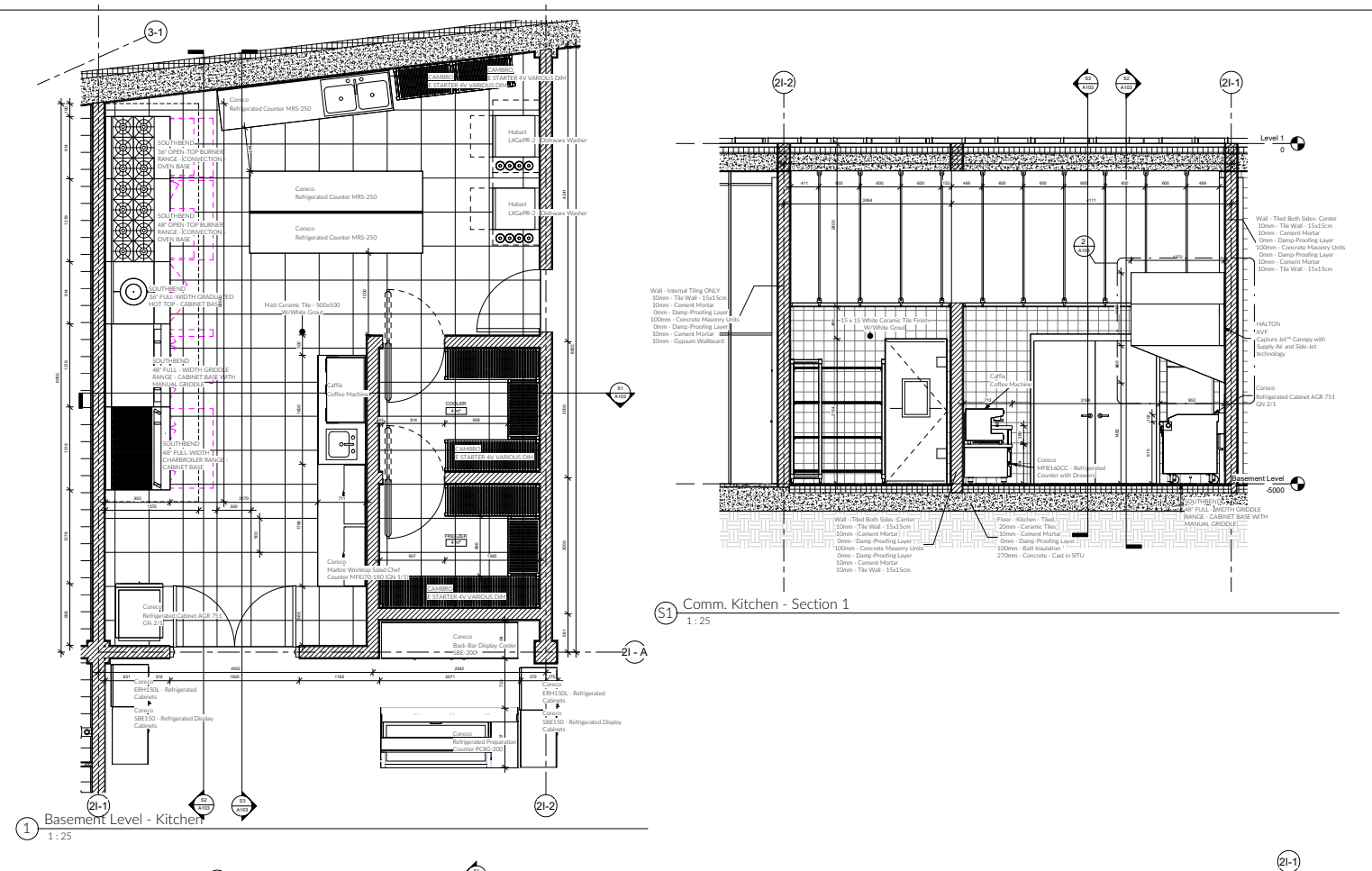
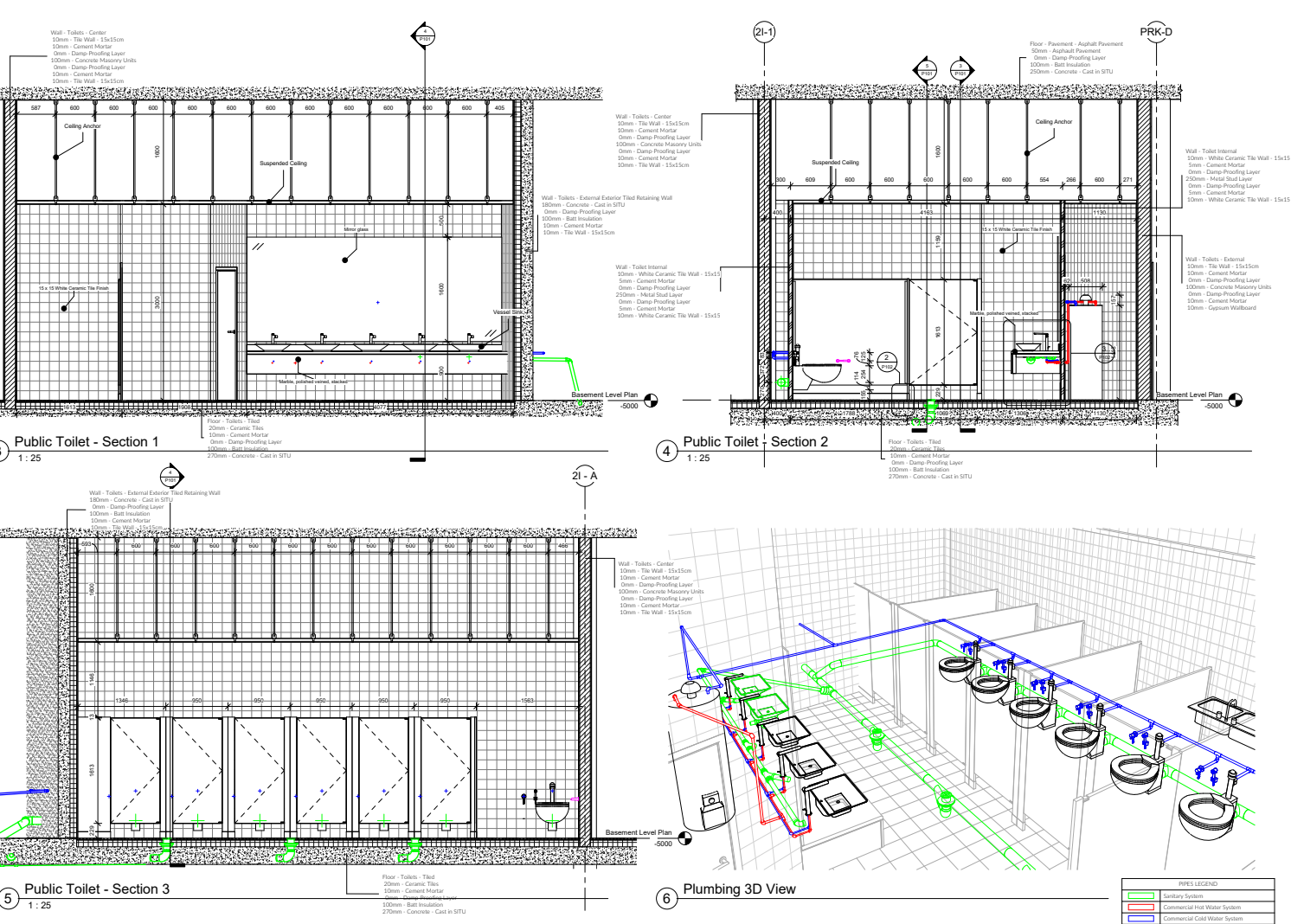
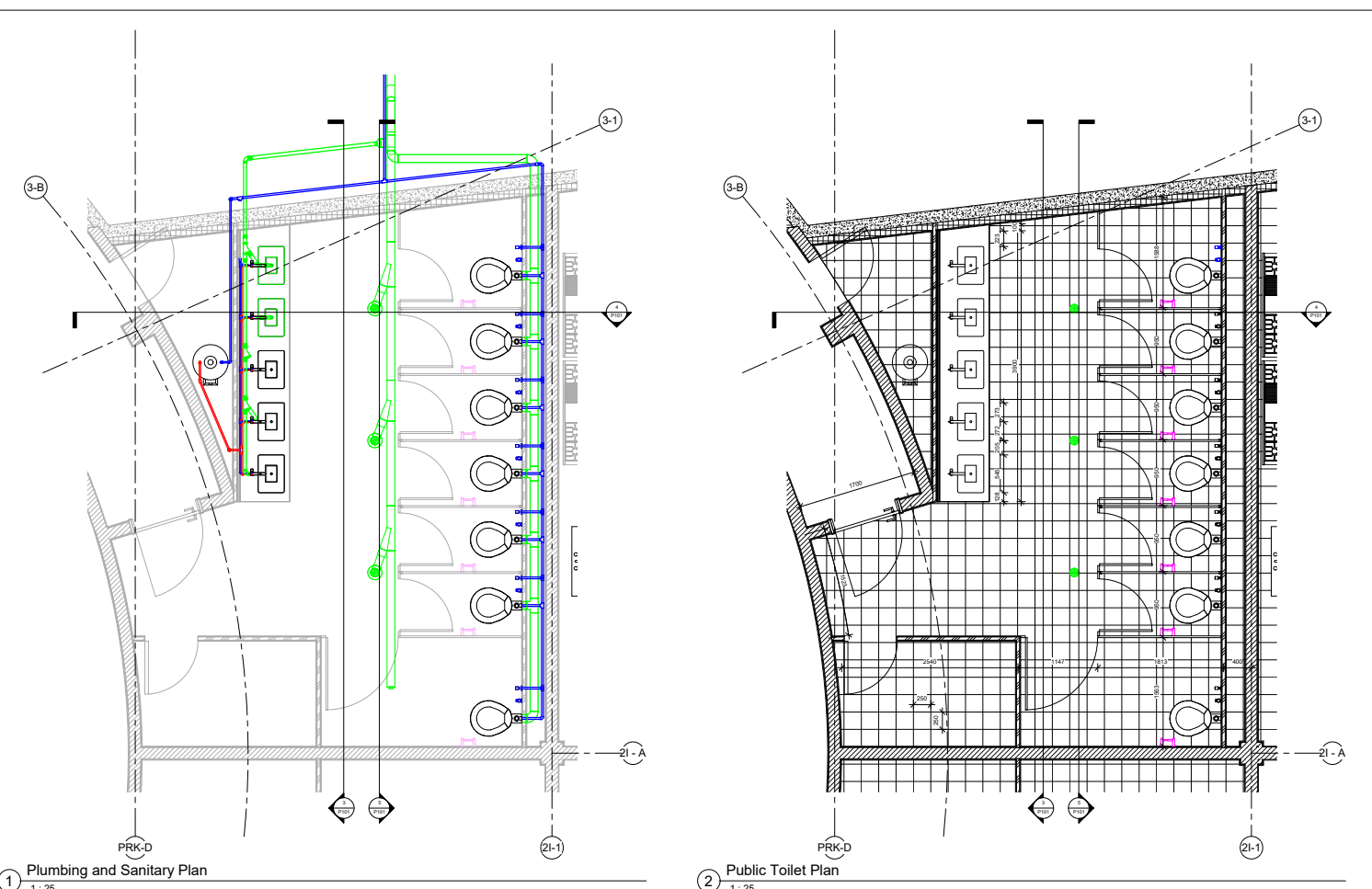
2019 AL AIN, ABU DHABI

# WORKING DRAWINGS - THE FOOTPRINT



PROJECT: BASMENT FLOOR PLAN	FLOOR LEVEL SYMBOL
SECTION SYMBOL	GRID SYMBOL

ABBREVIATIONS	DN DOWN STAIRS
DW DOWNWATER	REF REFRIGERATOR





DESIGN STUDIO COMPETITION TECHNICAL FABRICATION RESEARCH

# FABRICATION



© 2019 THE FRAGMENTS TOWER - STRUCTURAL MODEL

# LASER CUT MODELS



## FABRICATION SUMMARY

All models where the structure consists of regularly shaped forms and elements are well suited to be built by means of laser cut parts. As laser cutters operate in only two dimensions, a form that has a more complex form tends to require other means of fabrication.

### MODEL PREPARATION

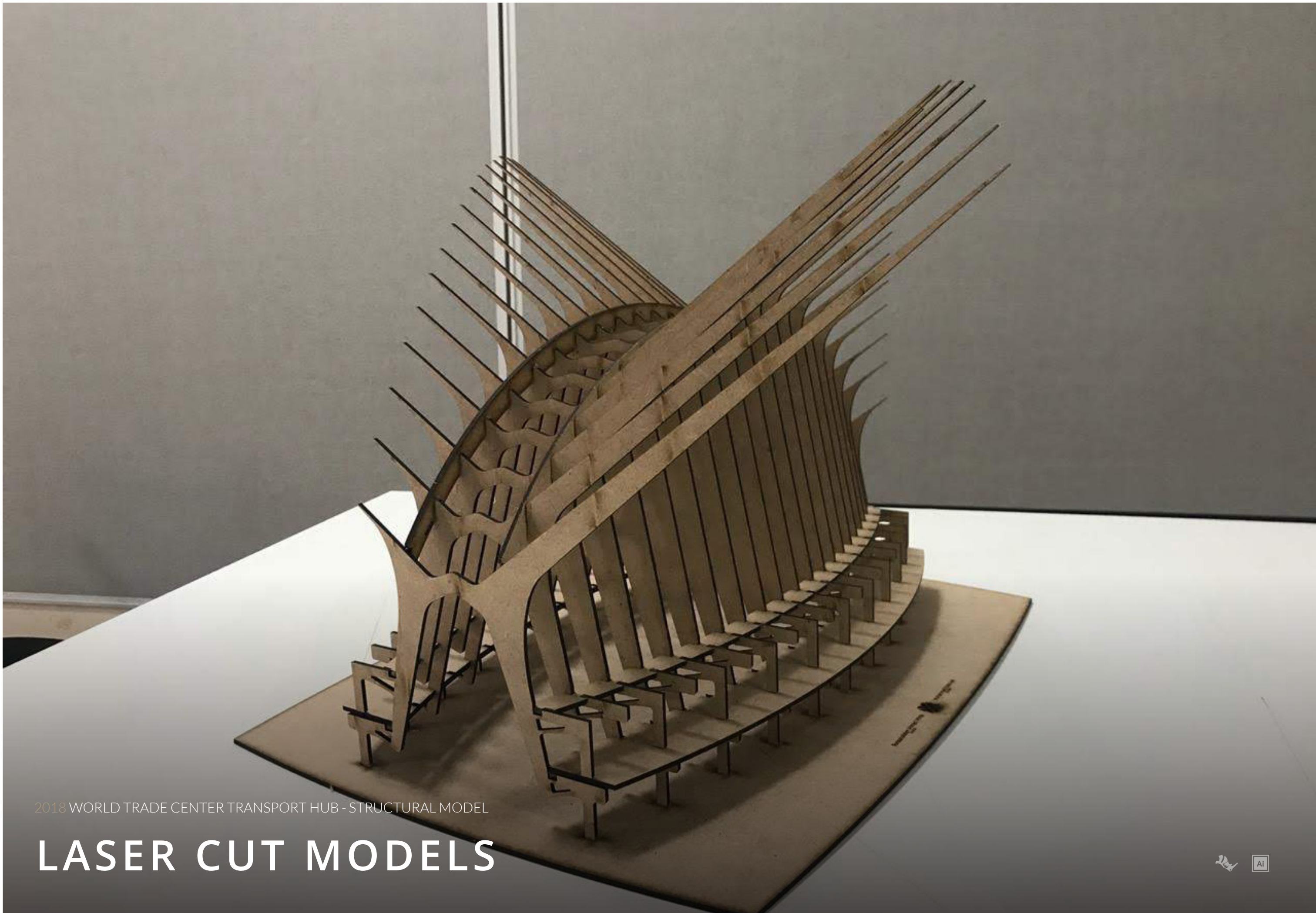
An architectural model, typically either a Rhino or BIM model are used a reference for an entirely new Rhino model that is custom built for laser cutting making sure all parts fit together and are able to be assembled once they are cut. Several factors affect the model which must be known before modeling in software can start, namely material thickness and type of material.

### THE FRAGMENTS TOWER

In the case of the Fragments Tower, a 1:250 scale model was constructed. The model works just as a real building would. With a central core from which slabs extend. The core provides most of the structural load bearing capacity. The columns at the external envelope of the build reinforce and rigidity to the building, helping to resist torsional loads.

Sandwiching the structural model are four white acrylic 'shards' that give the tower its distinctive appearance.





2018 WORLD TRADE CENTER TRANSPORT HUB - STRUCTURAL MODEL

# LASER CUT MODELS



## FABRICATION SUMMARY

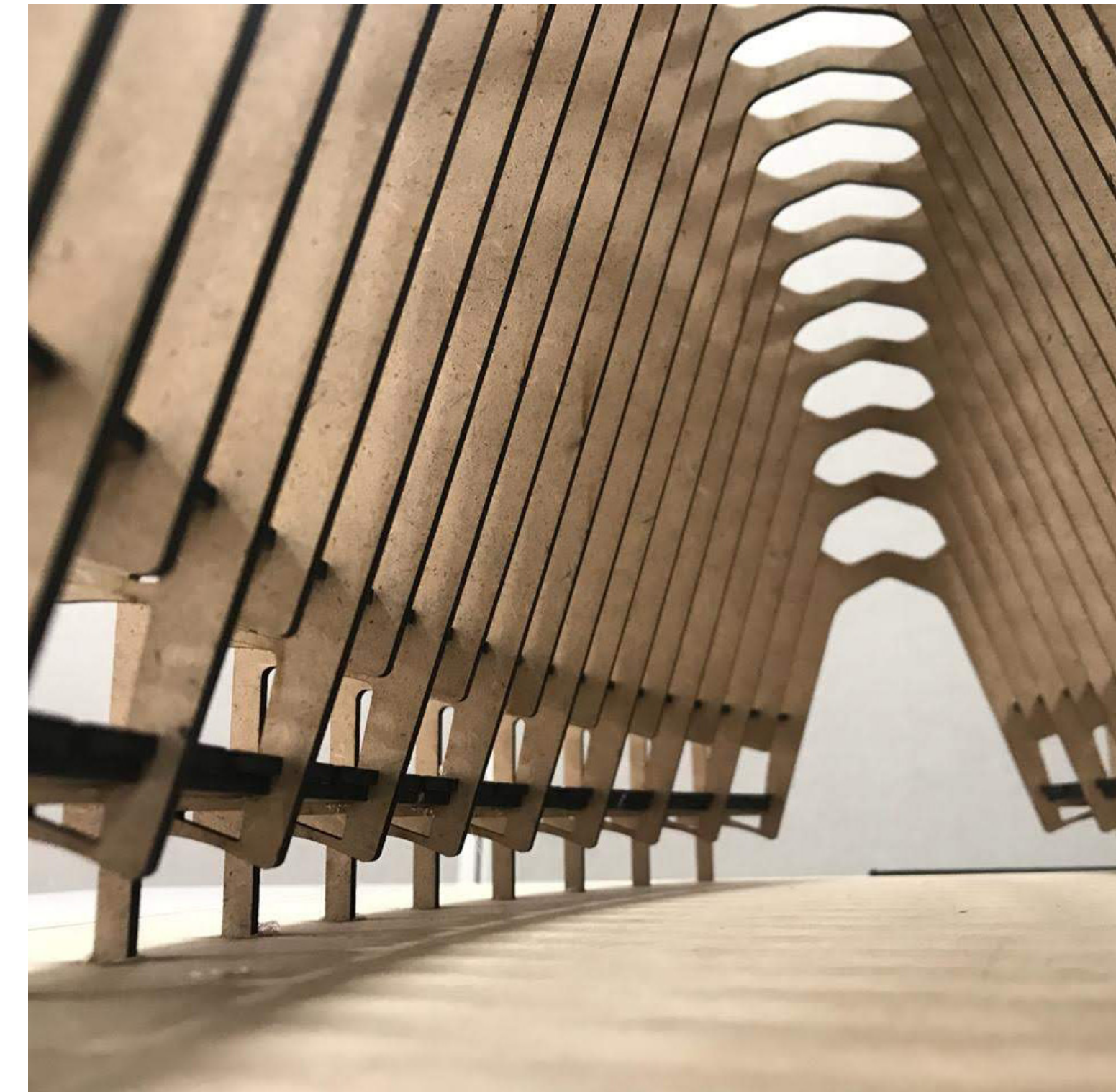
The model of the World Trade Center Transport by Santiago Calatrava was an exercise to help third year students understand how large span structures work.

### THE FIRST ATTEMPT

Two models were created as the first one did not have the strength required to bear the weight of the structure. Several fabricated parts had cross sections that were too thin and would snap on the slightest touch.

### THE SECOND ATTEMPT

A great deal was learned from the first attempt and the model was revised to account for the issues faced without sacrificing the final aesthetic of the model. The finished model was surprisingly strong and durable.





2018 THE FOOTPRINT PENGUINARIUM

# 3D PRINTED MODELS

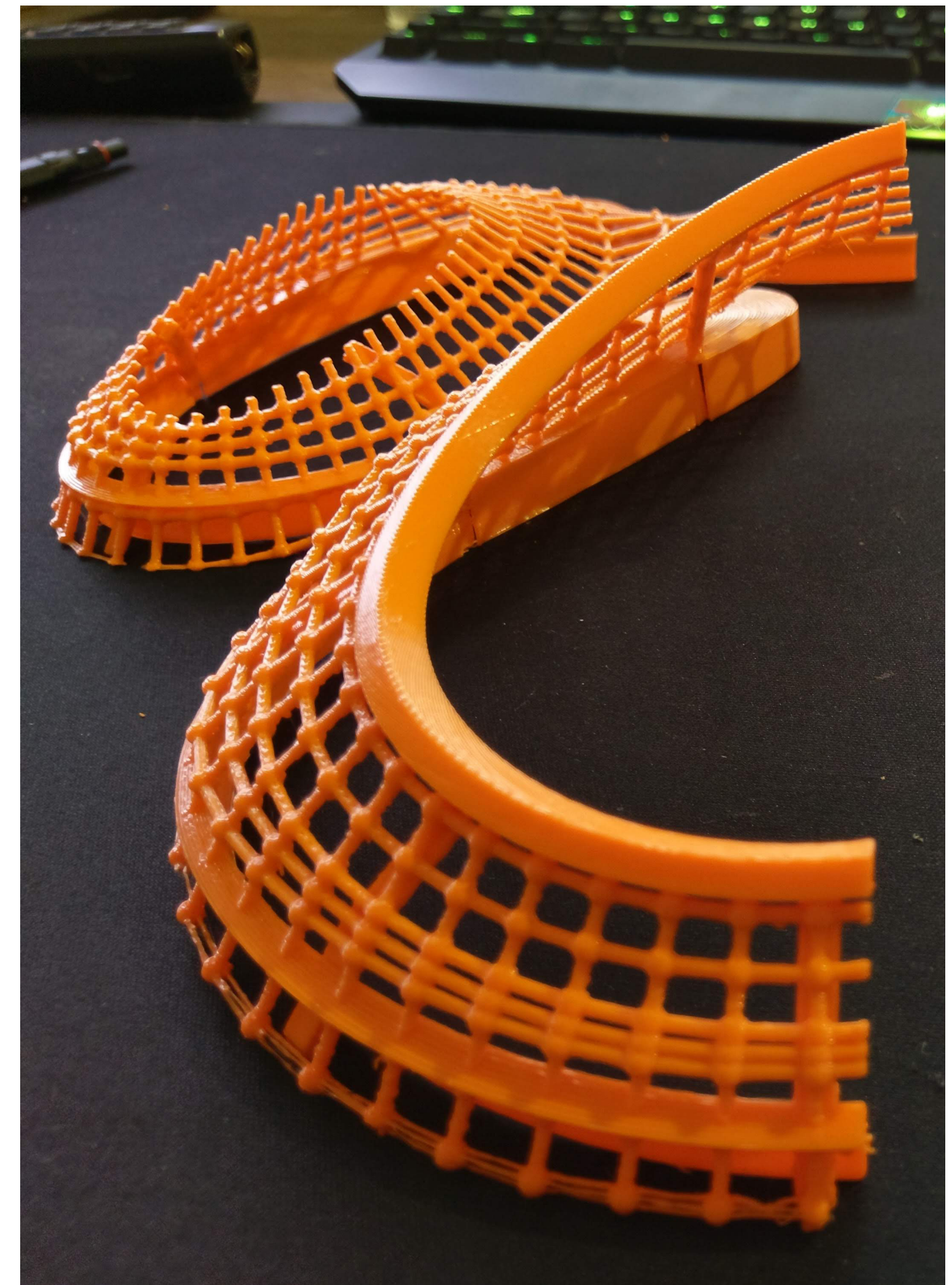
## FABRICATION SUMMARY

3D printing was, up until recently, unattainable for the average person. With the recent advancements and new open source technologies, it has become something any creator can have access to. I got into 3D printers and 3D printing in the fall of 2018 when I discovered just how inexpensive 3D printers had become. I got some money together and bought a Creality CR10S. This machine, for all its simplicity, can bring the most out of this world objects to the real world. It is not as easy to operate as many assume but the output you get for your effort is unparalleled.

### PREPARING A MODEL

A 3D printer needs a model that has been specifically designed for it to get the best print quality and quickest turn around. A model that typically comes out of a CAD, BIM or even 3D modeler will likely face issues being printed.

I have found that it is most efficient to use the original architectural file as a reference to quickly build a new file specifically designed for 3D printing considering all best practices.



DESIGN STUDIO COMPETITION TECHNICAL FABRICATION RESEARCH

# RESEARCH

# DESIGNING A NEXT GENERATION AIRPORT

## AL AIN INTERNATIONAL

2018 LIGHTING AND ACOUSTICS



## RESEARCH SUMMARY

The first part of the graduation project is to create a thesis on the chosen typology of building. The thesis goes through everything required to be fully prepared to start designing the project in the second phase of the graduation project course. The thesis is divided into 6 parts:

### INTRODUCTION

The introduction identifies the project as a next generation airport. It looks at common issues with the project and lists goals that should be achieved by projects end.

Then it looks at the typology of the type, going into the history of airports and identifying the most used configurations of airport.

### SITE ANALYSIS

The site analysis section identifies Al Ain International Airport as the site of choice and gives reasons why. Then it takes a deep dive and looks into the details of the site.

### CASE STUDIES

Three case studies are the backbone of this research where each was modeled in a BIM environment from which data was extracted and analyzed for use in the subsequent parts of the report.

### GENERIC DATA

Generic data was collected which describes the requirements of the different facilities, stakeholders and laws.

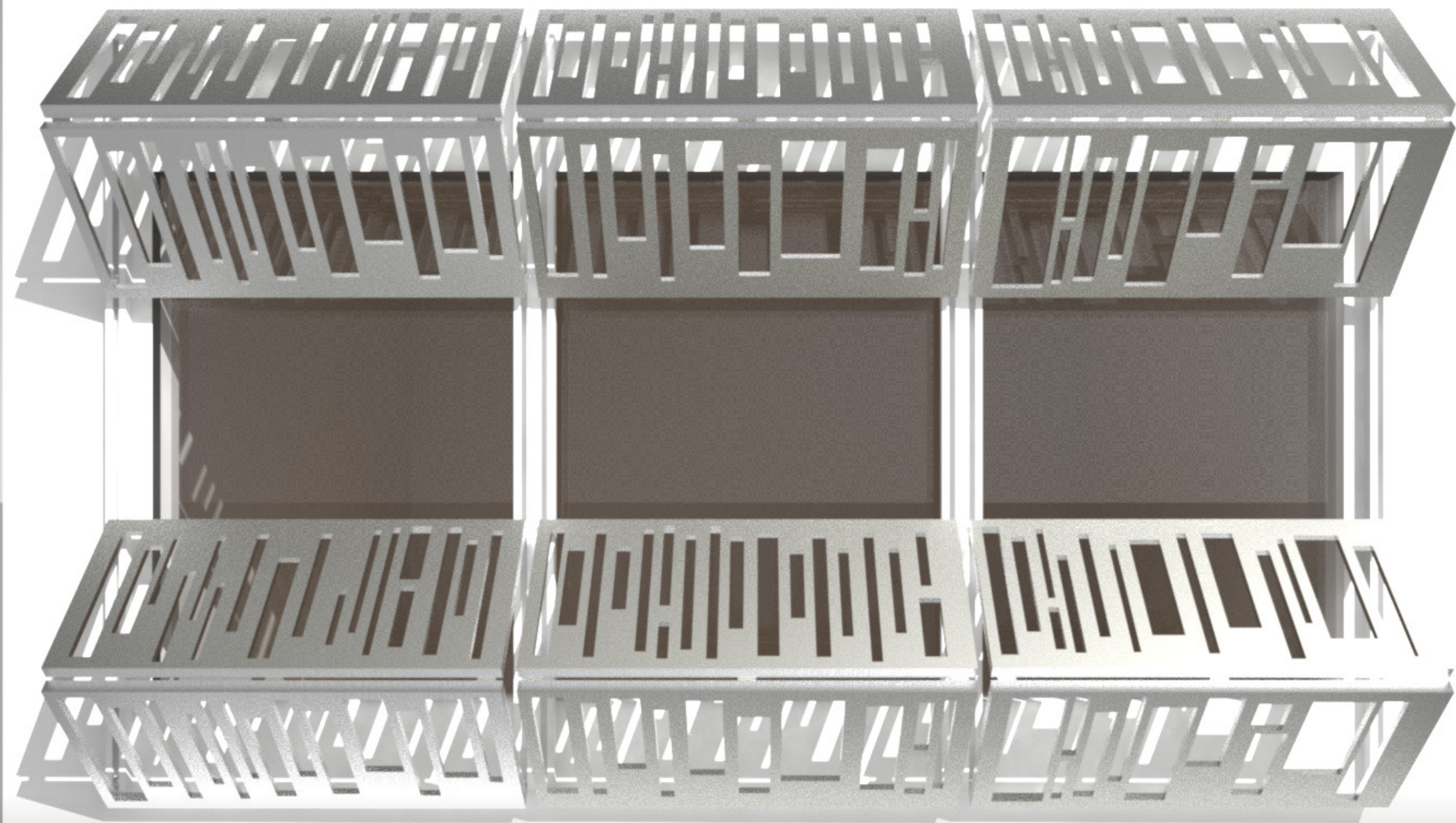
### PROGRAM

A program was generated from the generic data and data from the case studies.

### CONCEPT

A quick concept was used to illustrate what the end project might look like.

You can find the full thesis at [FarasatMirza.com/AirportThesis](http://FarasatMirza.com/AirportThesis)



2018 LIGHTING AND ACOUSTICS

# SUN SCREENS



## RESEARCH SUMMARY

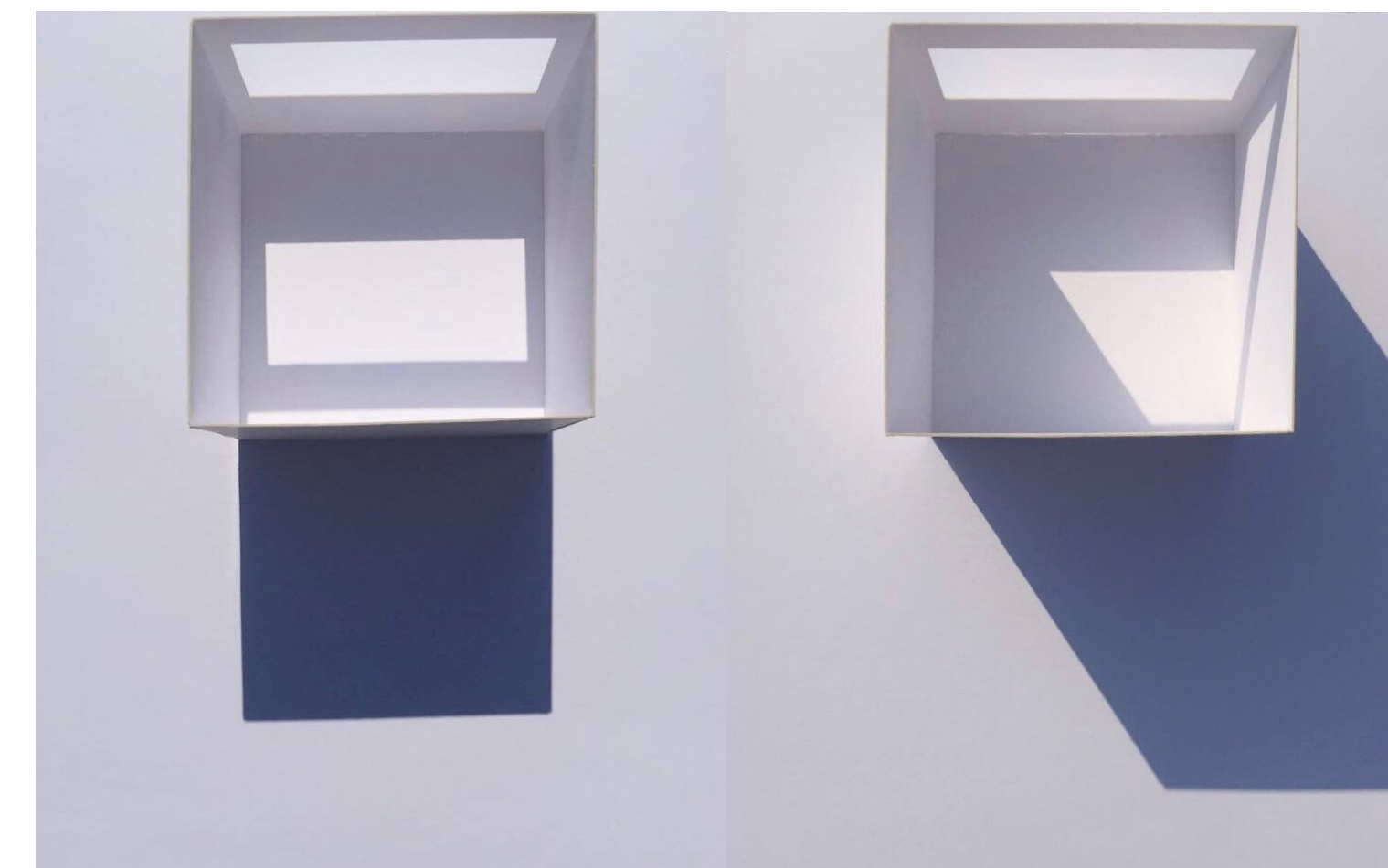
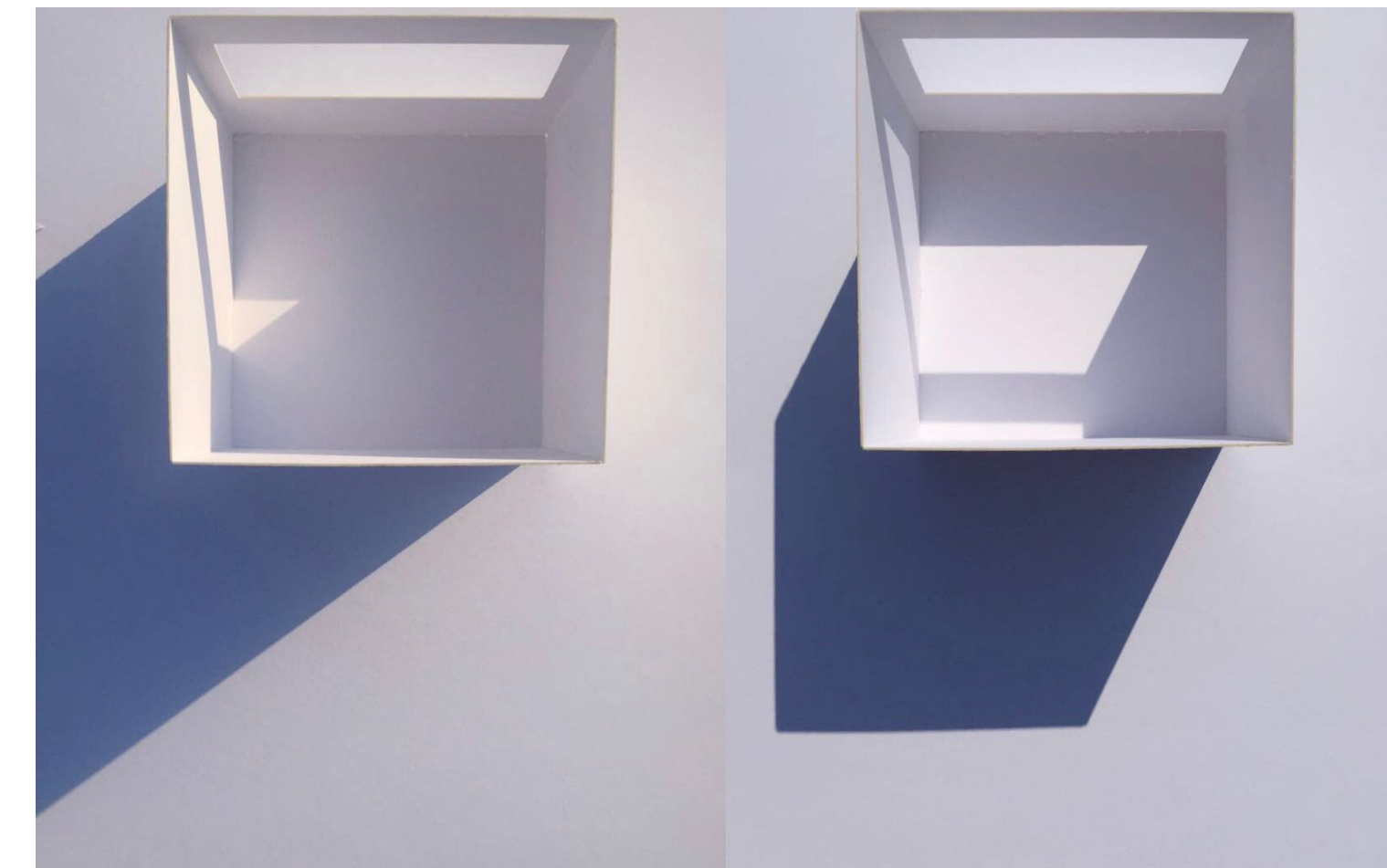
As part of a course on lighting and acoustics, students were asked to design a sunscreen system that would optimize the light and heat entering a room through an opening. To do this, readings were first taken at various times of day, analyzed and then a sunscreen was designed using various software like SketchUp and Velux.

### MODEL READINGS AND ANALYSIS

Readings were taken during the winter season. At 10AM, the sun is in the east and enters the room. It lights up part of the floor and the western wall. At 12PM, the sun is directly south and lights up the entire floor. At 2PM, the sun is in the west and enters the room. It lights up part of the floor and the western wall. At 4PM, the sun is further west than at 2PM. Light enters the room but only lights up the eastern wall. The floor is left untouched.

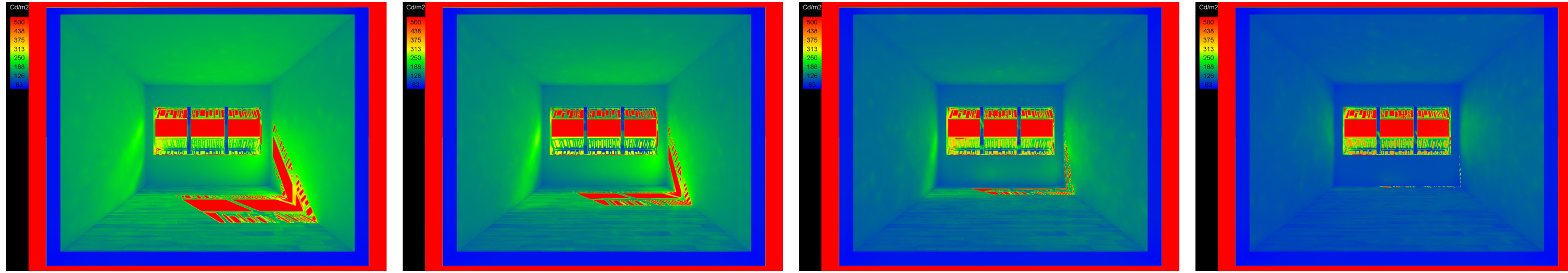
### SUNSCREEN DESIGN

This design allows for the room to be heated naturally during winter while reducing the heat entering during the summer. As can be seen in the false color rendering, from October to February, the winter months, sunlight is let into the room. This allows the room to be heated in the winter, reducing the energy needed to heat the room artificially. In the summer months from March to September, less light is let into the room which reduces the heat entering the room. Again, this means less energy is required to cool the room through artificial means.



# RESULTS WITH SUNSCREEN

ANNUAL LIGHTING - FALSE COLOR - 10AM

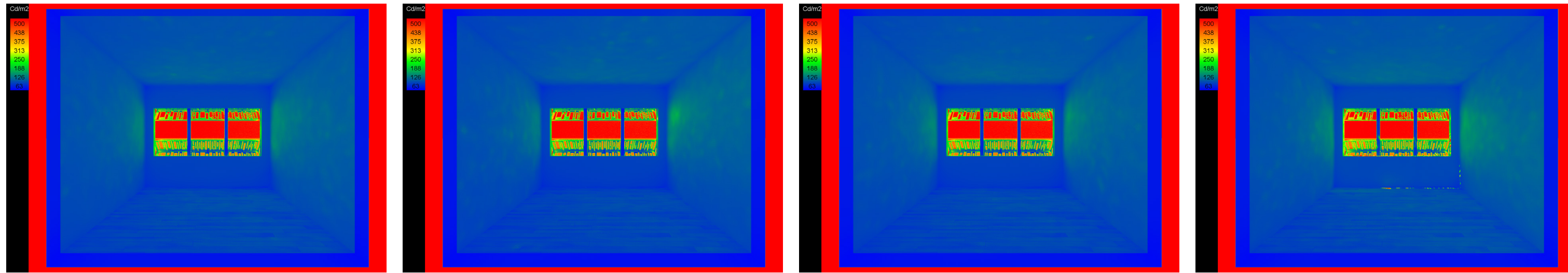


January

February

March

April

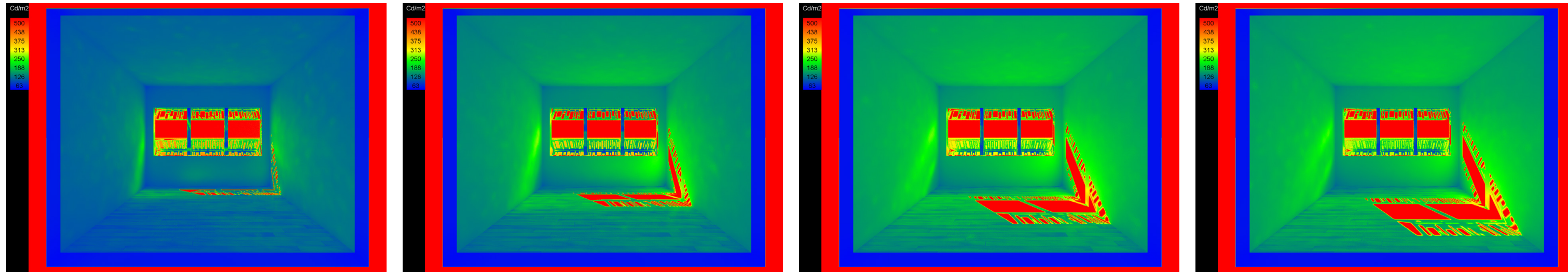


May

June

July

August



September

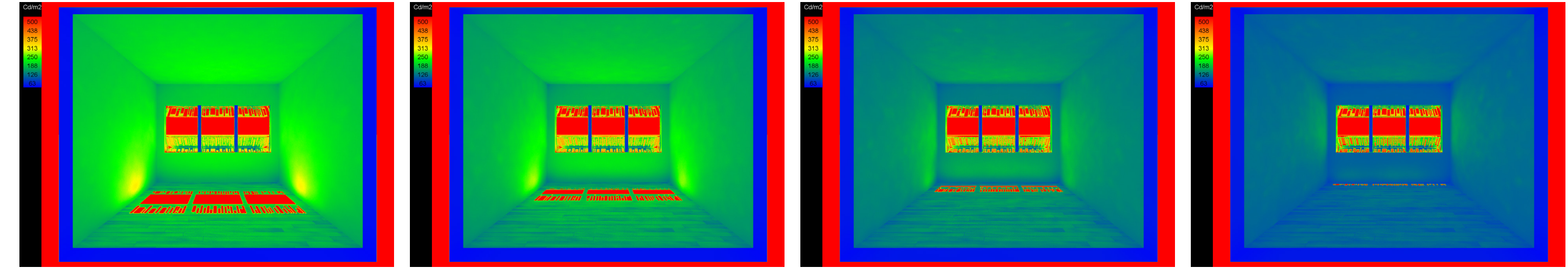
October

November

December

# RESULTS WITH SUNSCREEN

ANNUAL LIGHTING - FALSE COLOR - 12AM

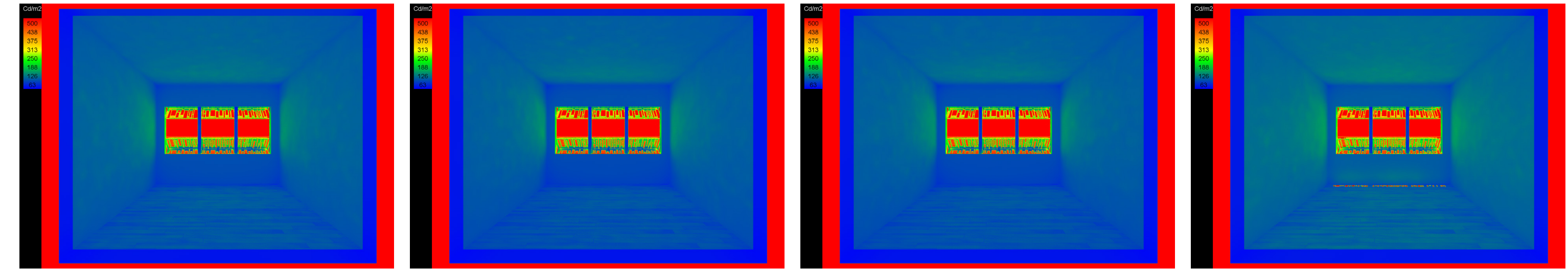


January

February

March

April

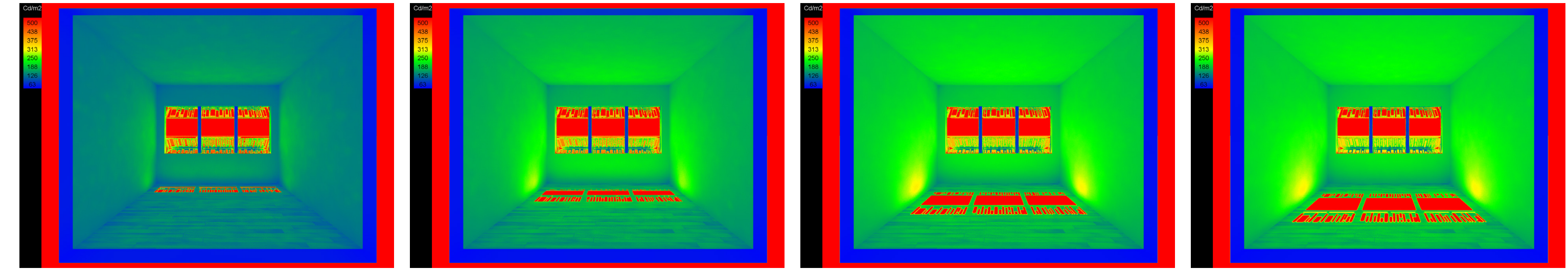


May

June

July

August



September

October

November

December





2018 ENERGY AND SYSTEMS

# SUSTAINABLE COURTYARD VILLA



## RESEARCH SUMMARY

The challenge with this project was to build the most sustainable house possible with predefined prefabricated elements. These elements, referred to as modules, were 4x4x4 meter boxes which were to be respected during the design of the project.

Conceptually, we set out to use the modules to create the most sustainable house possible by placing the modules to optimize, natural ventilation, sunlight and heat gain.

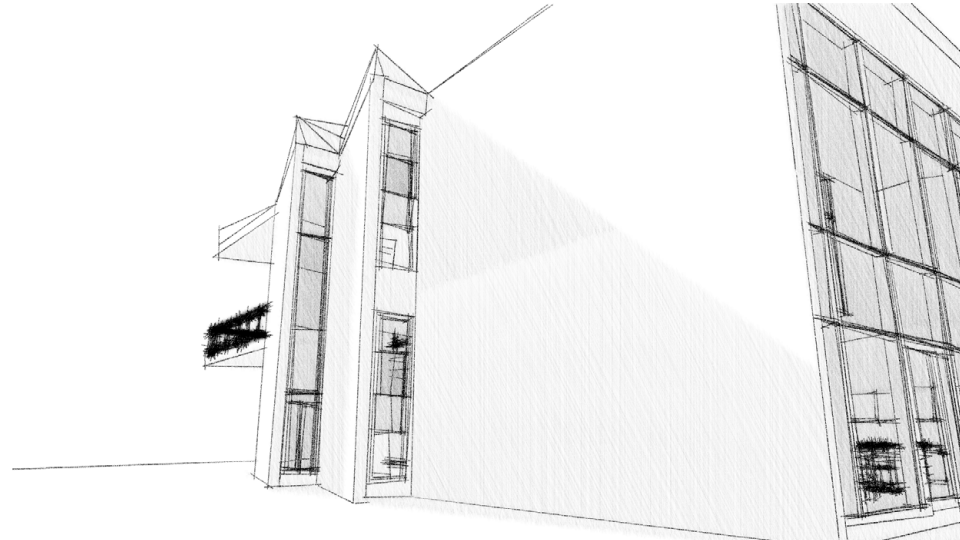


# SUSTAINABLE FEATURES



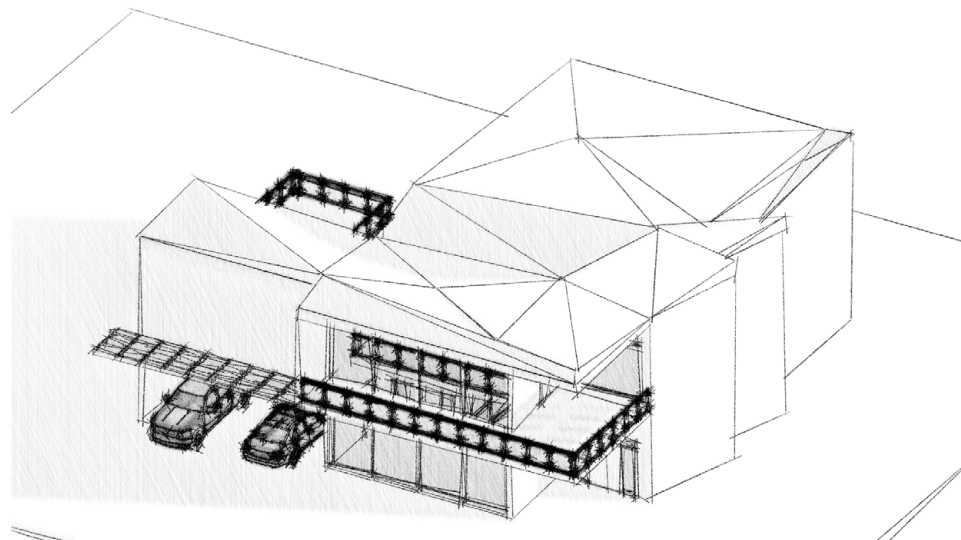
COURTYARD

The house is designed around the courtyard. For centuries, courtyards were incorporated into houses for the purpose of natural ventilation. The courtyard provides fresh air to the house and reduces odors. Courtyards also have a passive cooling effect which brings down the overall temperature of the house down. In addition, a courtyard filled with plants or a garden can reduce temperature even more.



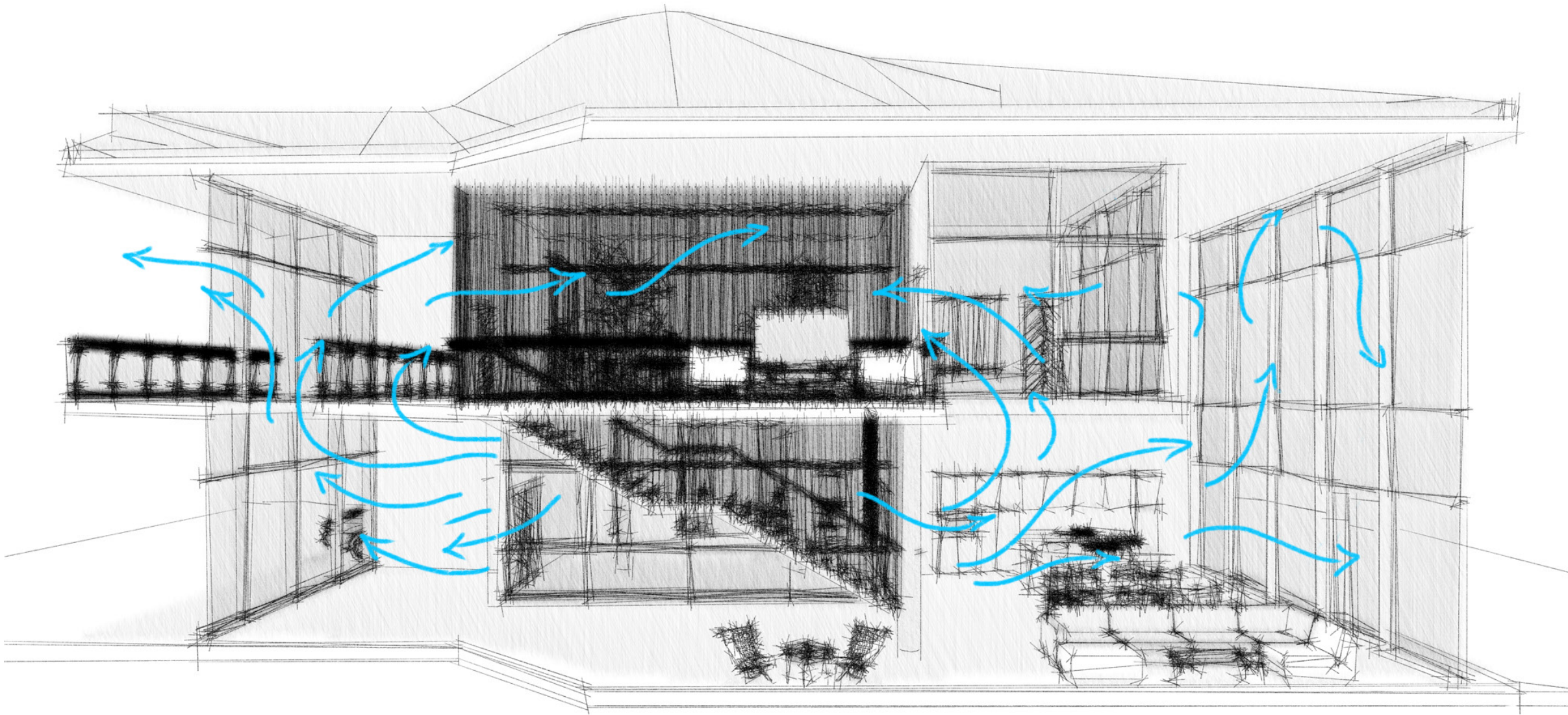
NORTH ANGLED WINDOWS

In order to reduce the number of openings facing unfavorable orientations, we used what we call angled windows. These windows are located on the east facade of our building but face north. This reduces the overall amount of direct sunlight entering the building. The reduction of direct sunlight leads to lower heat gain and overall better sustainability for the building.



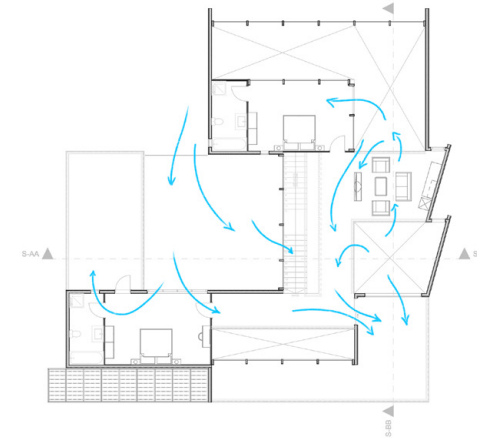
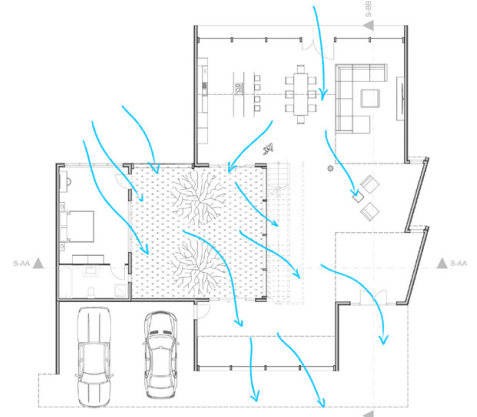
GEOMETRIC ROOF

One of the largest surfaces on any building that contributes to heat gain is the roof. Our roof minimizes the heat gain by using geometric triangular shapes. The design of the roof is such that sunlight doesn't cover the entire surface area of the roof at all times. The short rises and dips in the roof create shade on the side opposite the sun, reducing the heat gain on the roof.



WIND FLOW

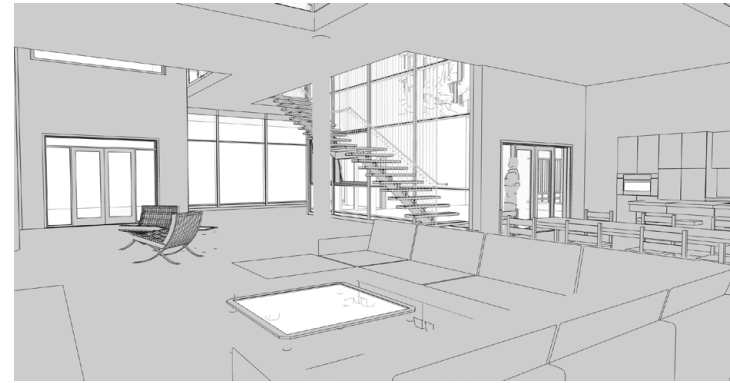
Openings were strategically placed to let air in and circulate through the villa. The villa is specially oriented to catch the predominant winds in Abu Dhabi and force them through the villa from the courtyard.



# SUN PATH ANALYSIS

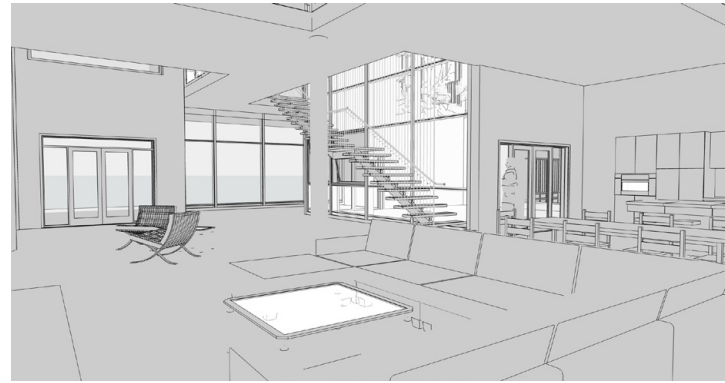
IMPACT OF SUN ON INTERIOR

Summer Solstice - 21 June



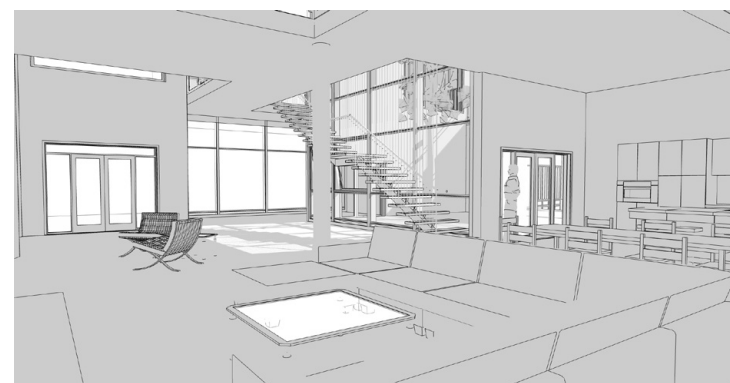
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10:00



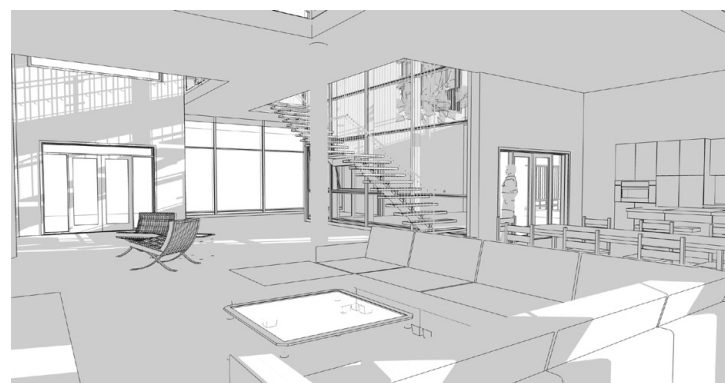
12:00

14:00



16:00

18:00

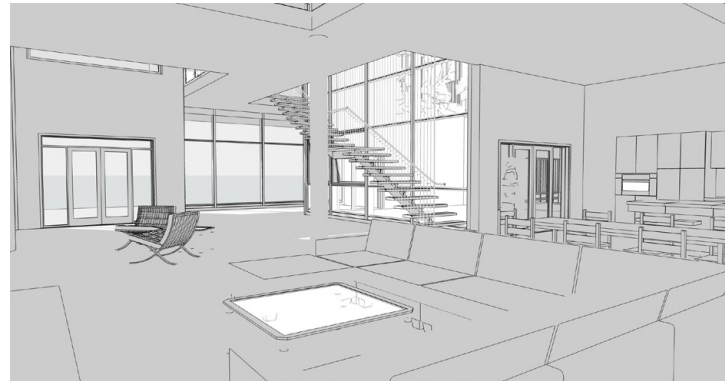


Winter Solstice - 21 December



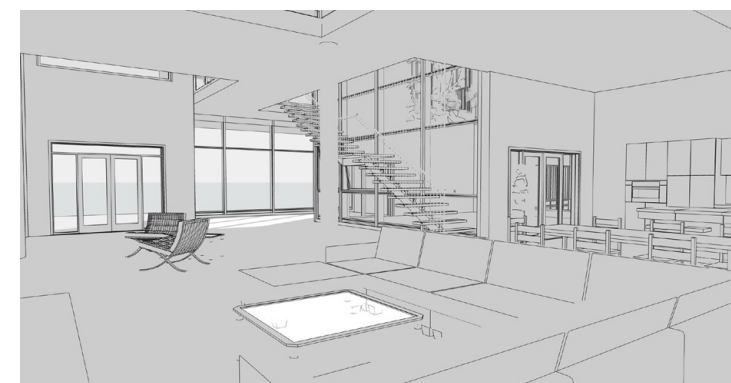
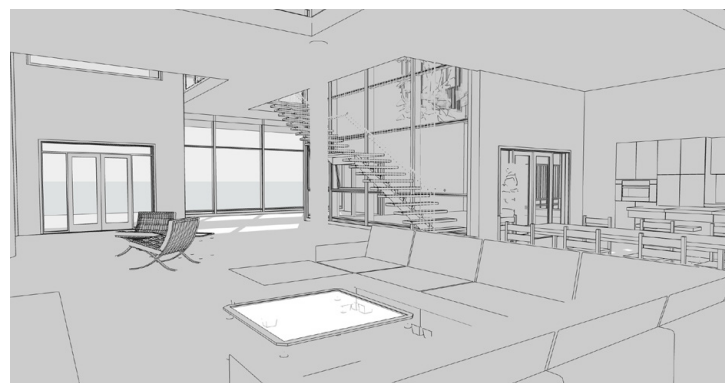
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12:00

14:00



16:00

18:00

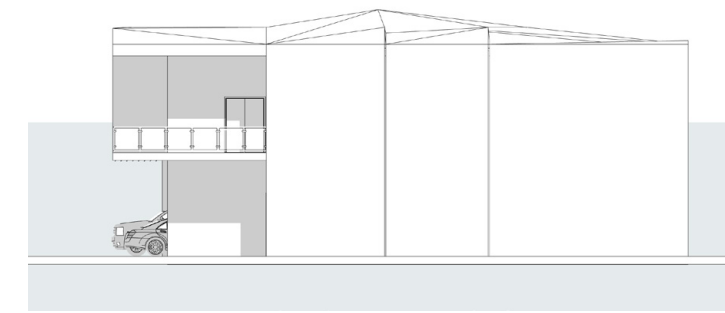


# SUN PATH ANALYSIS

IMPACT OF SUN ON ELEVATIONS

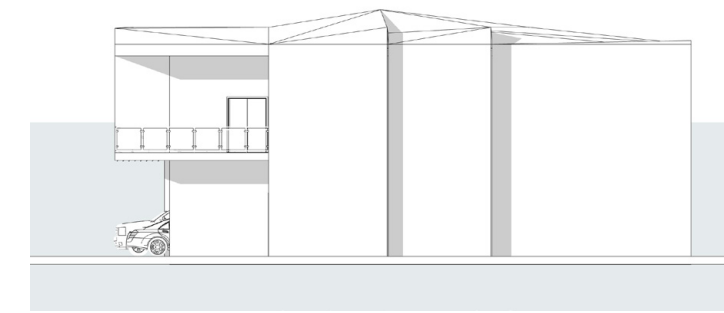
EAST ELEVATION

Summer Solstice - 21 June

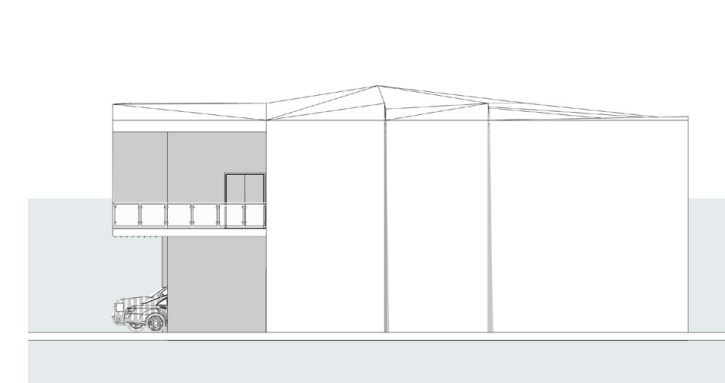


08:00

Winter Solstice - 21 December

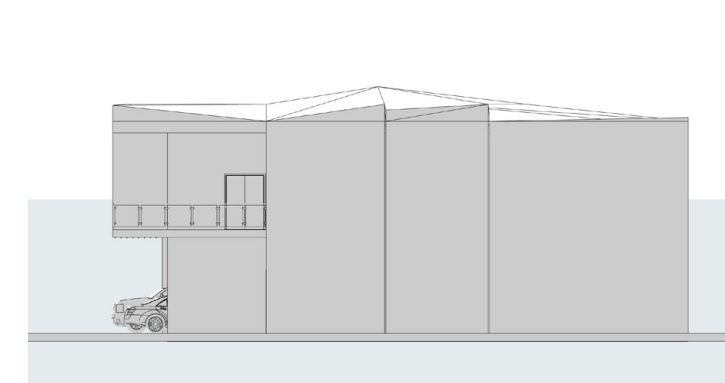


08:00



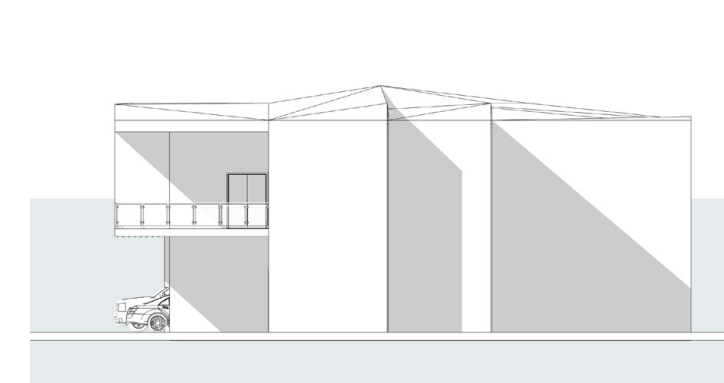
12:00

12:00



16:00

16:00



SOUTH ELEVATION

Summer Solstice - 21 June



08:00

Winter Solstice - 21 December



08:00



12:00

12:00



16:00

16:00



DESIGN STUDIO · COMPETITION · TECHNICAL · FABRICATION · RESEARCH

**END**



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