



Basera | Haven

Orphanage. for. the. less. fortunate

W a s i b . M a h m o o d

Washington. Alexandria. Architecture. Center

Virginia Polytechnic Institute & State University

**Thesis submitted to the faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of**

Master of Architecture

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Marcia Feuerstein

Paul Emmons

Dec 14th 2016 | Alexandria, VA



Architectural Abstract

The architectural challenge behind this project was to first create a program for an institution (orphanage) that does not have a local precedent. Next was to create a harmonious architectural composition by resolving a whole series of conflicts derived from the various different programmatic requirements. Age group & gender, public vs private, students vs faculty are some of the prime questions I had to answer. An over arching concern was how to make this project respond to the vernacular. Building typologies, spatial strategies and of course, materiality were all of utmost importance. Figuring out how a social objective would be achieved architecturally was challenging yet very intellectually satisfying once completed.



General Audience Abstract

The project aims to establish a premier institution of primary education in Pakistan with the primary focus of reintegrating orphans into society. Currently, approximately 20 million children are out of schools in Pakistan and 4 million of those are orphans. 'Basera', an Urdu term for 'Haven' will be an institution of international standards comprised of all North American teachers. The institution is envisioned to be self sufficient with no need of charity donations by operating at a 60-40 division of general public to resident orphan pupils.

The campus boasts state of the art teaching facilities as well as a full fledged sports complex and an indoor swimming pool. Faculty and 40% of the student population lives on campus with a beautiful flower farm and a rainwater harvested lake. The architecture is very contemporary in its design, however the primary building material is rammed earth grounding the entire scheme into its vernacular setting. Basera also enriches the lives of the immediate community surrounding the campus by providing a cricket stadium and community centre for public use.

Dedication & Acknowledgements

This thesis is dedicated to my parents for their endless love, support & encouragement and for making me an individual who chose to work on this topic.

I would never have been able to produce this work without the invaluable feedback of my entire committee. Professors Susan Palladino, Paul Emmons & Marcia Feuerstein, I will forever be grateful for the confidence you showed in me and support you provided throughout my thesis project. Thank you very much.

My colleagues at The M Group, thank you for giving me all the time I needed to work on this.

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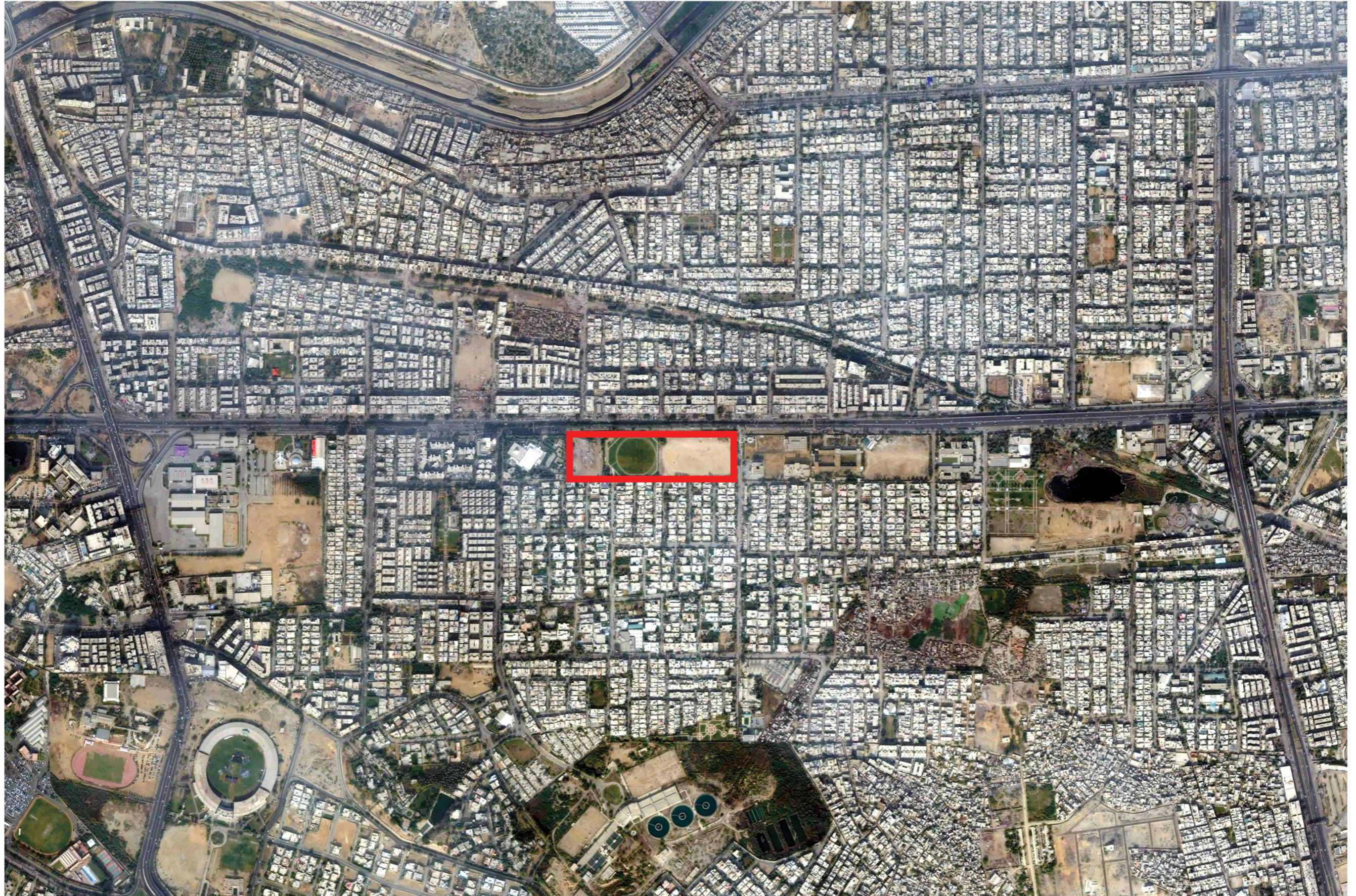
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Site

Karachi is 'the' metropolitan city of Pakistan. Hosting a staggering 20 million residents the city is not without charm. Situated on the southern tip of Pakistan, opening its shores to the Arabian Sea, the city serves as a major trading hub. There is no shortage of wealthy individuals ranging from politicians to film stars who enjoy nothing short of the luxuries of the first world but unfortunately, as often happens with such urban densities, there is also no shortage of hungry, destitute children serving their birth sentence of 'poverty for life'.







Site Plan | Scale 1:750

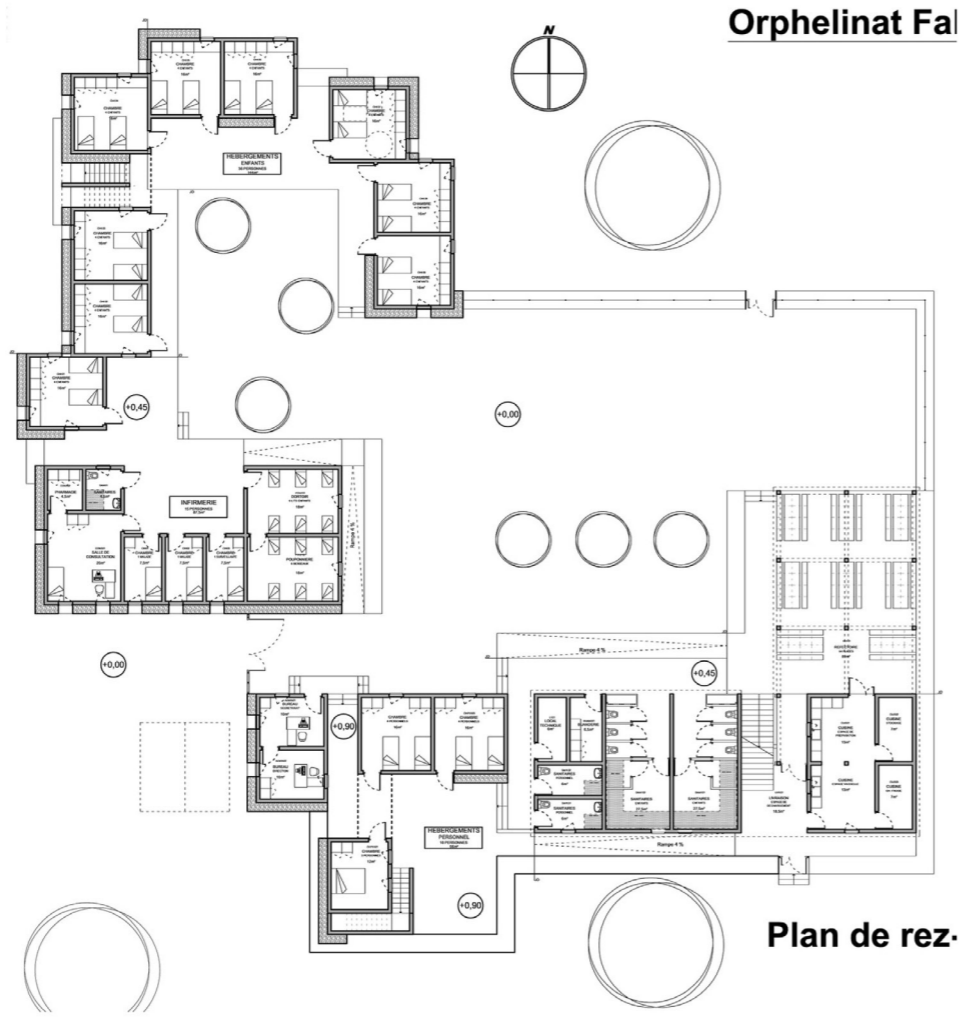


Precedents

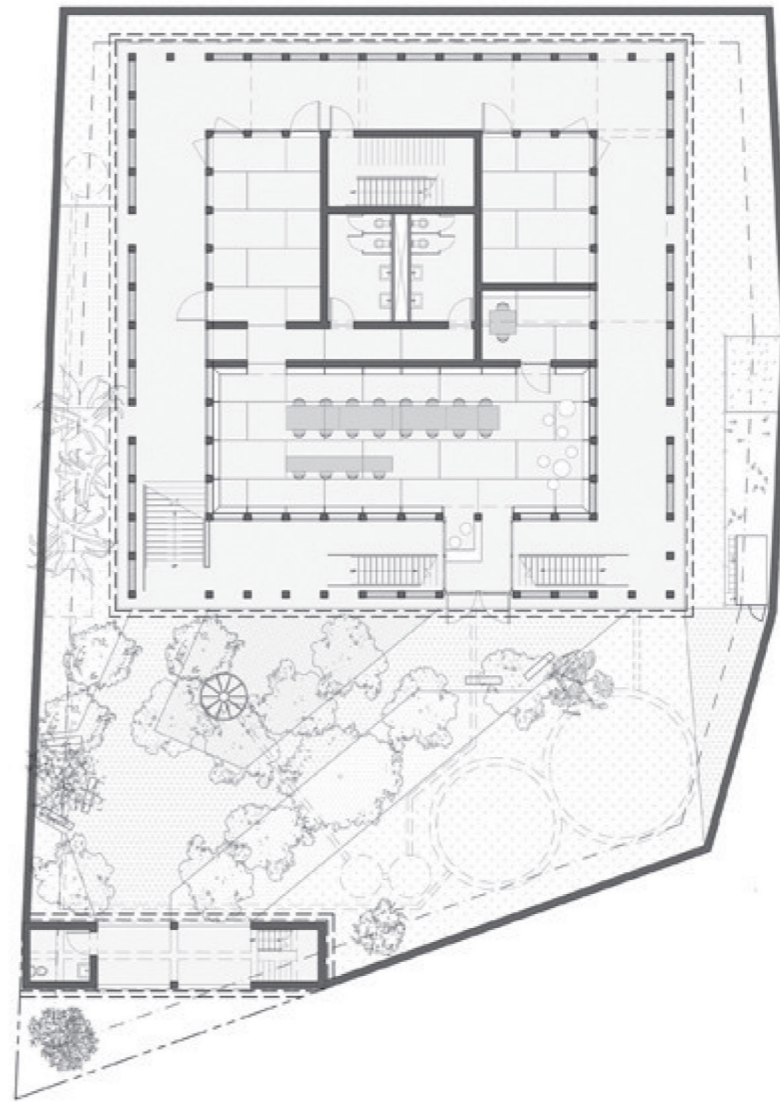
One of the first things I knew before embarking on this project was that there are very few, if any, institutions that aspire to providing orphans with the same quality of built environments as children in the first world are used to. Unfortunately, orphanages are usually extremely limited in their budgets and hence even though there is some design creativity in their conception, the overall result does not compete with a modern elementary/ high school that we may see in developed countries today. Looking at the following precedents I was able to study scale, programmatic requirements, modern spatial strategies that promote learning and above all, architectural do's and don'ts that would help me convey my aspiration for 'a world class institution' that would be second to no other in Paksitan.



**Falataw.Jigiyaso
Orphanage**

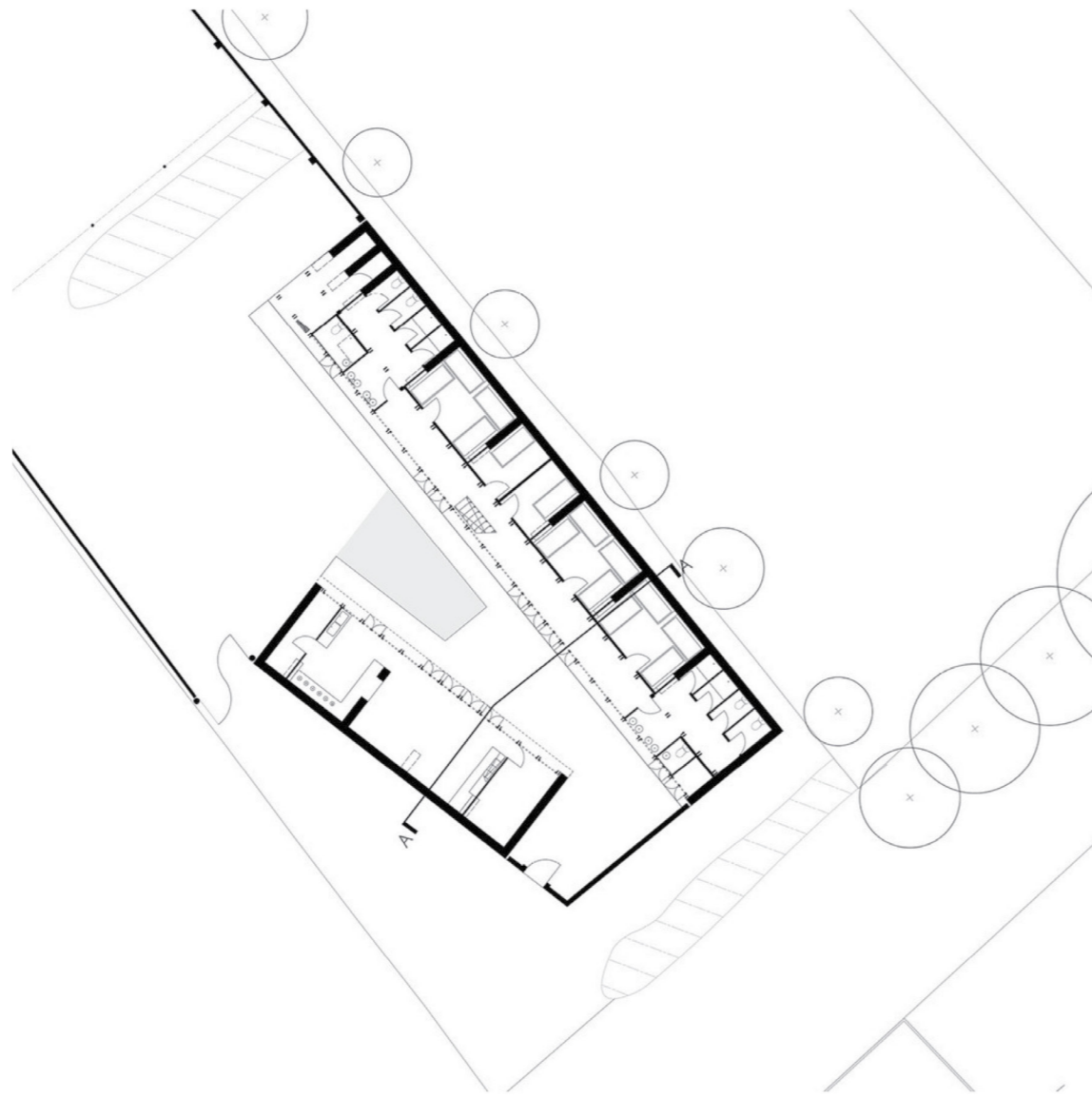


**Lali.Gurans.Nepal
Orphanage**





Nakuru. Kenya

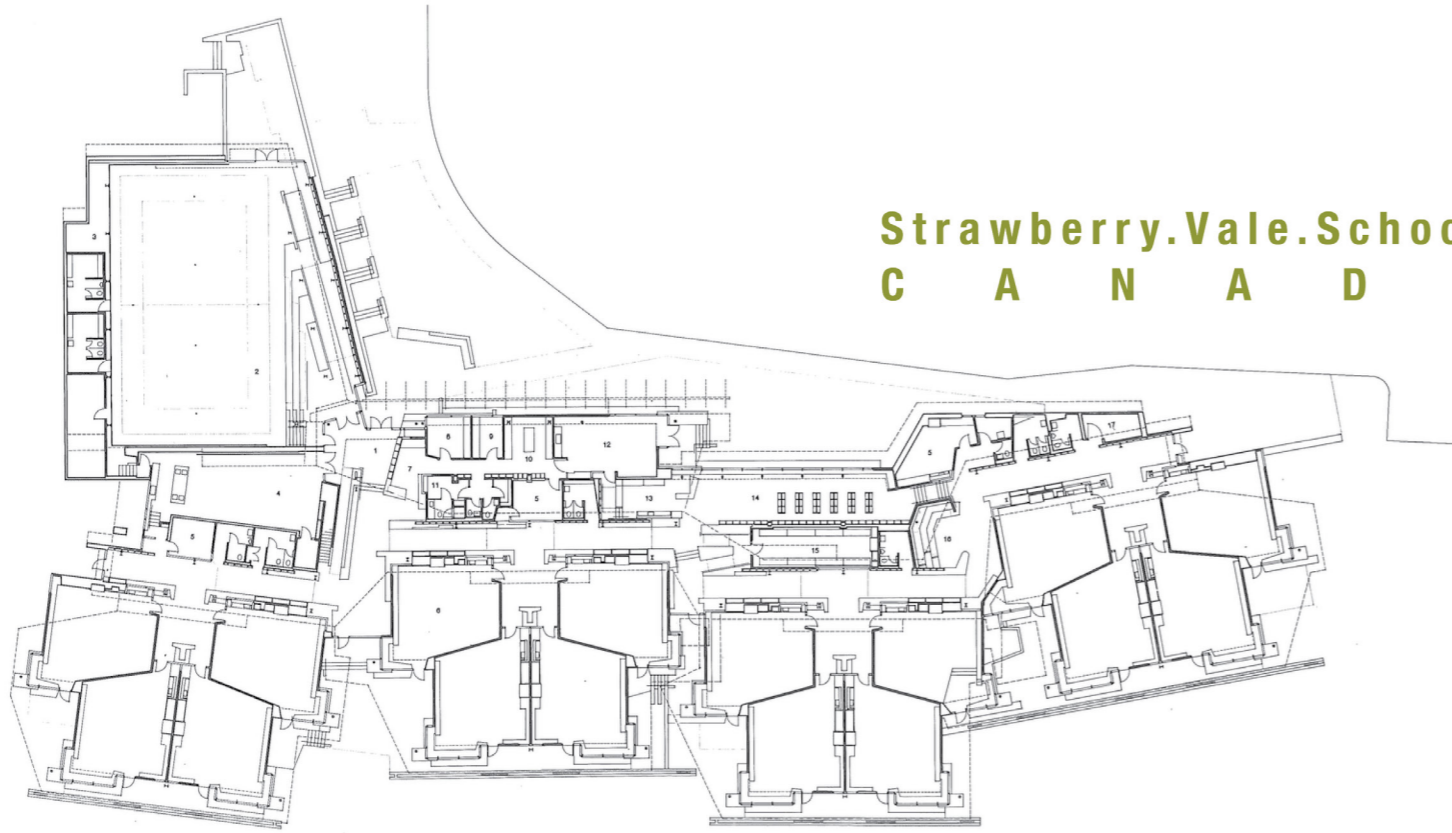


Tel Aviv. Elementary. School

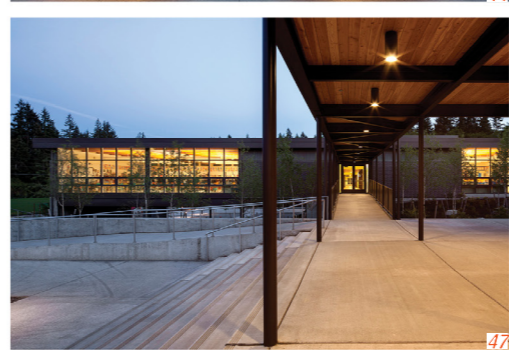
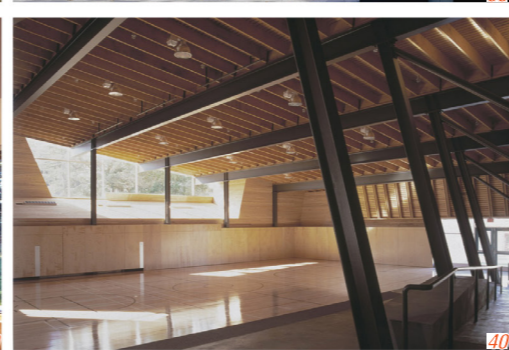




Strawberry.Vale.School
C A N A D A



Wilkes.Elementary.School



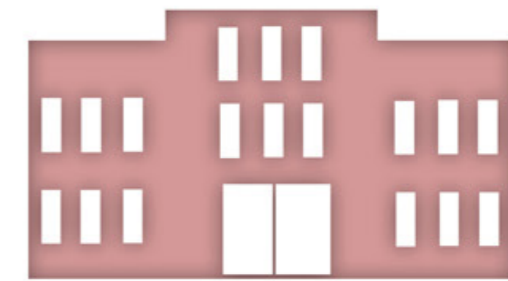


Vocational Training
Roof farm . workshops



School
196 Students
40% ⬆️ ⬆️ 60%

14 Classrooms . Library . IT Lab
Auditorium . Science Labs
Admin Offices . Support Spaces
Staff Room . Outdoor classroom
Roof Farm



Youth Hostel
30 Students - 15 rooms
30 guests - 30 rooms
Reception . Lounge.
Dining . Amenities



Faculty Housing
10 Educators

5 x 3BHK Units 3 x 2BHK Units
2 x 1BHK Units



Student Housing
80 Orphans
50% 50%

10 Student Homes
(8 Kids/Dwelling
+ 1 Foster mother)



14 YRS



4/5yrs



0-5 yrs



Community Engagement
Renovation + integration
of existing
sports field / park



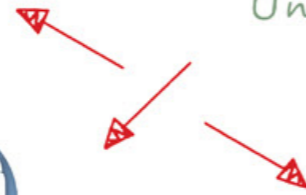
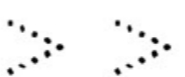
Sanctuary
Multi faith
contemplation pavillion



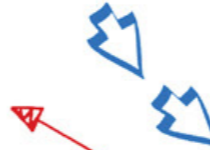
Mosque
Main Space
Ablution
Support Spaces



Madrasasa
Arrival Courtyard
Central Space
Library
4 Classrooms
Staff Room
Support Spaces



6/year



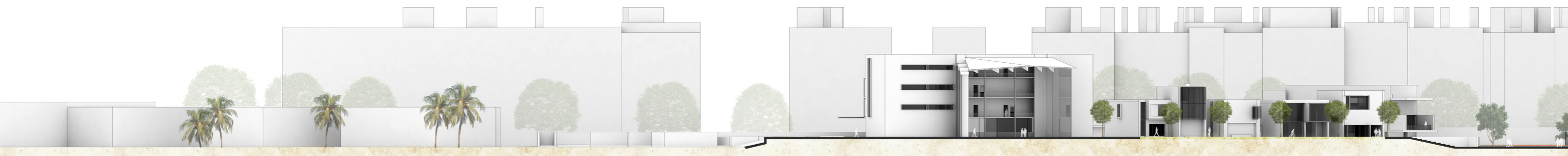


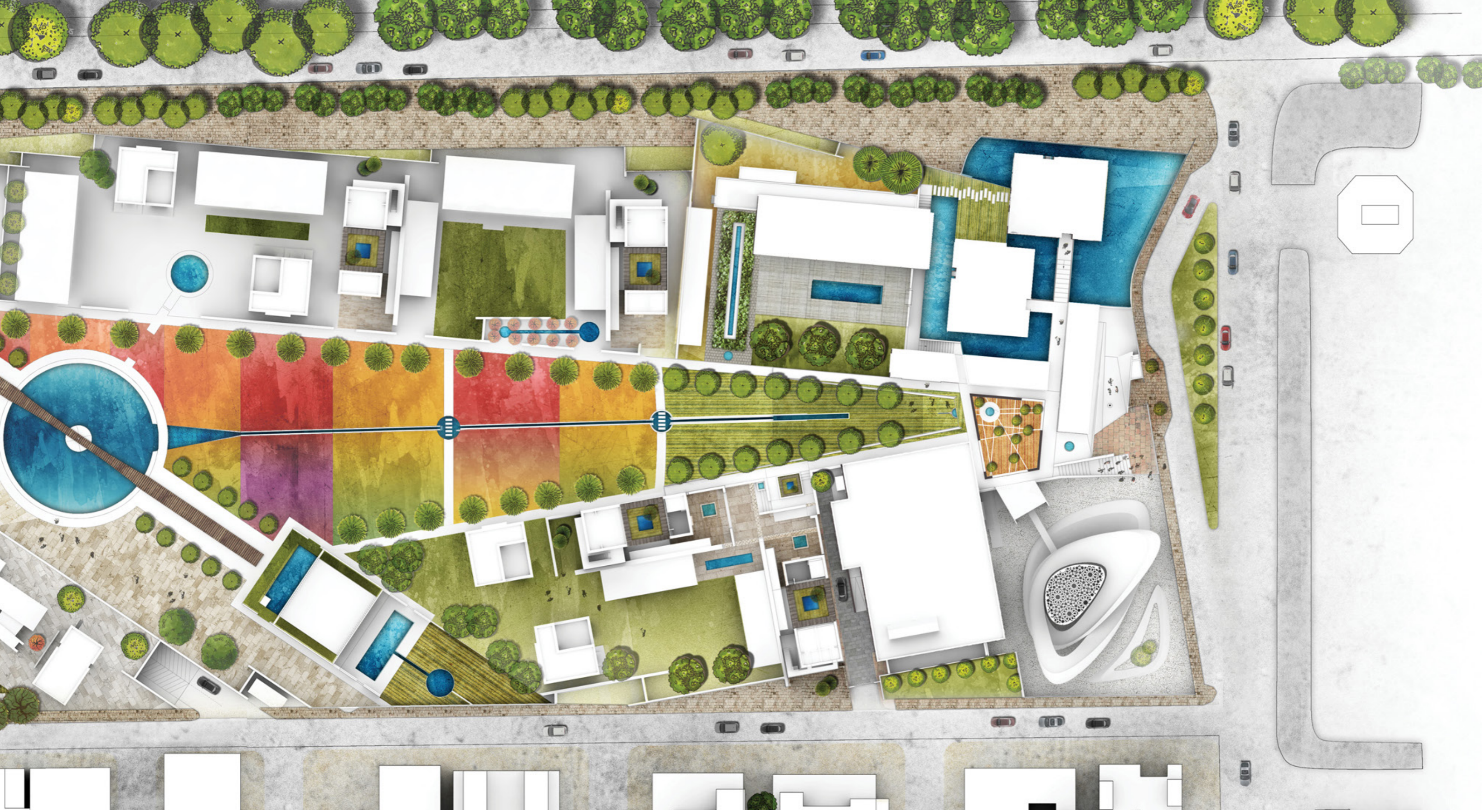
- School
- Madrasa
- Student Housing
- Faculty Housing
- Youth Hostel & Boutique Hotel
- Community Engagement
- Worship Pavilion
- Mosque

Design Intent

The Primary focus in the final master plan is to create a central public space that all stakeholders would have equal access to. This would be a place for the campus community to come together and forge memorable relationships. Concurrently there are smaller public & private spaces of varying scales and degrees of privacy layered into the campus fabric. The angular split of the school buildings allows for an open vista looking over a beautiful flower farm stemming from a central elevated courtyard. This space is another crucial meeting point for children arriving from outside and those walking to school from within the campus. Student housing is dispersed on either side of the flower farm catering to the need for segregation between older male and female students. A smaller vista mirrored along the dominant East West axis serves as a quad for faculty housing and the youth hostel plays the role of a terminus in this instance. Beyond the youth hostel is a cricket pitch dedicated for the resident community around the campus and also makes place for a community centre.



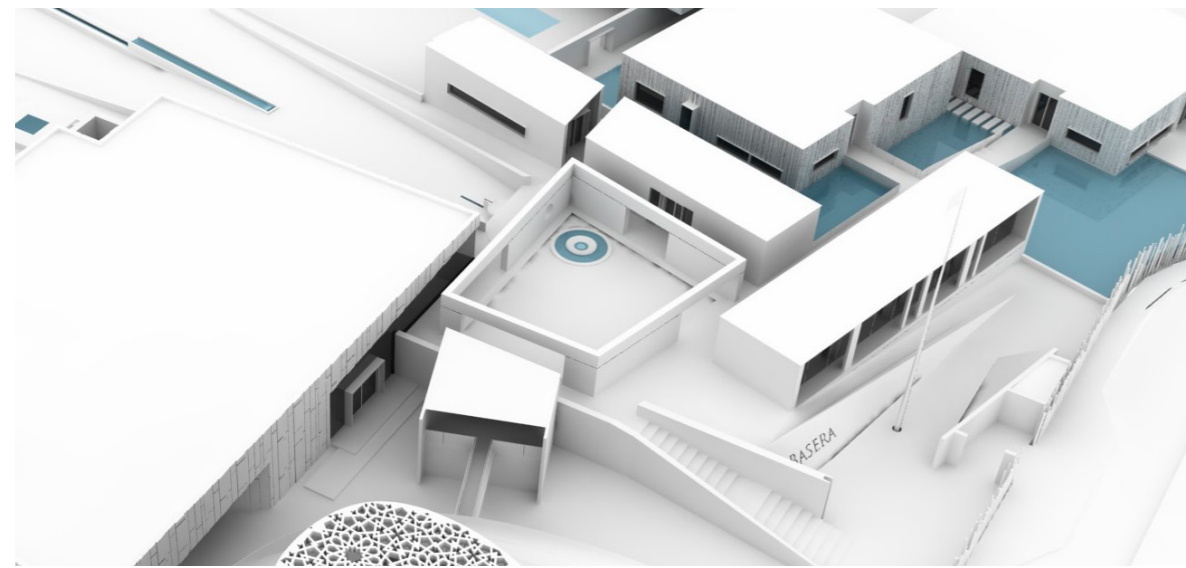






The School

These more detailed plans highlight the relationships between components of the educational block on campus. The school buildings are elevated at different heights to firstly create interest in the architectural journey as well as a functional reason of reaching the elevated courtyard which eventually reveals the wide vista overlooking the entire campus. Notice that the courtyard is centrally located from which circulation paths originate to access all other buildings. A special path leads you to the Madrasa pavilion which is described in more detail later in this book. The courtyard also serves as the meeting point for children arriving from off campus locations and those residing on campus.





Moments

The following images illustrate moments in the project as an inhabitant would perceive the designed spaces. Lighting, materiality, architectural details, and scale are all much easily read in images like these than standard 2D orthographic drawings and in most instances, hand sketches.



BASERA

Entrance View



Over primary school reflection pool

Looking back from primary school





From outside near drop-off



Central Courtyard





From primary school stairs looking at secondary school block



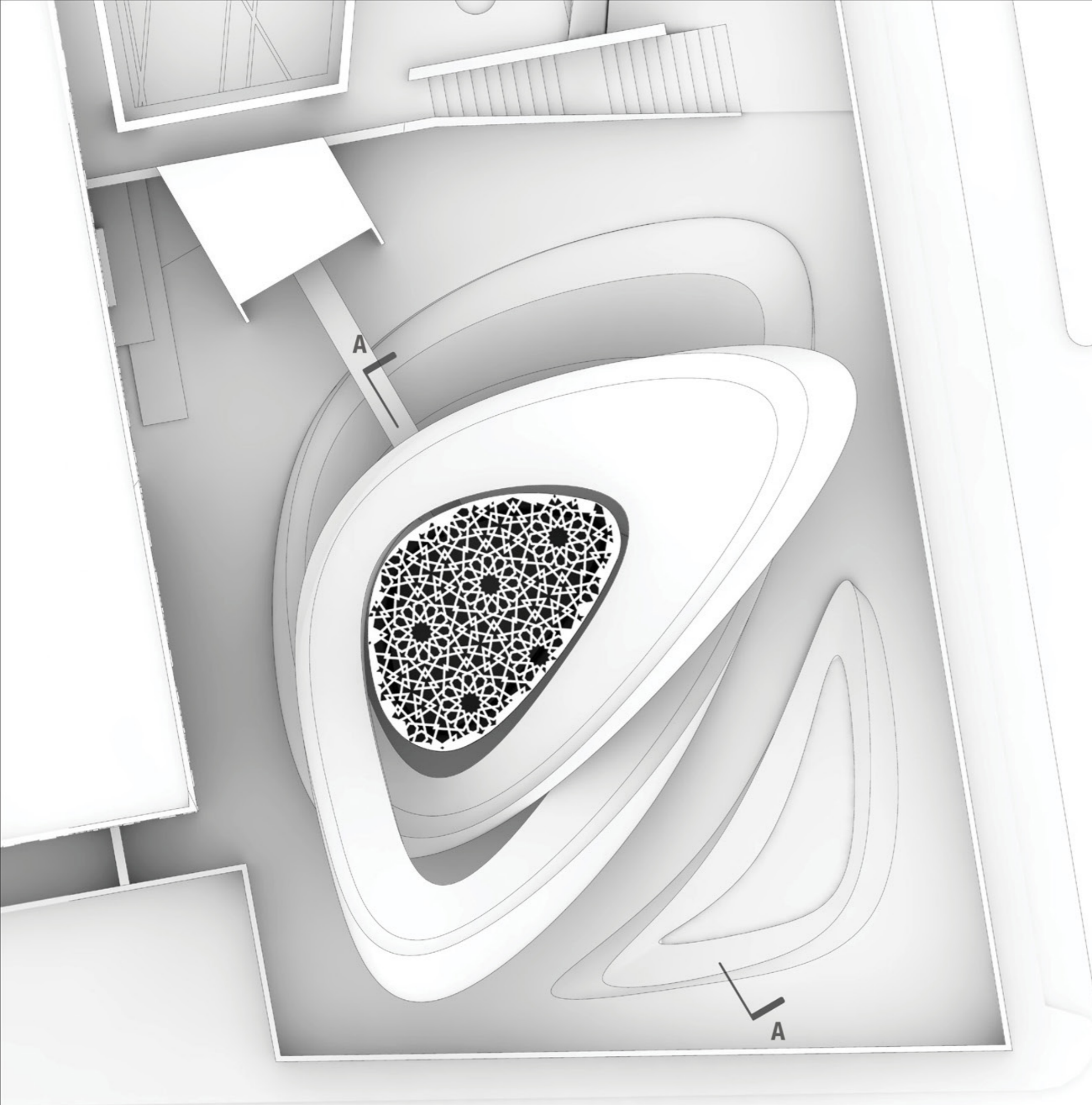
From primary school stairs looking at secondary school block - Open Shutters

Sports complex approach

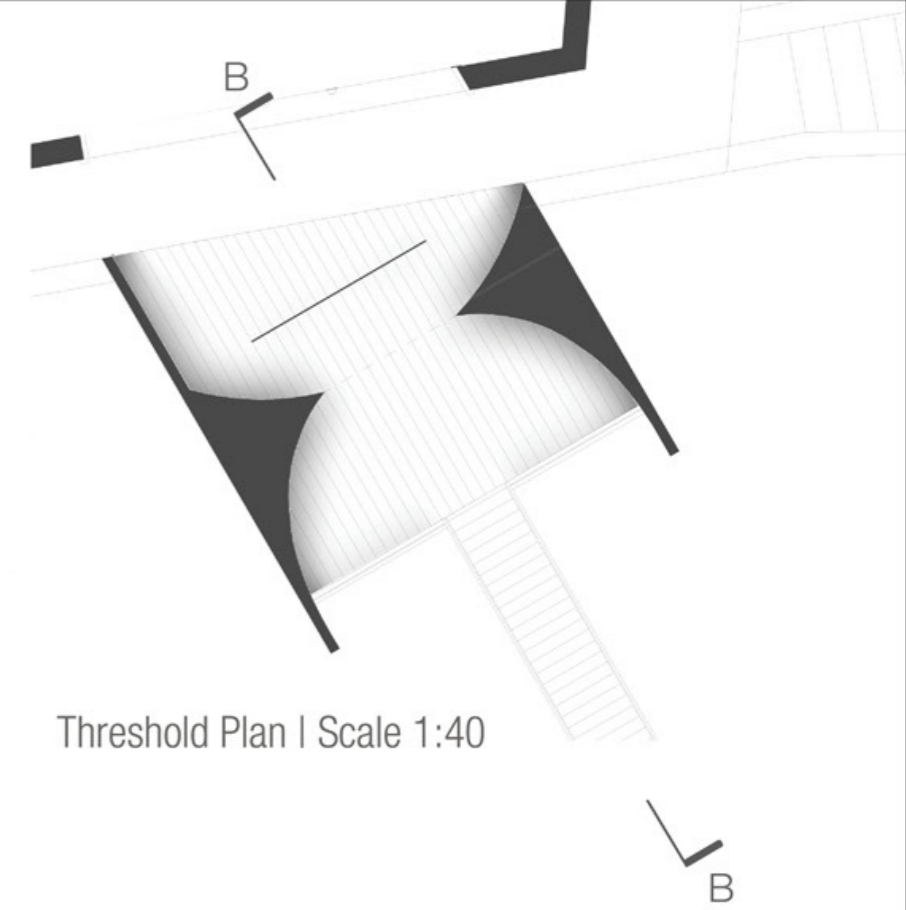


Madrasa

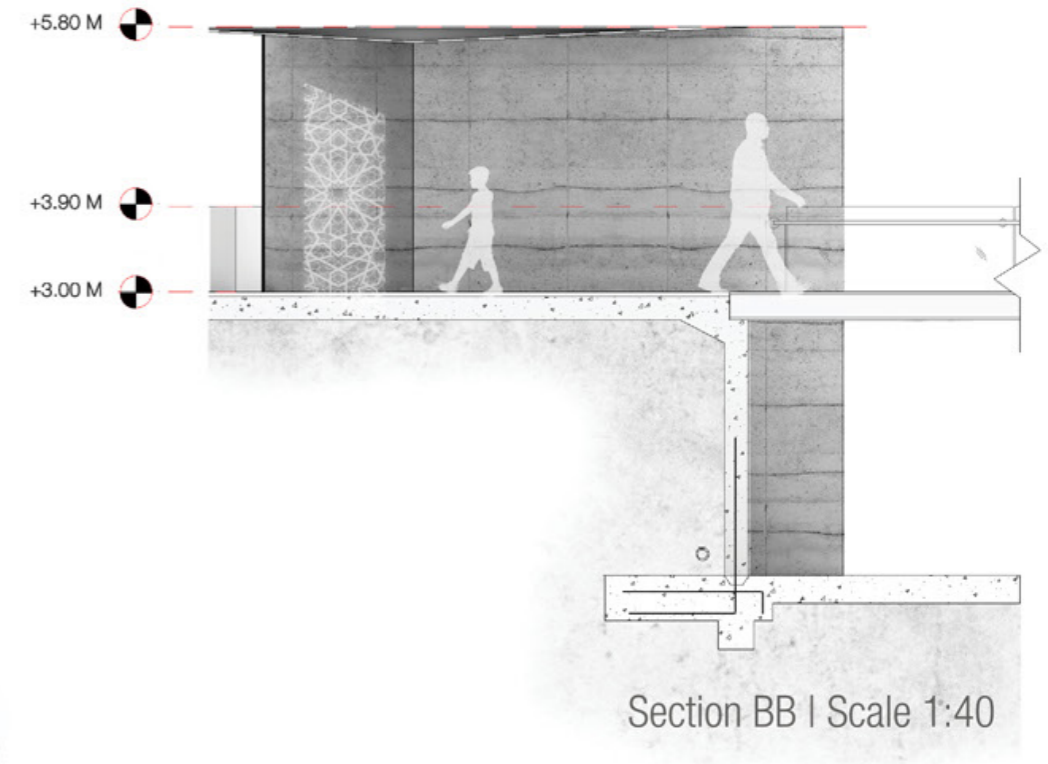
For considerable time now, there has been a divide between the traditional religious education system usually delivered in a “Madrasa” and the secular, global education system as we all know it. Hence modern generations have developed a stigma towards the traditional forms of knowledge which in my opinion are just as essential. In order to change this negative perception, architecturally, the Madrasa is the most spectacular building on campus. Accessed through an elegant threshold and an elevated bridge originating at the courtyard, the madrasa is a glass enclosed 2.5 story space with a beautiful ‘mashrabiya’ (patterned screen) serving as the roof. The volume glows like a gem at nightfall and brings in a wealth of natural light by day. Children usually sit on the floor as a symbol of humility to the sacred knowledge they are seeking.



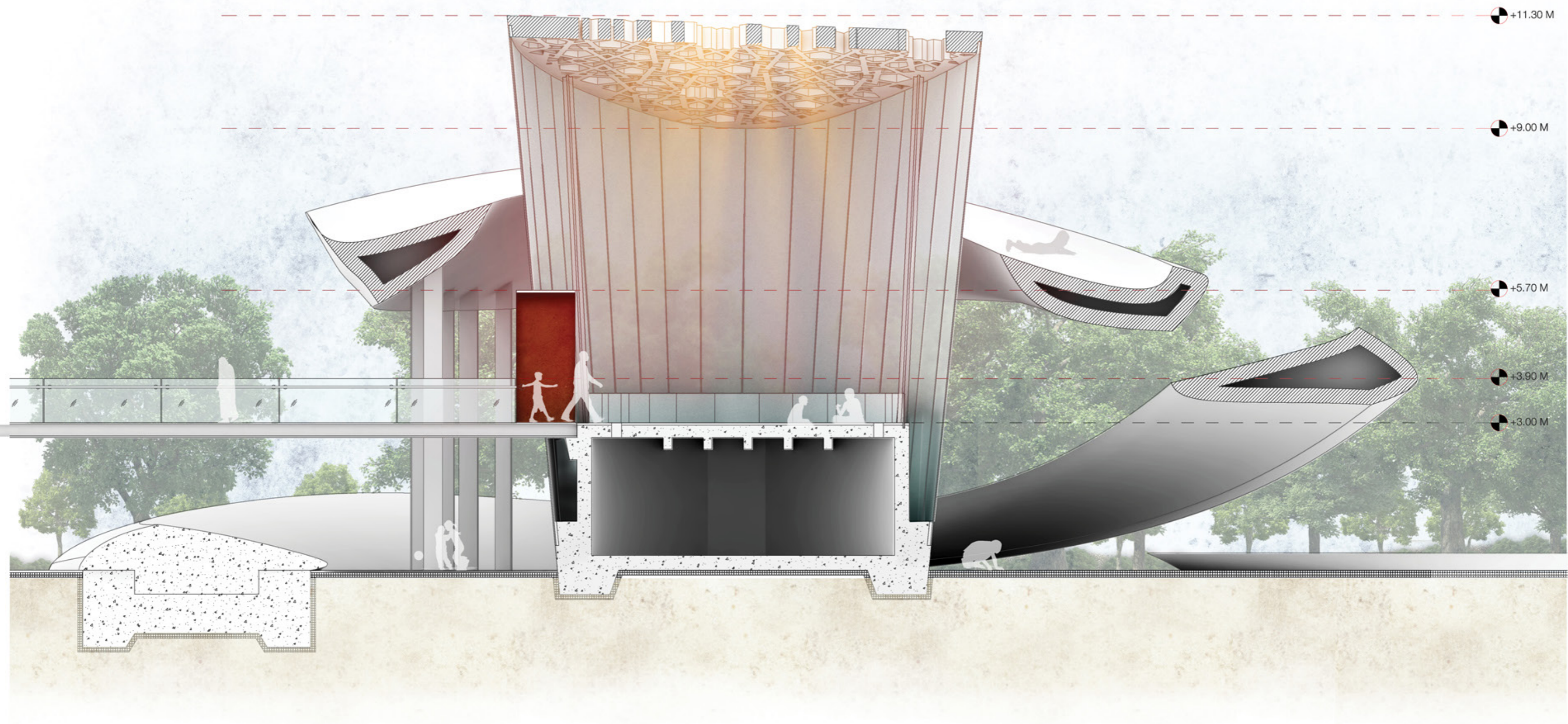
Madrasa Roof Plan | Scale 1:100



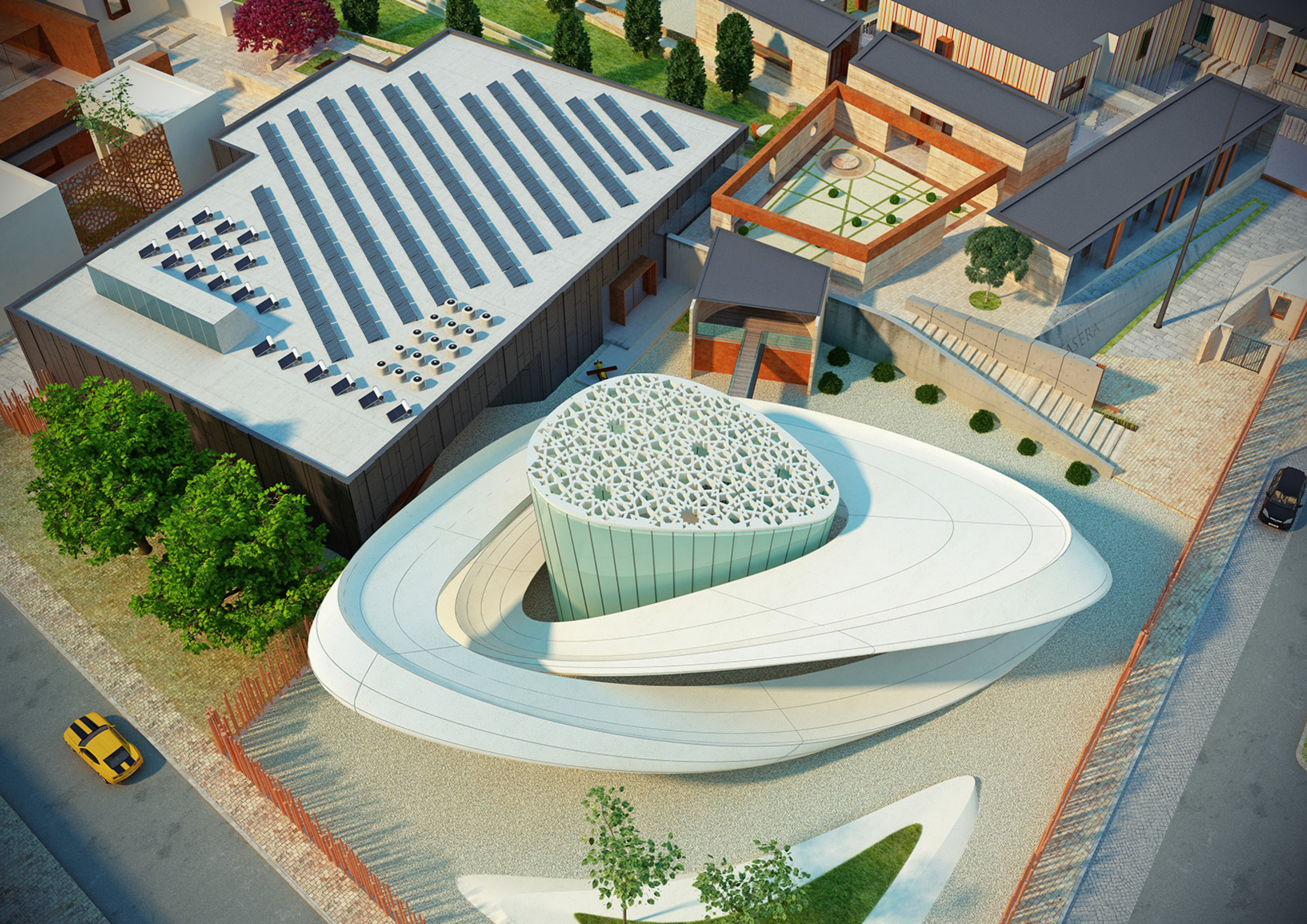
Threshold Plan | Scale 1:40



Section BB | Scale 1:40



Section AA

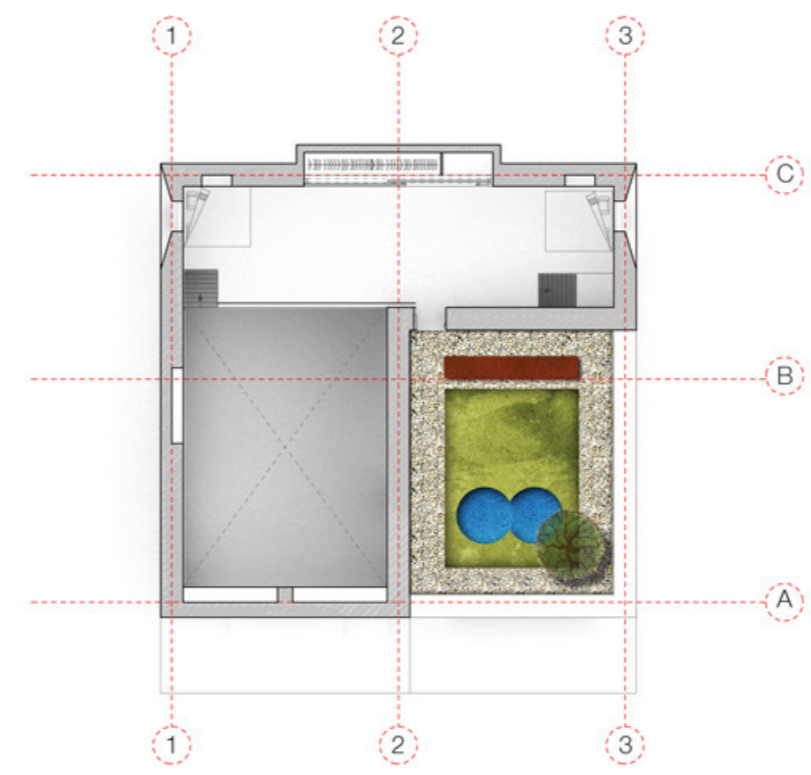
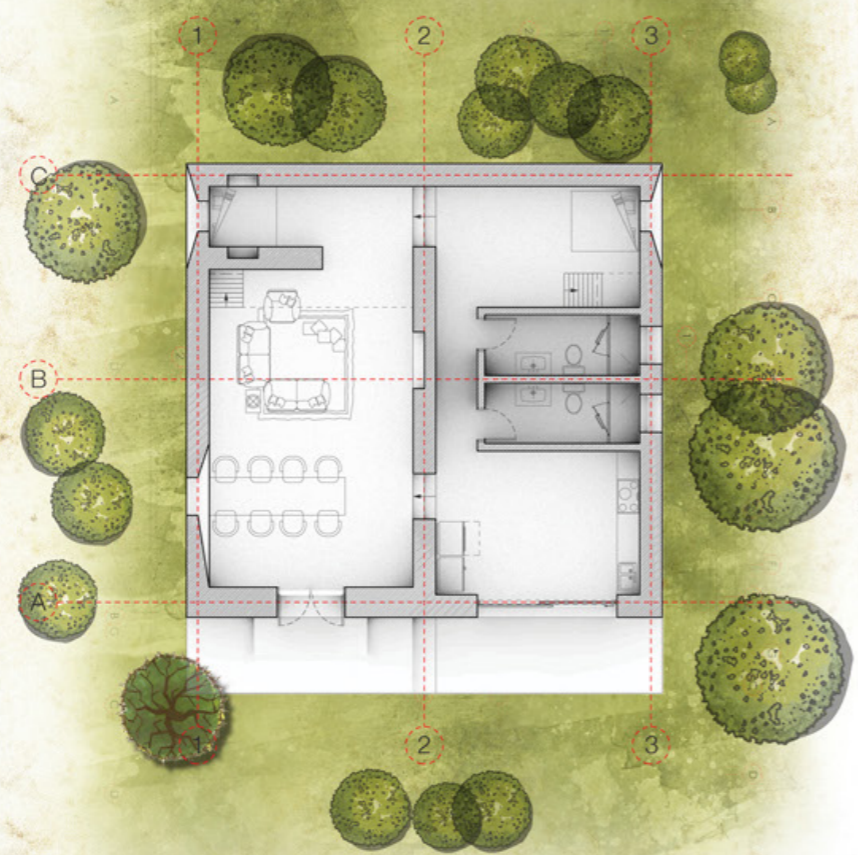


Student Housing

There are 3 types of student housing on campus; the main difference between each being size. As a child progresses through the school years she/he will move to a larger house. Student housing, in contrast to the other buildings on campus, are built with rammed earth but then plastered and painted white to achieve a more refined aesthetic. An aesthetic that they would see at the more lavish residences of their off campus counterparts. All housing is designed with a mix of interior/ exterior spaces where one may have to traverse in exterior courtyard in order to reach the adjacent interior room - a common trait of vernacular architecture. Additionally all, housing is designed to provide for interesting double height spaces usually serving as the communal family rooms or dining spaces. The openings are always made in a particular style in order to express the depth of the rammed earth walls and to create a dynamic play of light and shadow. Finally, roofs/ terraces are either used for sustainability features such as PV panels or rainwater harvesting or floating gardens looking over larger landscaped spaces within the student communities.

Basera | Haven
for.the.less.fortunate
Wasib.Mahmood.M.Arch.1
Student.Housing
T y p e . 1

Scale 1:100
0 1 2 5 10m



Front Elevation

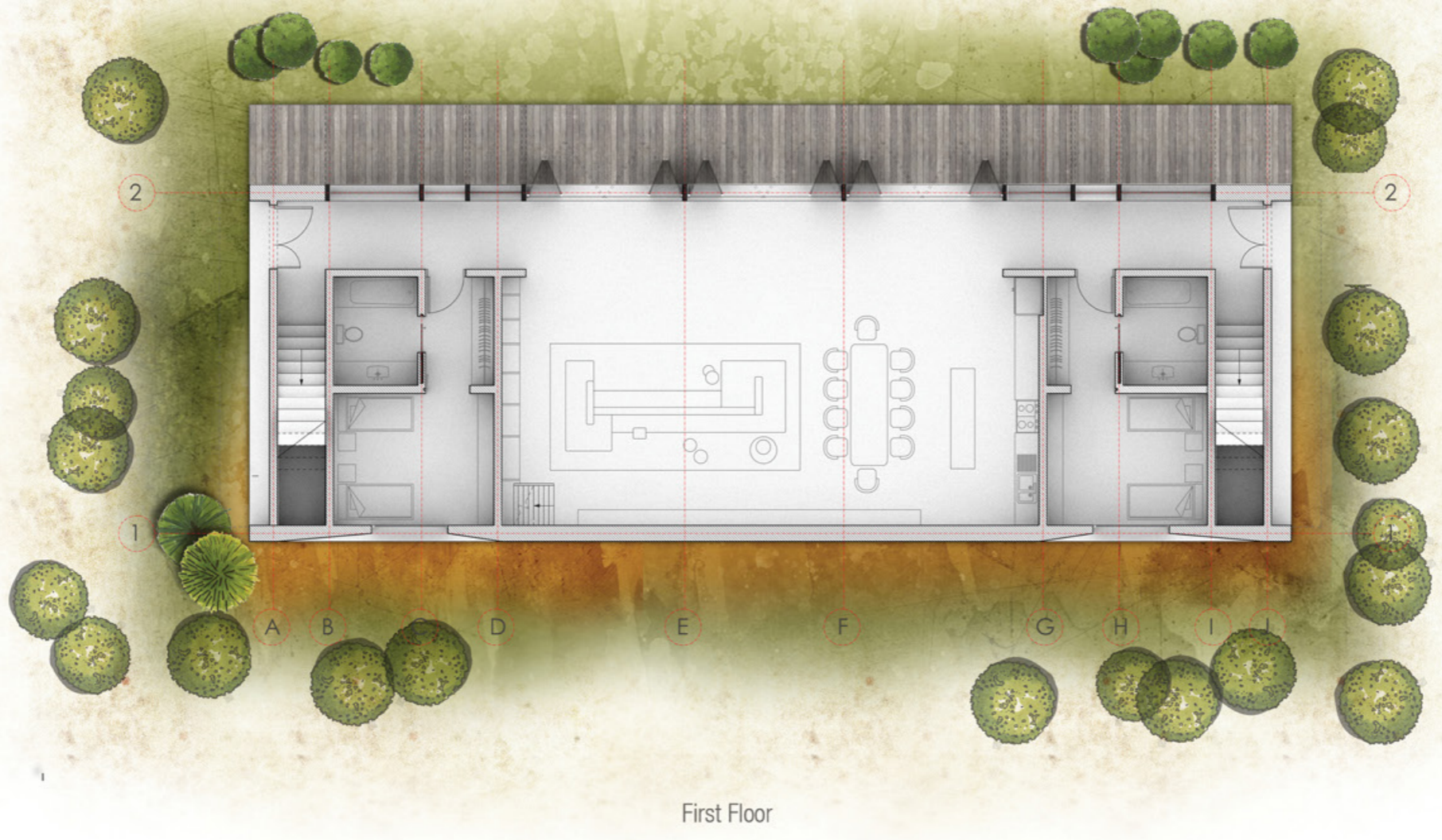
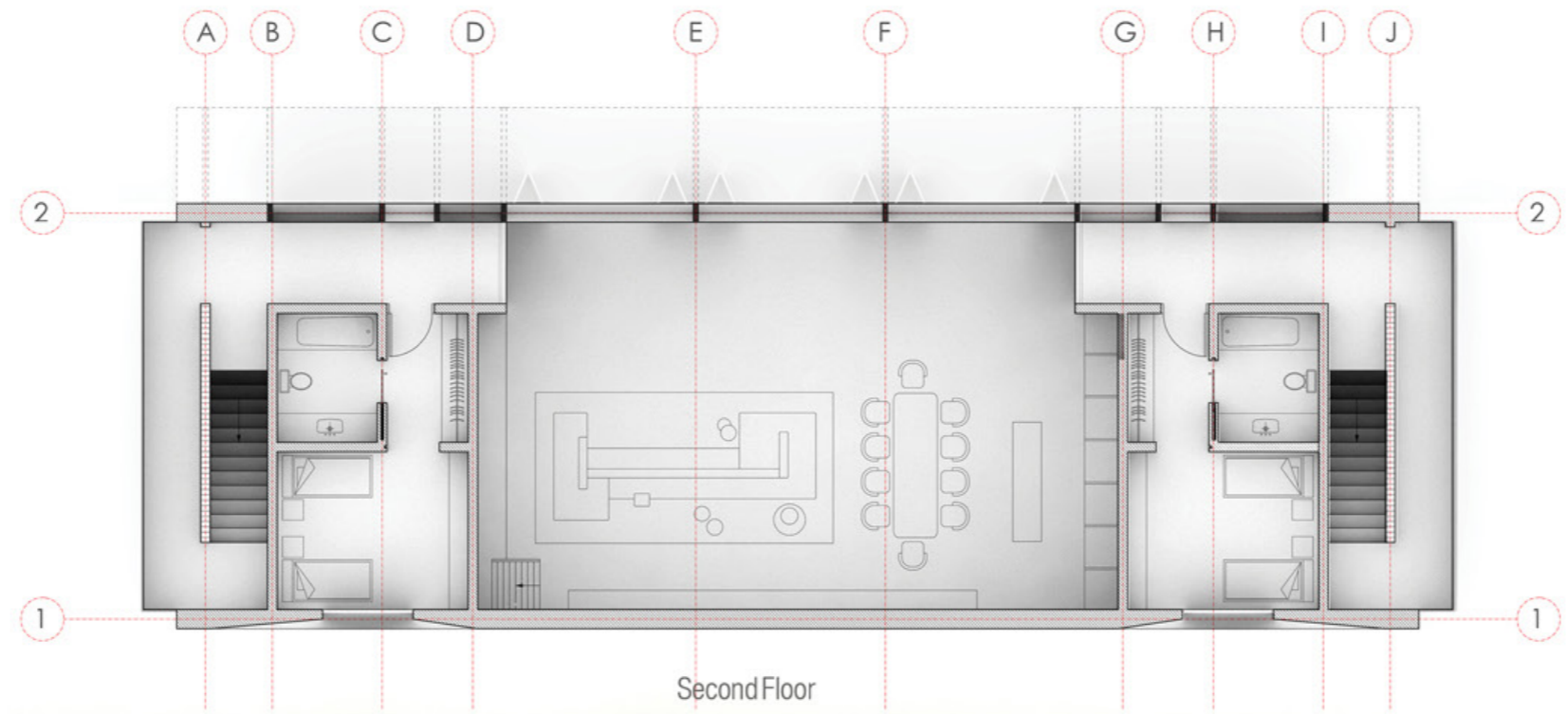
Right Elevation

Rear Elevation

Left Elevation

Basera | Haven
for the less fortunate
Wasib.Mahmood.M.Arch.1
Student.Housing
T y p e . 2

Scale 1:75
0 1 2 5 10m



Basera | Haven
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Wasib.Mahmood.M.Arch.1
Student.Housing
T y p e . 2

Scale 1:75
0 1 2 5 10m



Front Elevation

Right Elevation

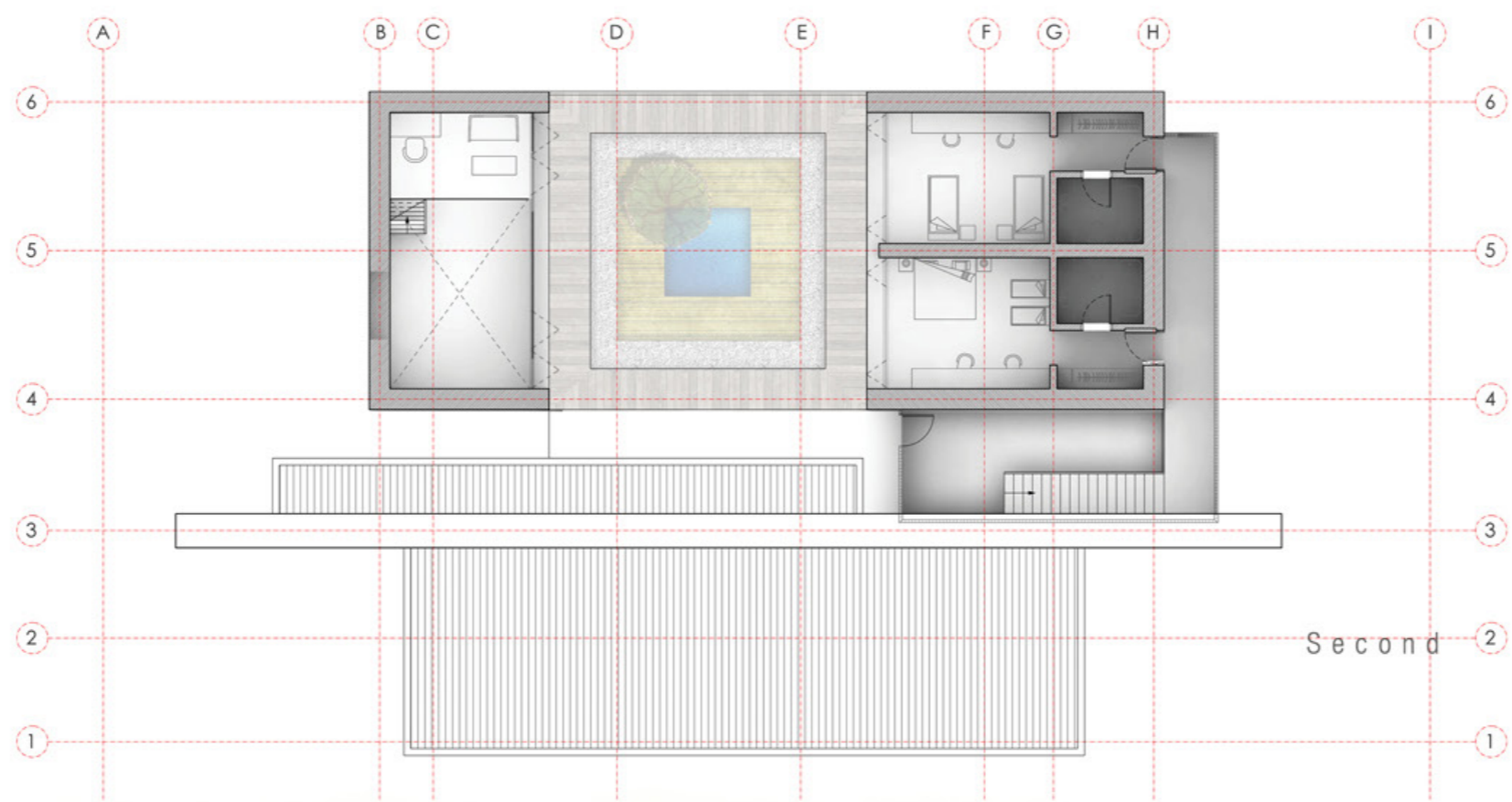


Rear Elevation

Left Elevation

Basera | Haven
for the less fortunate
Wasib.Mahmood.M.Arch.1
Student.Housing
Type . 3

Scale 1:100
0 1 2 5 10m



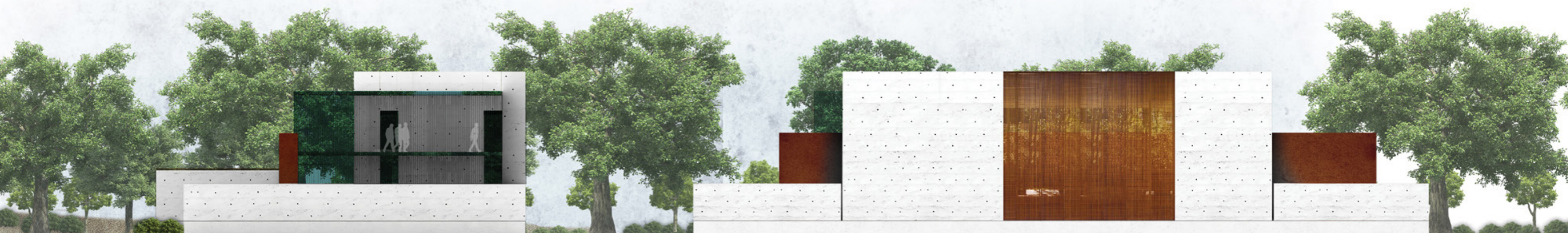
Basera | Haven
for.the.less.fortunate
Wasib.Mahmood.M.Arch.1
Student.Housing
T y p e . 3

Scale 1:100
0 1 2 5 10m



Front Elevation

Right Elevation

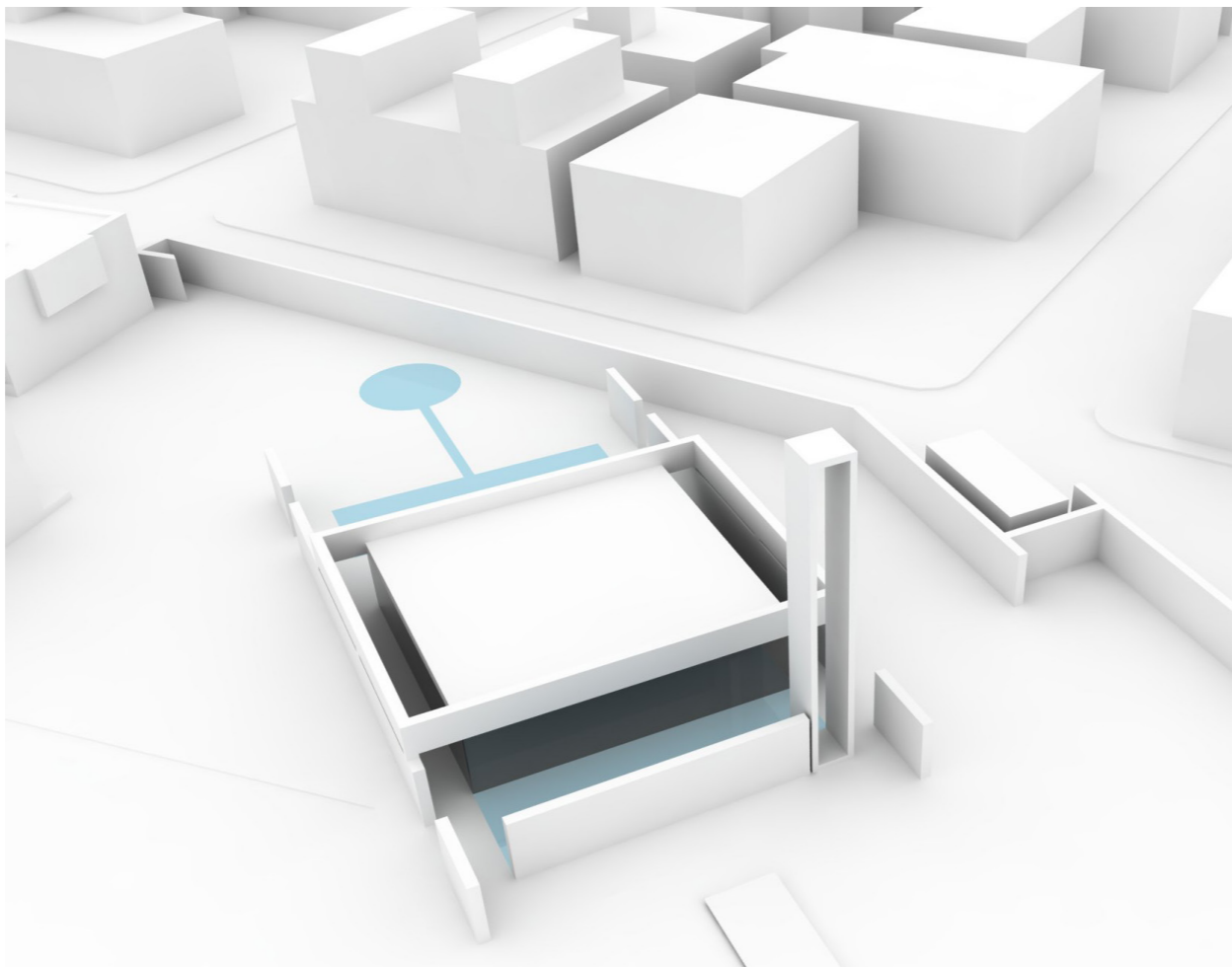


Rear Elevation

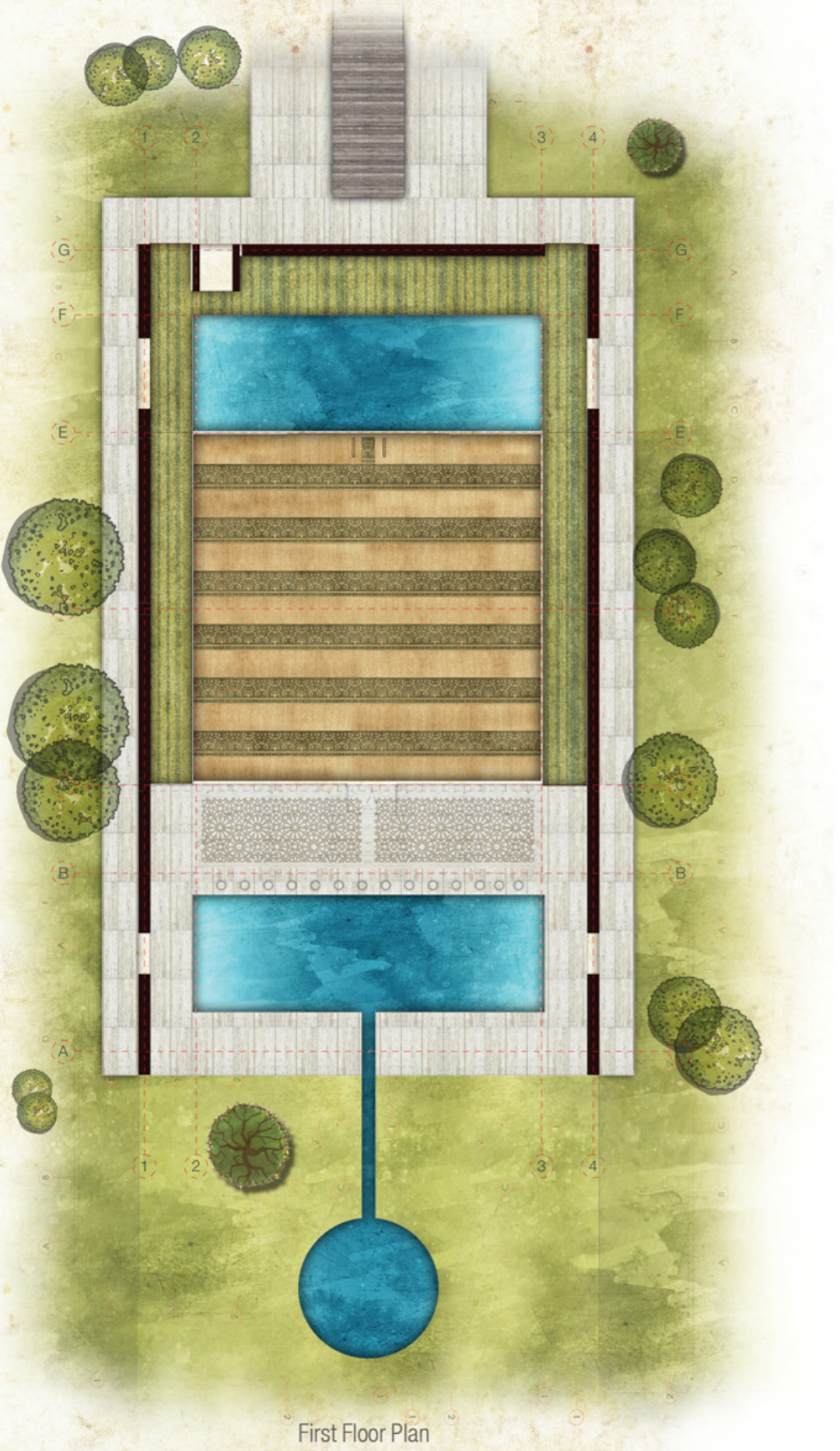
Left Elevation

Mosque & Contemplation Pavilion

95% of Pakistan's population are Muslims and worship plays an important role in their daily lives. Assuming a majority Muslim composition in Basera, a mosque was an integral feature of the program. Other residents however also needed a space for spiritual sustenance and hence a contemplation pavilion seemed like an appropriate response. It was interesting that the mosque (from Pakistan) needed a Western orientation towards Mecca and the Christian faith always requires an Eastern orientation. This gave me an opportunity to place the two worship spaces facing each other with the central public space straddled in between. It was an ideal metaphorical symbol of harmony amidst the growing tensions between people of different faiths worldwide.



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Wasib.Mahmood.M.Arch.1
M o s q u e



First Floor Plan



Front Elevation



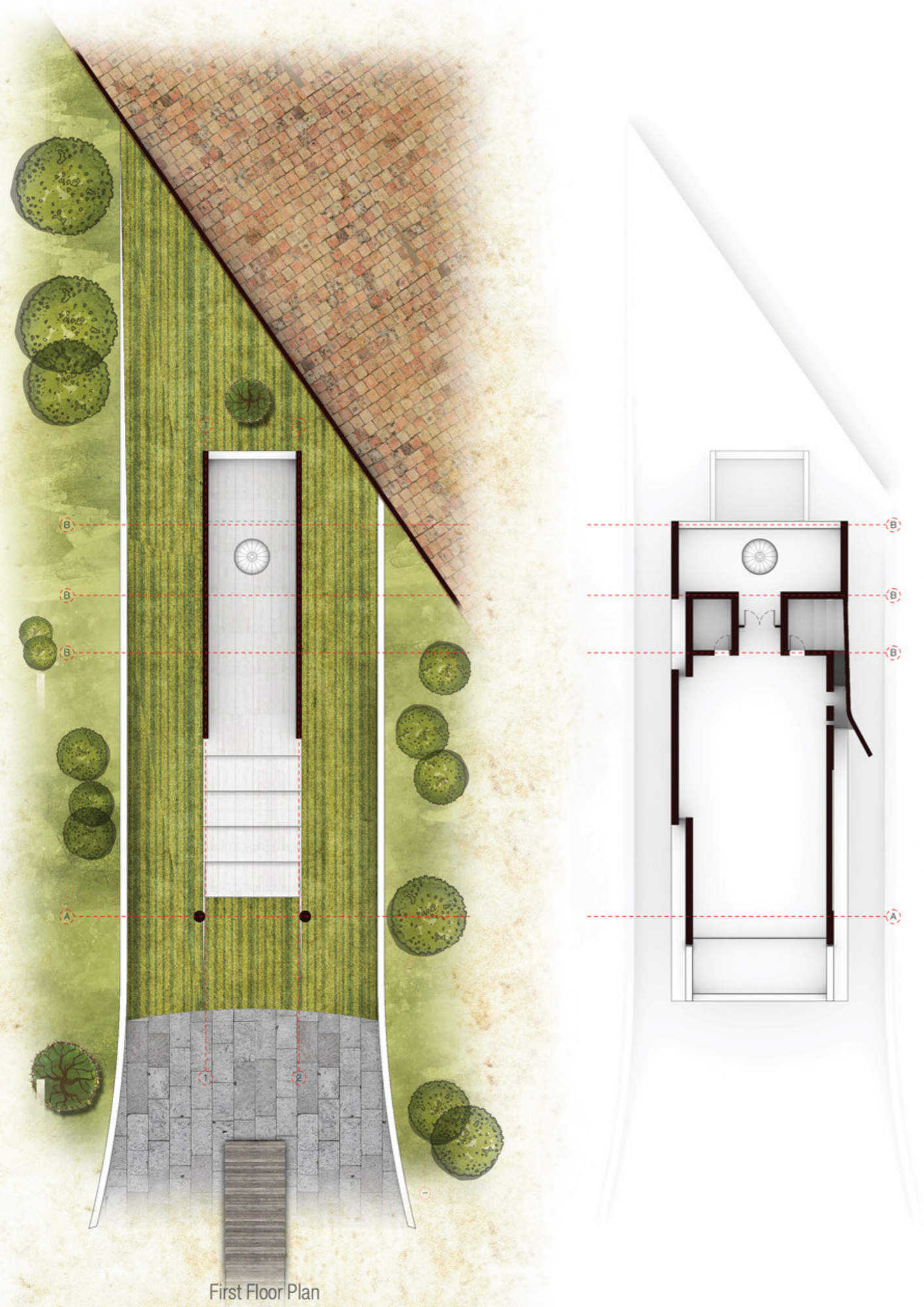
Left Elevation



Rear Elevation



Right Elevation



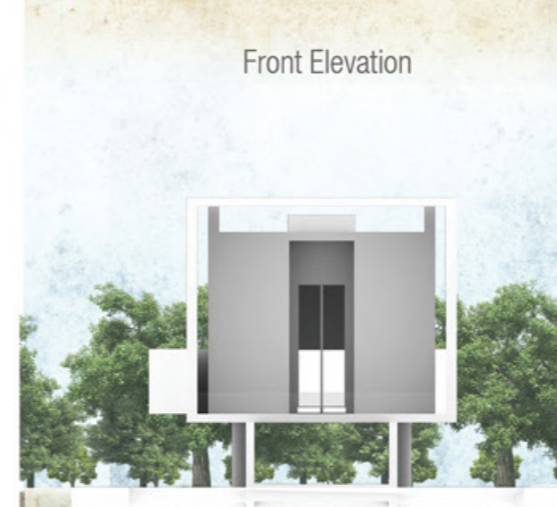
First Floor Plan



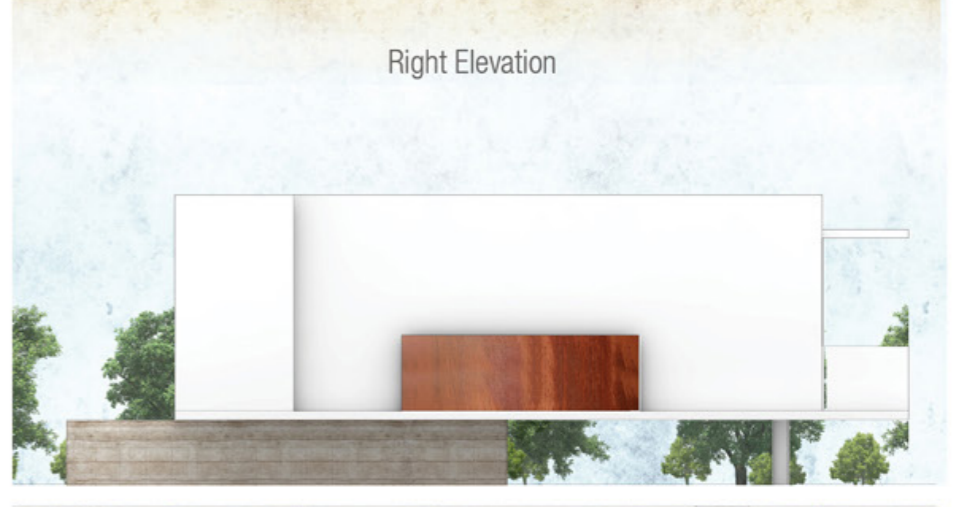
Front Elevation



Right Elevation



Rear Elevation



Left Elevation

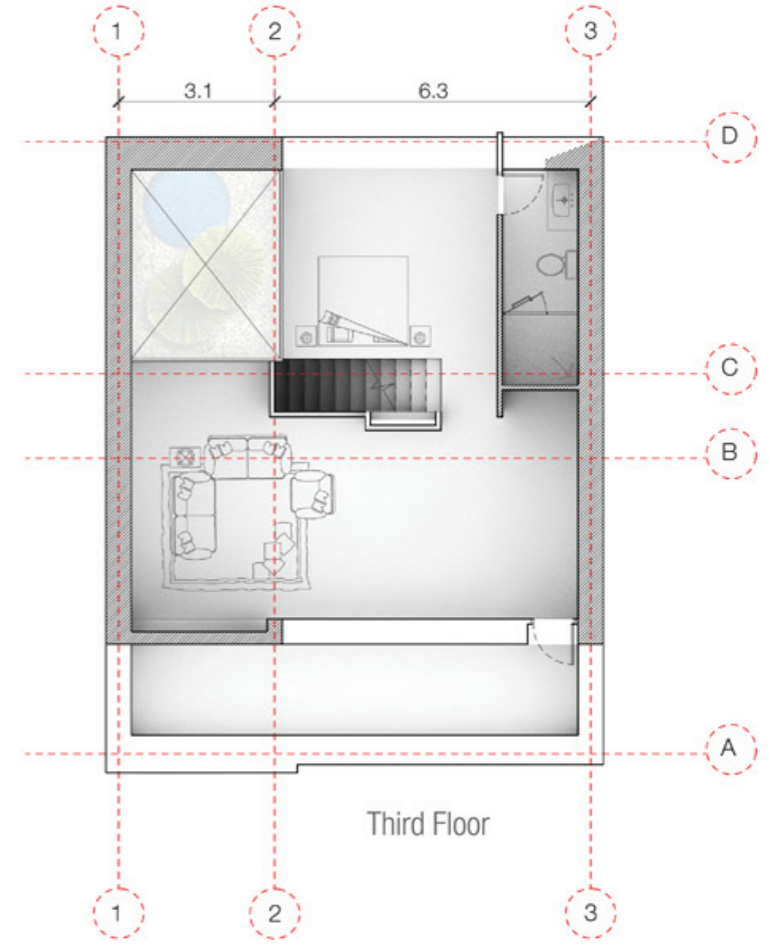
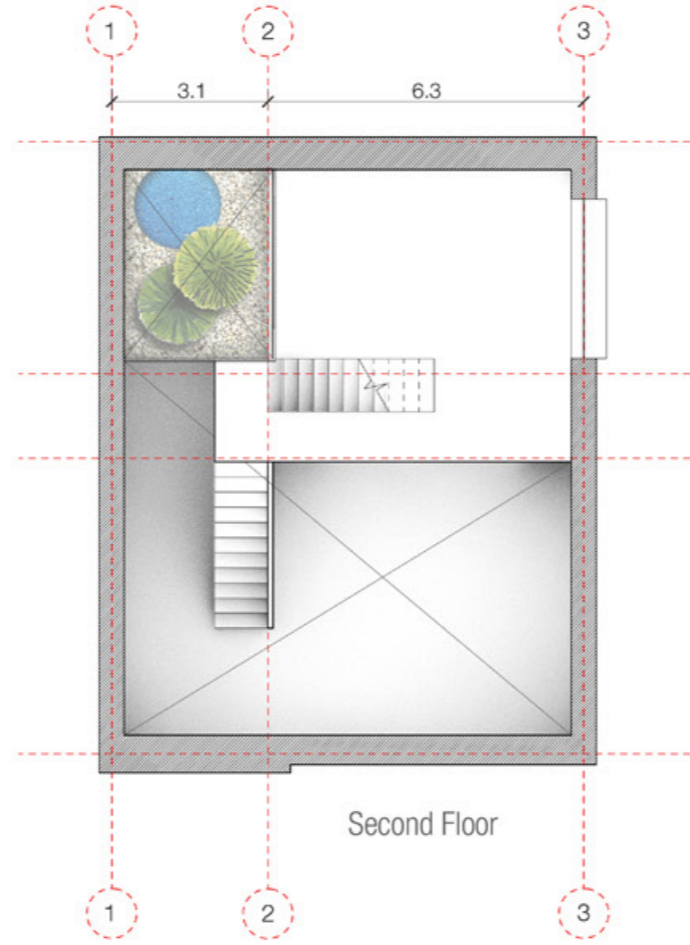
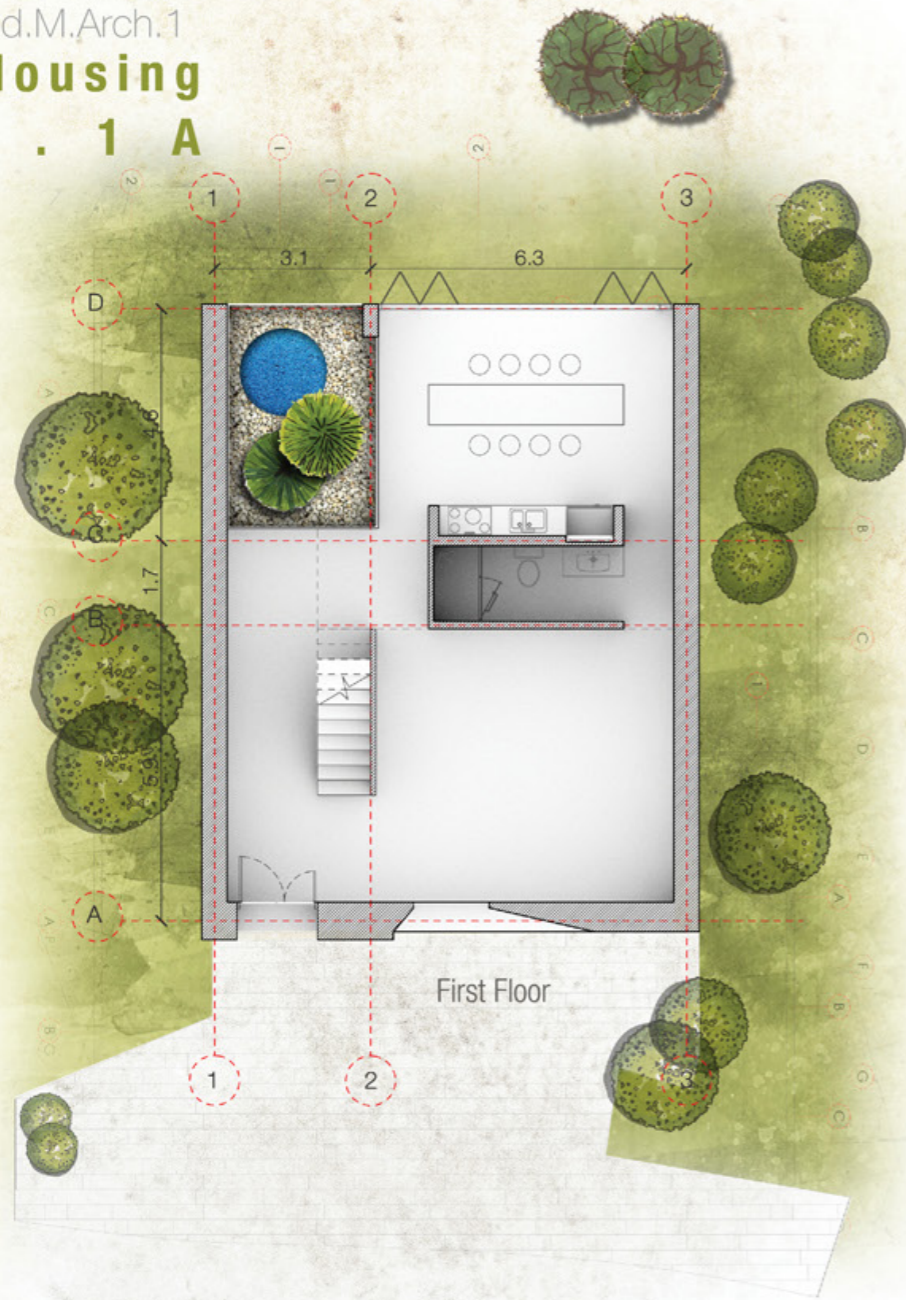
Faculty Housing & Youth Hostel

A key incentive to wealthy families in Karachi for choosing Basera is the world class teaching standards. In order to achieve this, teachers will be hired from across North America & Europe and will reside on campus fostering an even stronger student teacher relationship as well as serving as role models for orphan children. Assuming that faculty members will be of varying backgrounds and family sizes, faculty housing are of 3 types. 1,2 & 3 bedroom units are designed with utmost care to provide a unique and in some ways luxurious stay at Basera. The architecture is very contemporary in its design and utilizes rammed earth, corten steel and large glass openings in order to create beautiful comfortable homes.

Basera not only needed to provide residence to students currently attending school but also to alumni who plan to pursue higher education in the city. Another aspiration of mine was for Basera to be a self sufficient institution without the need for charity fund raising or public donations. The answer to both these hurdles came in the form of a youth hostel and boutique hotel. The building is split into two wings, Student and hotel guests connected by a three story atrium in between. The hotel wing is intentionally oriented towards the brand new cricket stadium so it would be a popular place of stay during city leagues and tournaments. Furthermore, the central location of the entire campus makes Basera hotel the ideal choice for business guests.

Basera | Haven
for the less fortunate
Wasib.Mahmood.M.Arch.1
Faculty.Housing
Type . 1 A

Scale 1:100
0 1 2 5 10m



Front Elevation



Right Elevation



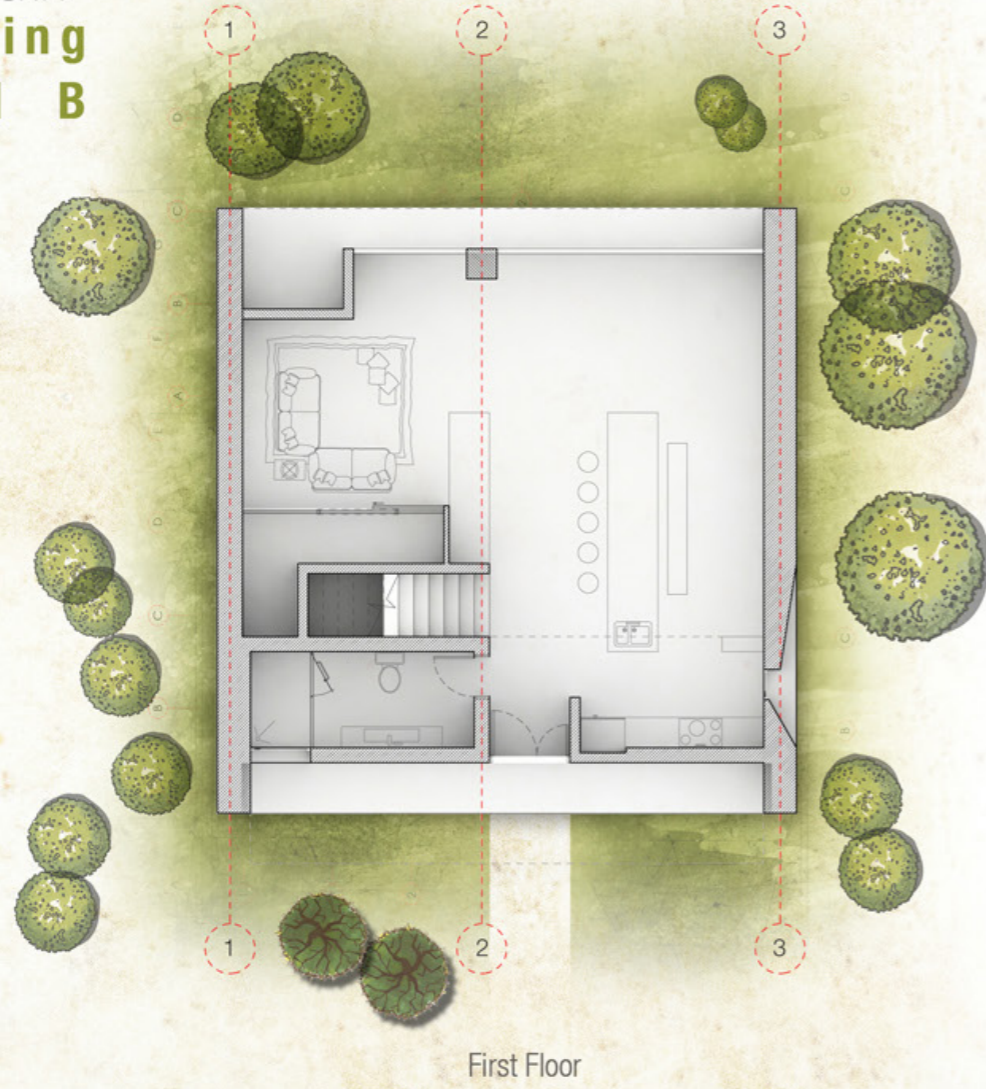
Rear Elevation



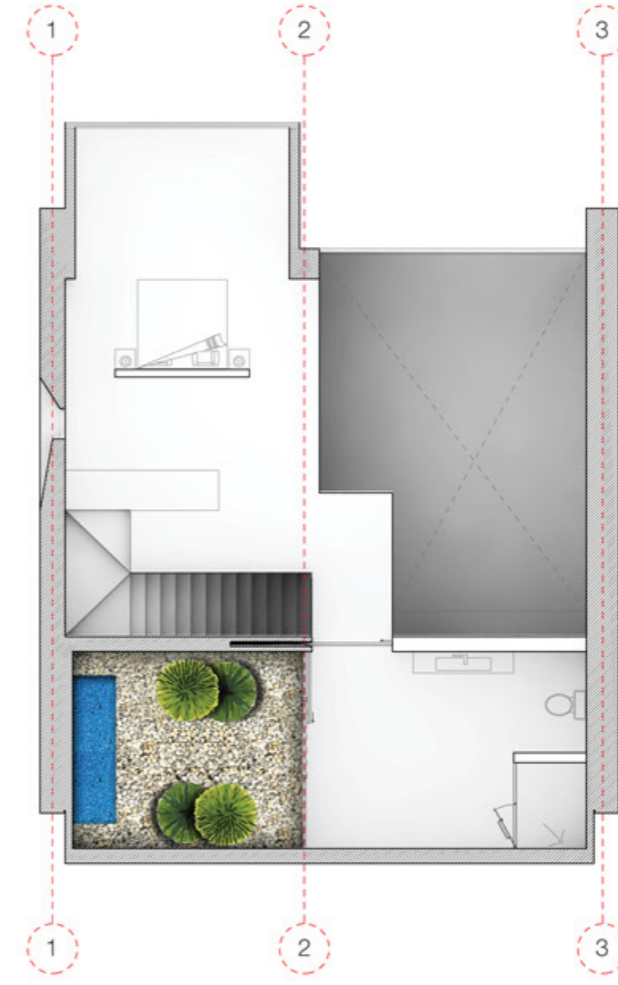
Left Elevation

Basera | Haven
for the less fortunate
Wasib.Mahmood.M.Arch.1
Faculty.Housing
Type . 1 B

Scale 1:100
0 1 2 5 10m



First Floor



Second Floor



Front Elevation

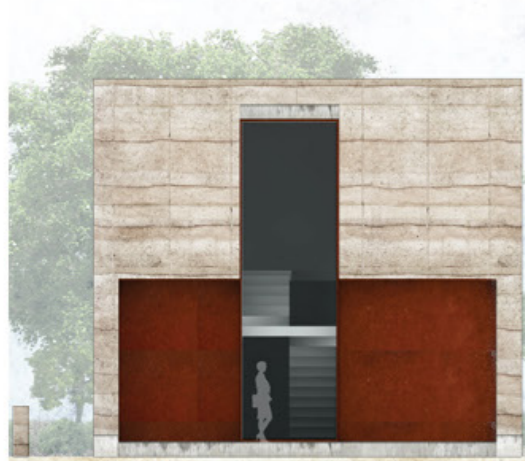
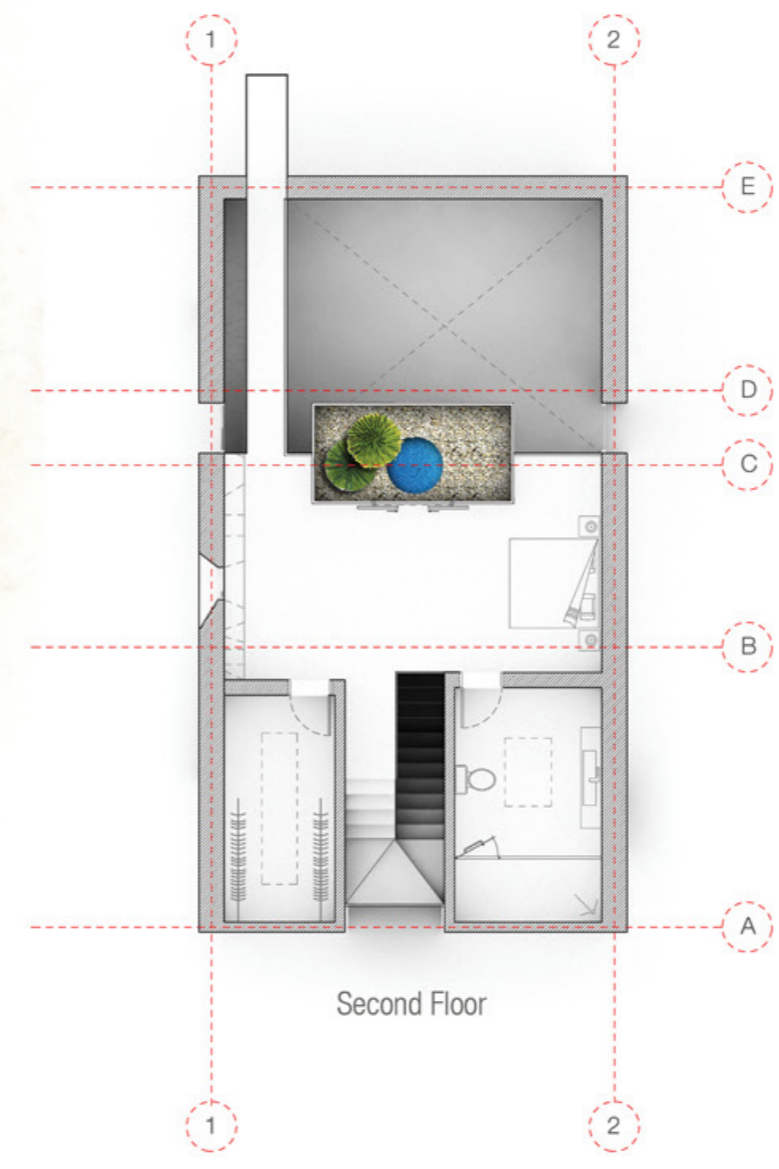
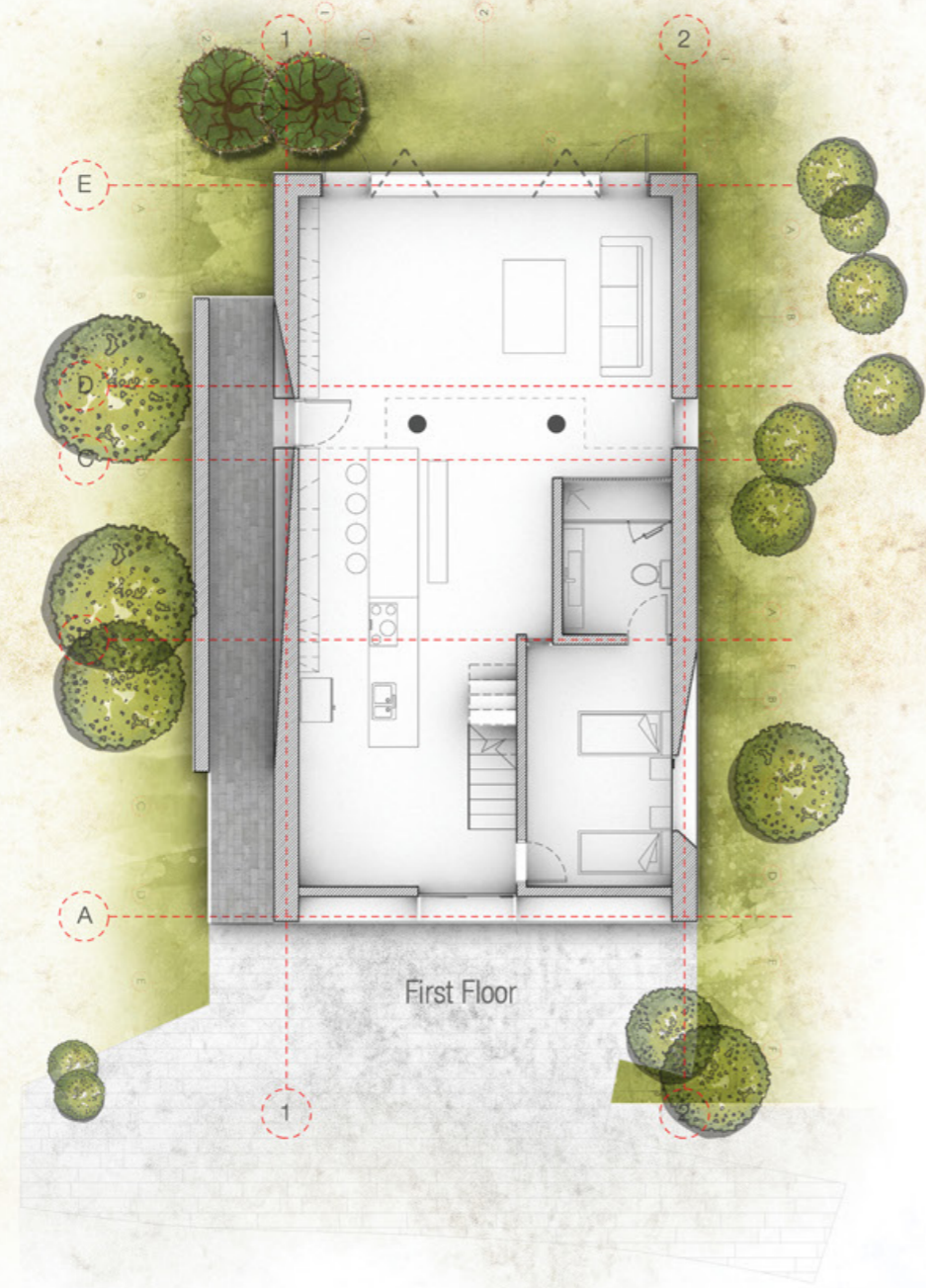
Right Elevation

Rear Elevation

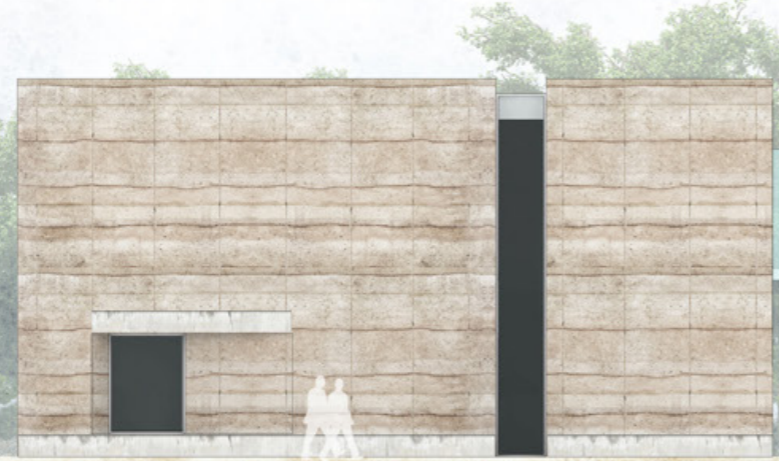
Left Elevation

Basera | Haven
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Wasib.Mahmood.M.Arch.1
Faculty.Housing
Type . 2 A

Scale 1:100
0 1 2 5 10m



Front Elevation



Right Elevation



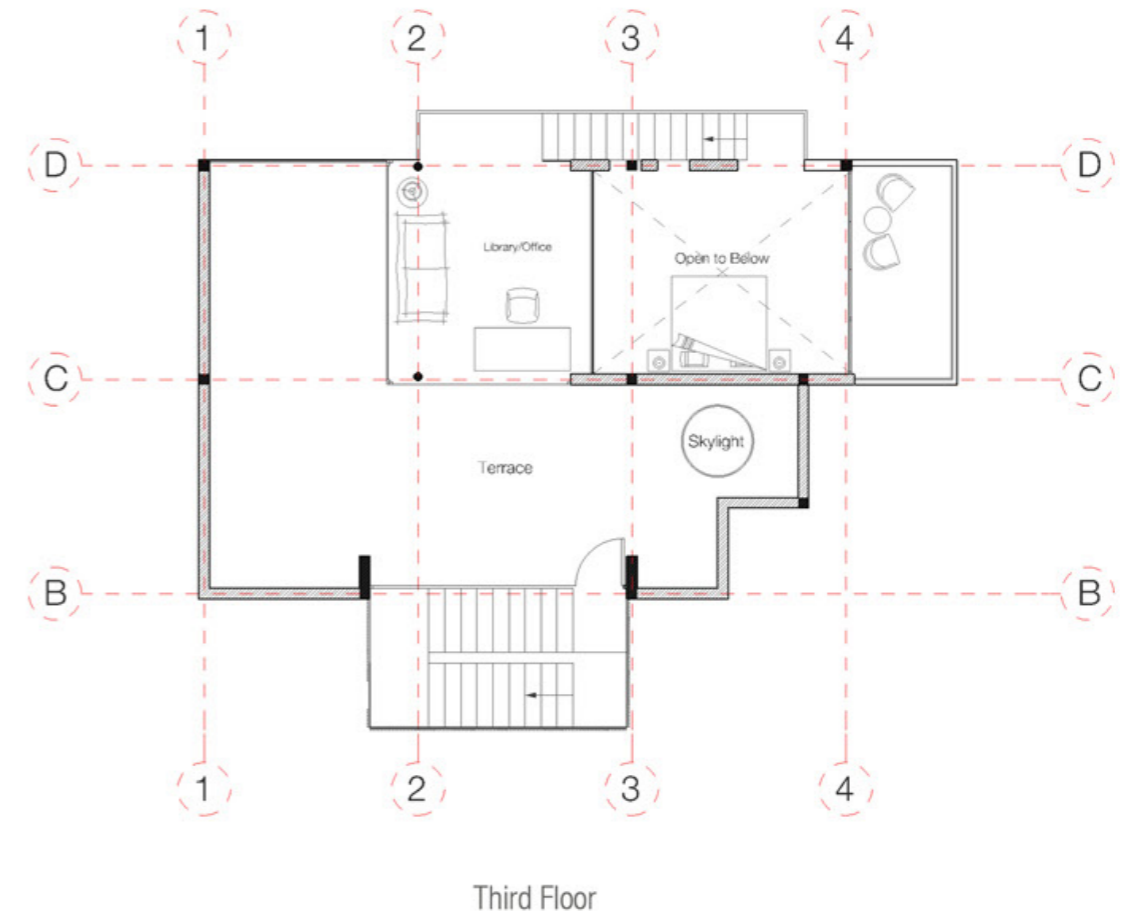
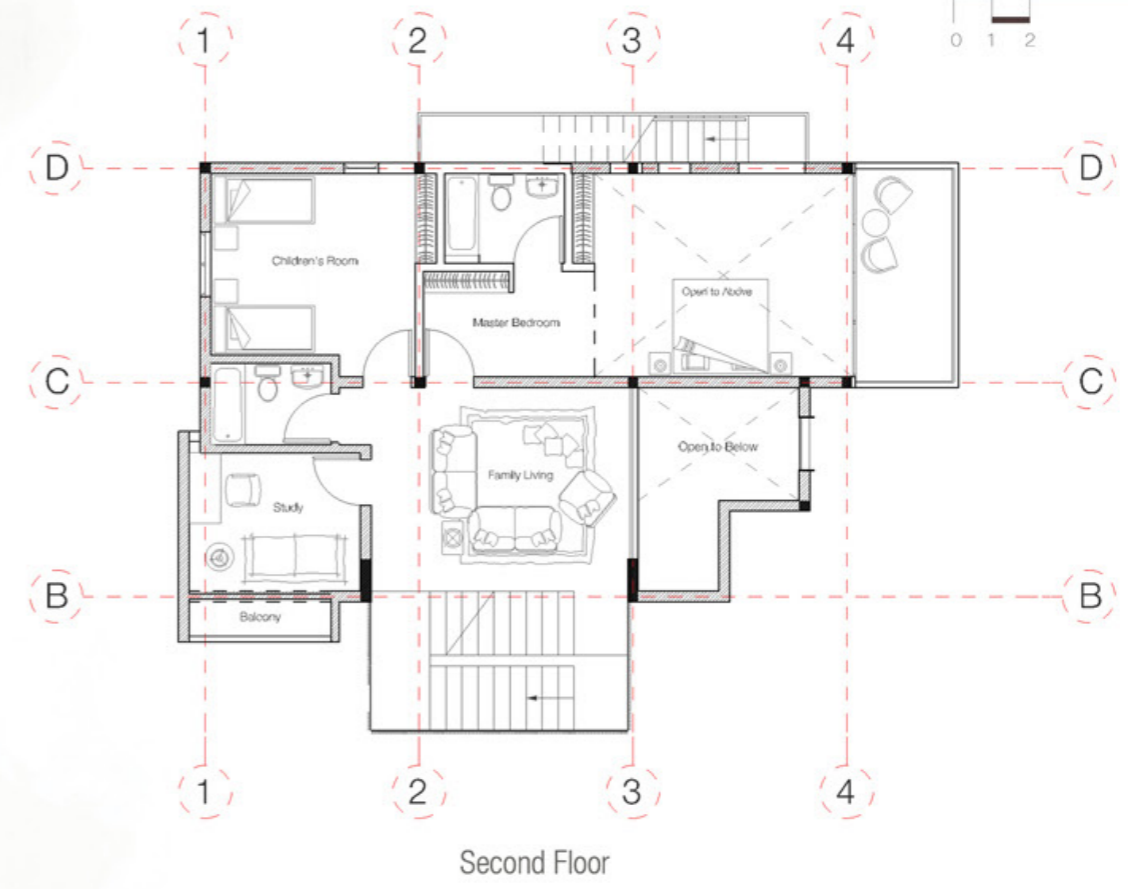
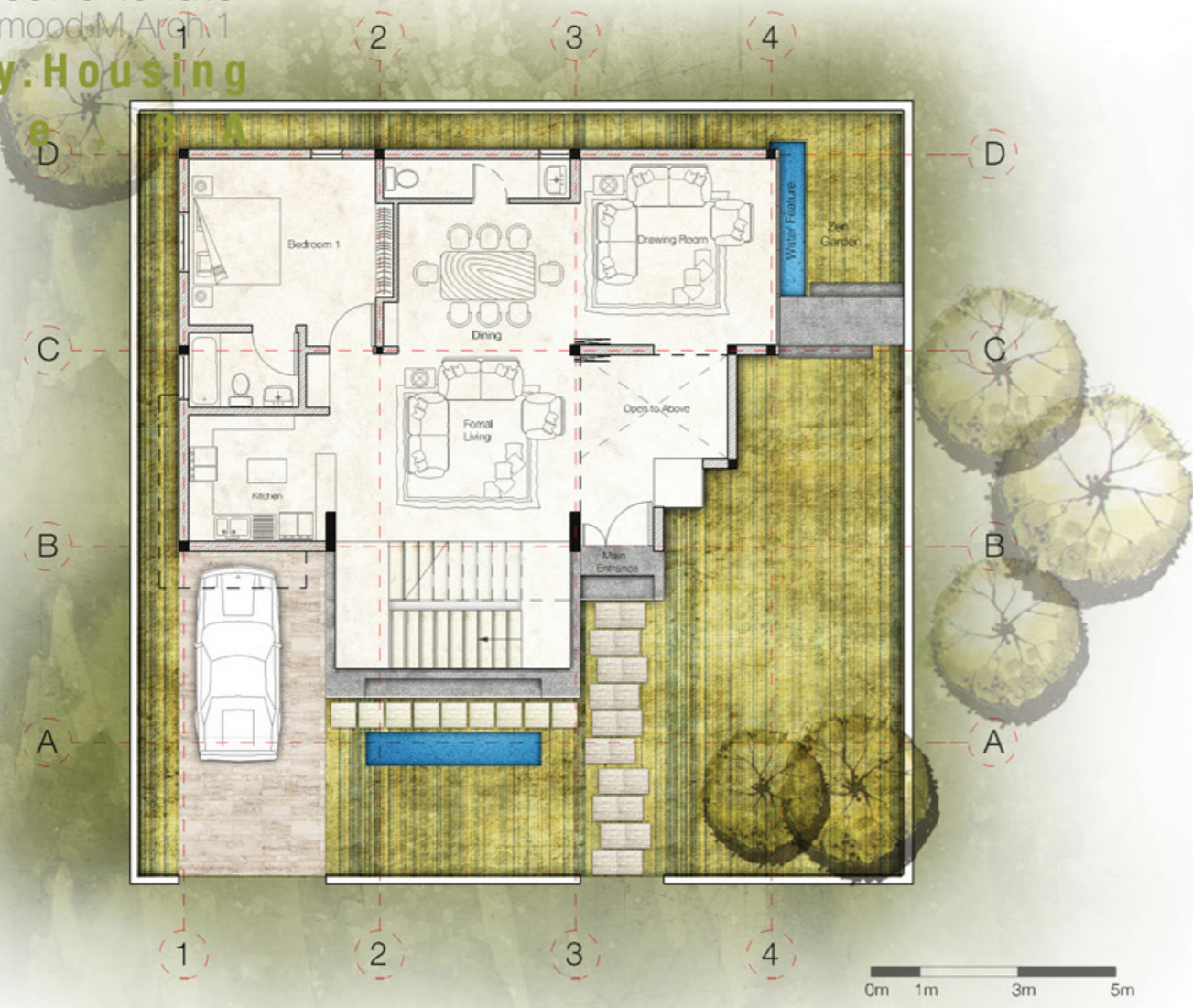
Rear Elevation



Left Elevation

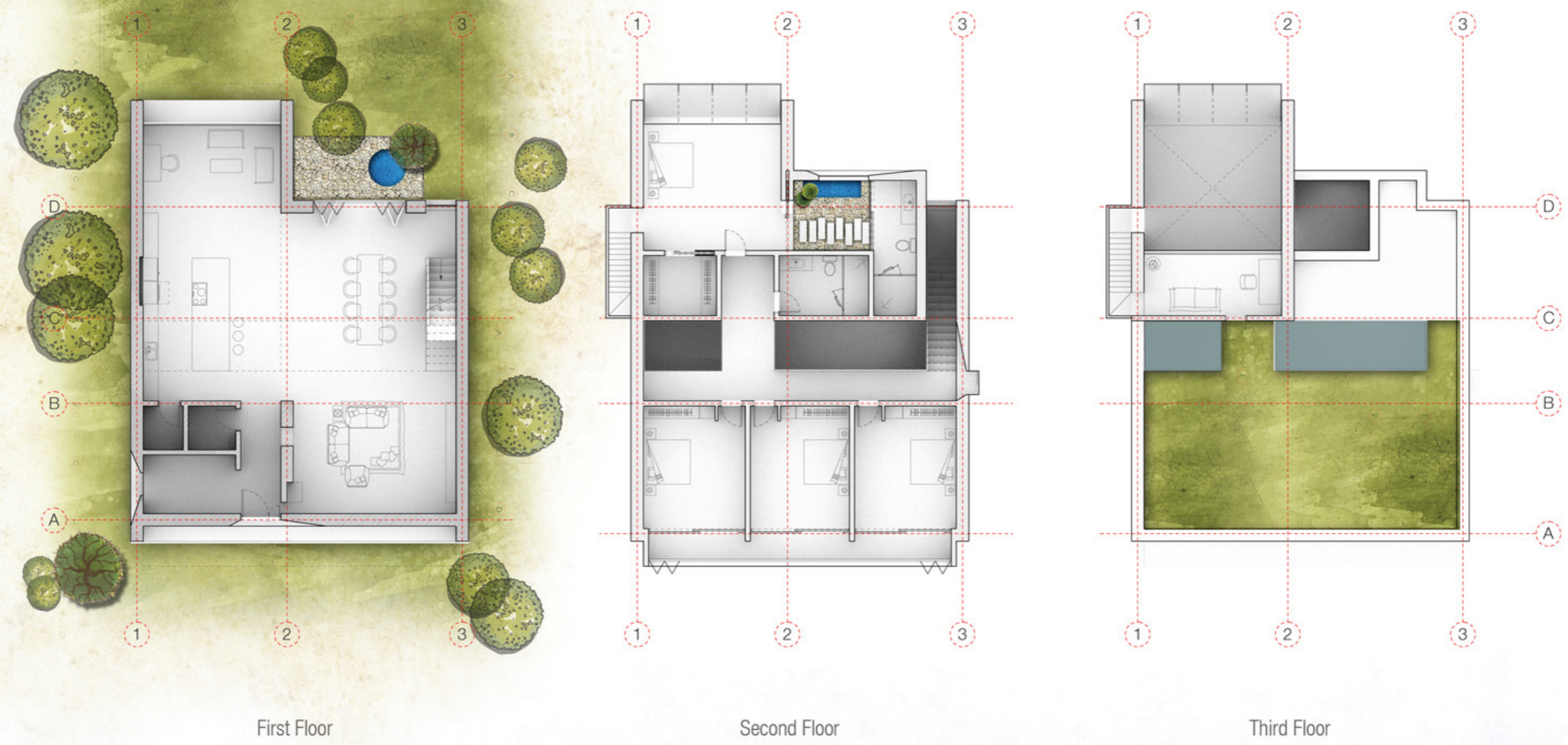
Basera | Haven
 for the less fortunate
 Wasib.Mahmood.M.Arch.1
Faculty Housing
 Type

Scale 1:100
 0 1 2 5 10m



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Wasib.Mahmood.M.Arch.1
Faculty.Housing
Type . 3 B

Scale 1:100
0 1 2 5 10m

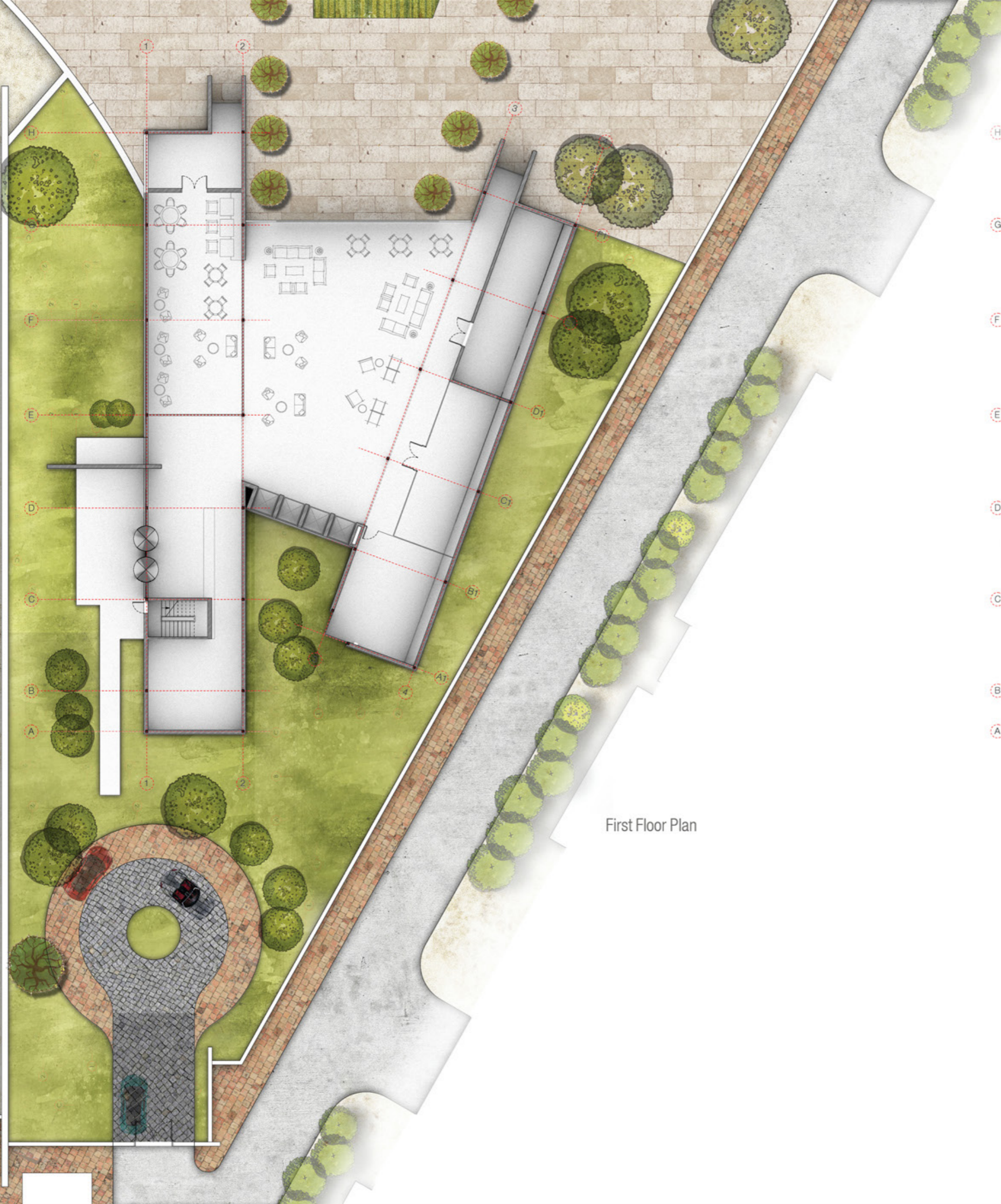


Front Elevation

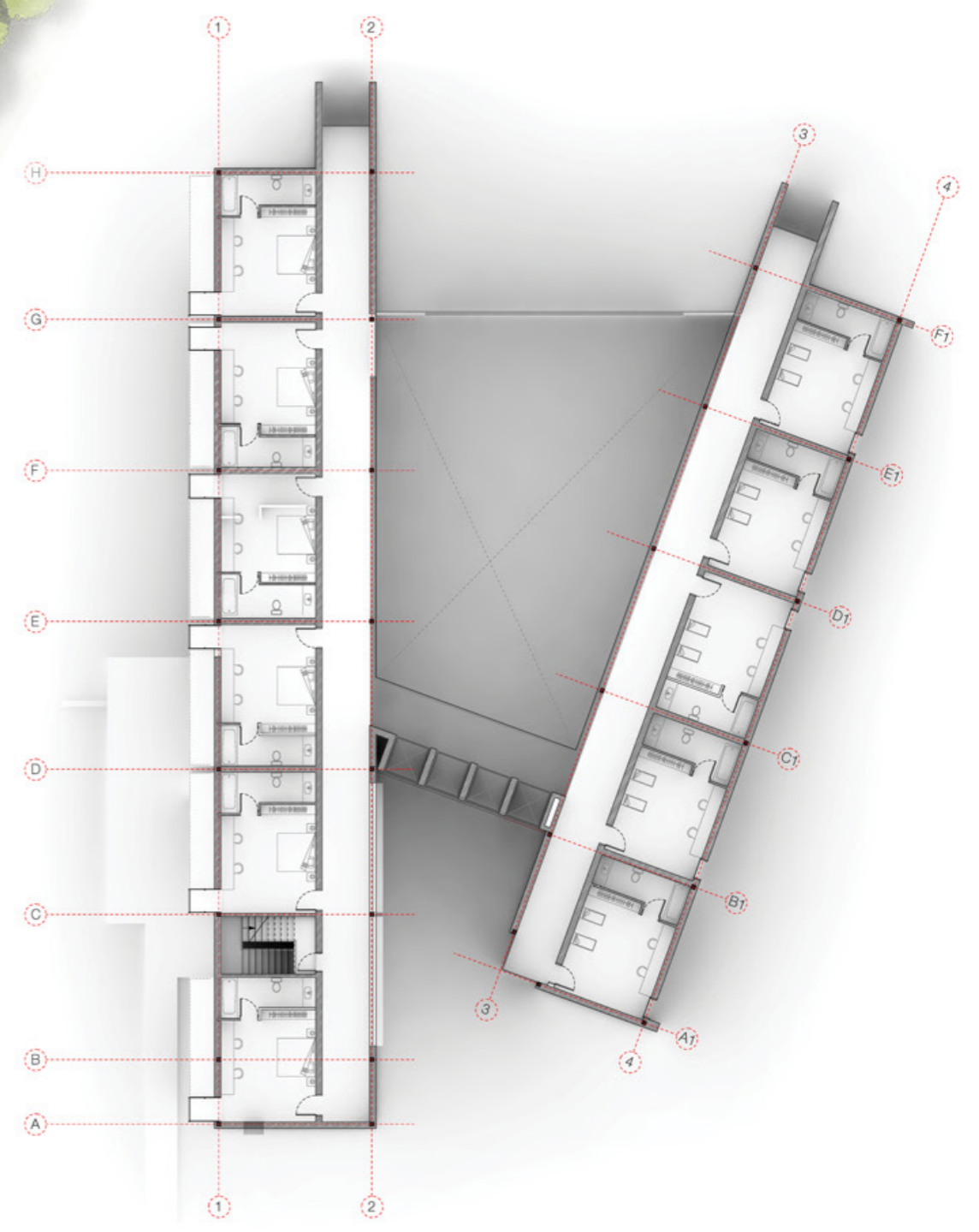
Right Elevation

Rear Elevation

Left Elevation



First Floor Plan



Typical Floor Plan



Front Elevation

Right Elevation

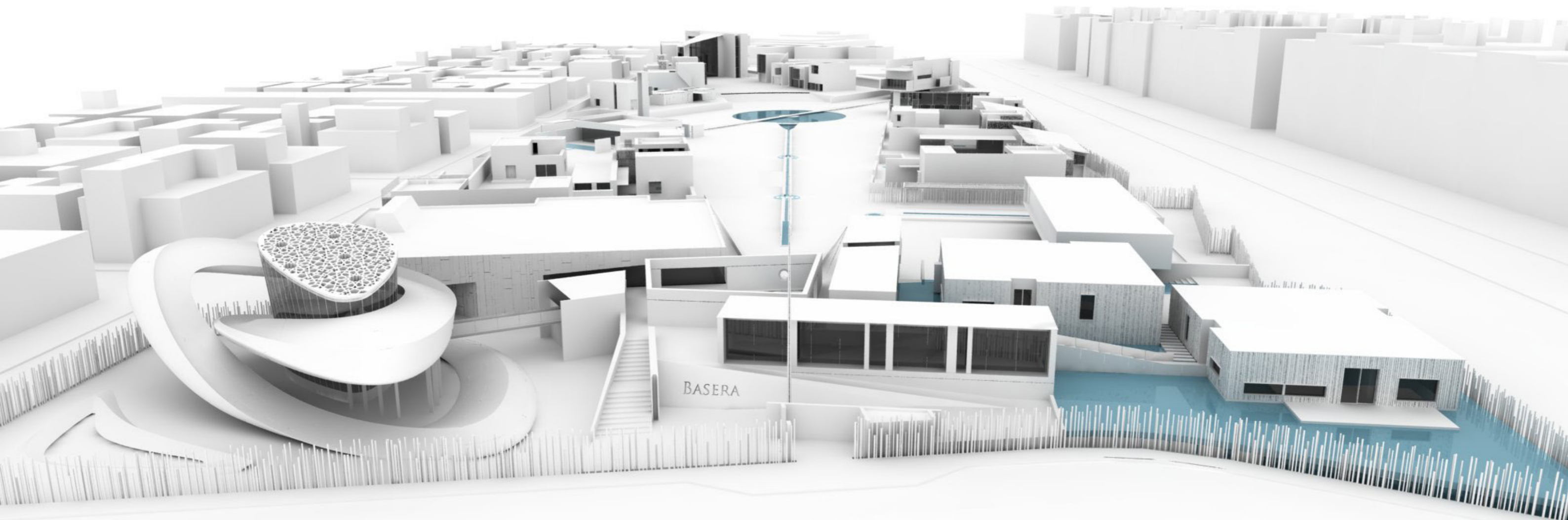


Rear Elevation

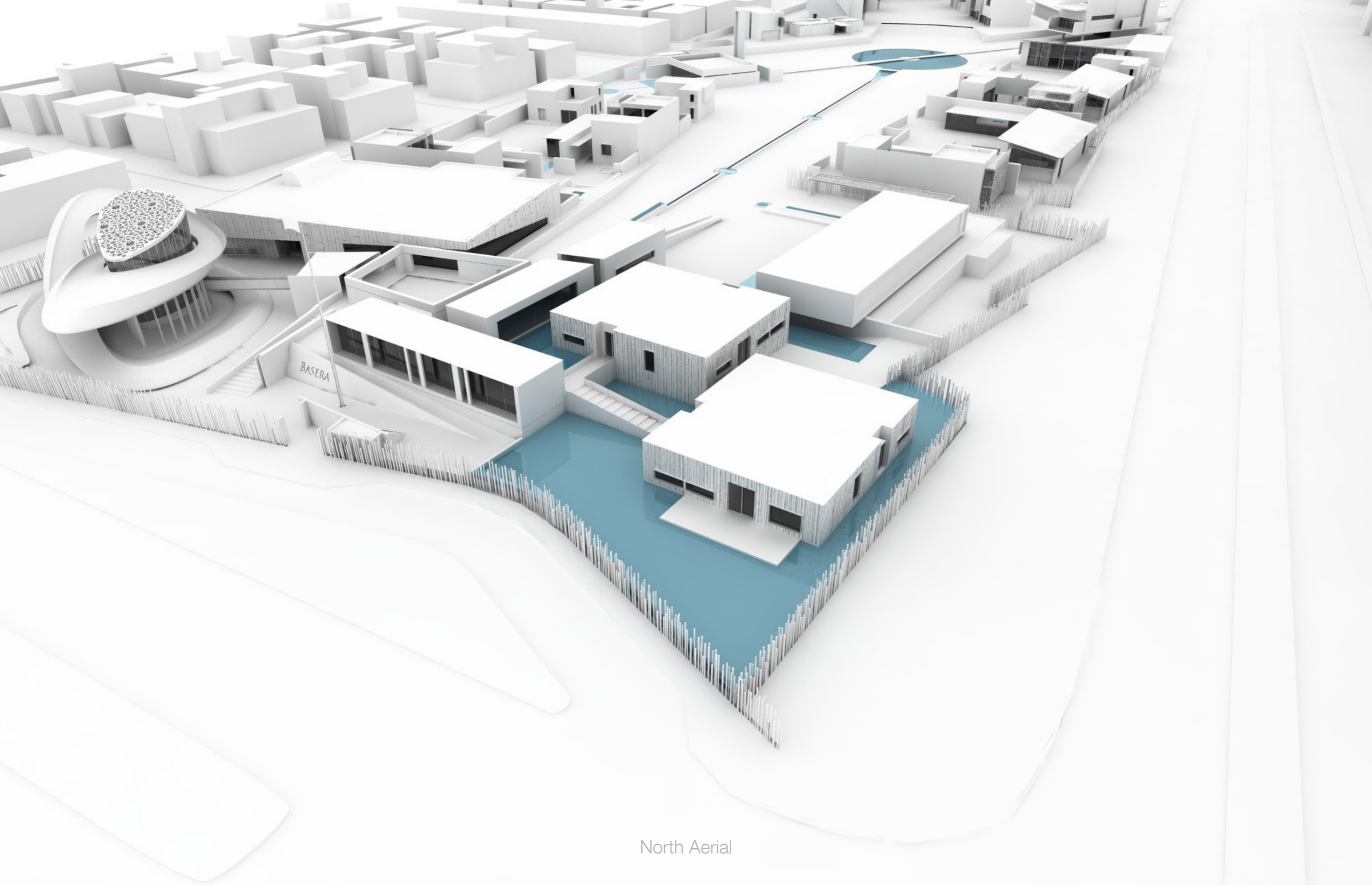
Left Elevation

Massing Studies

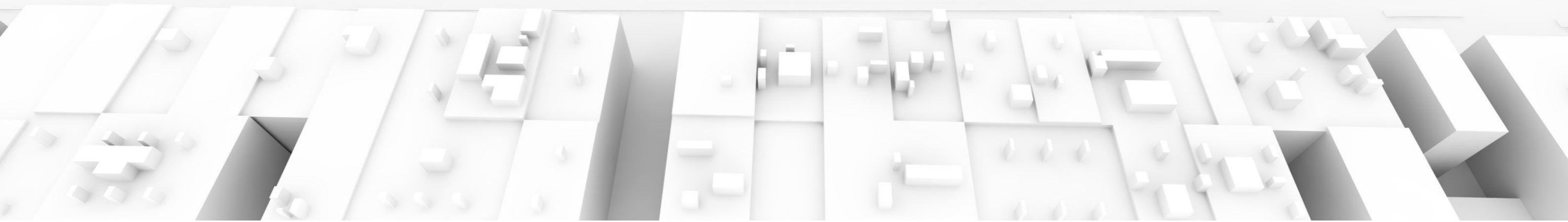
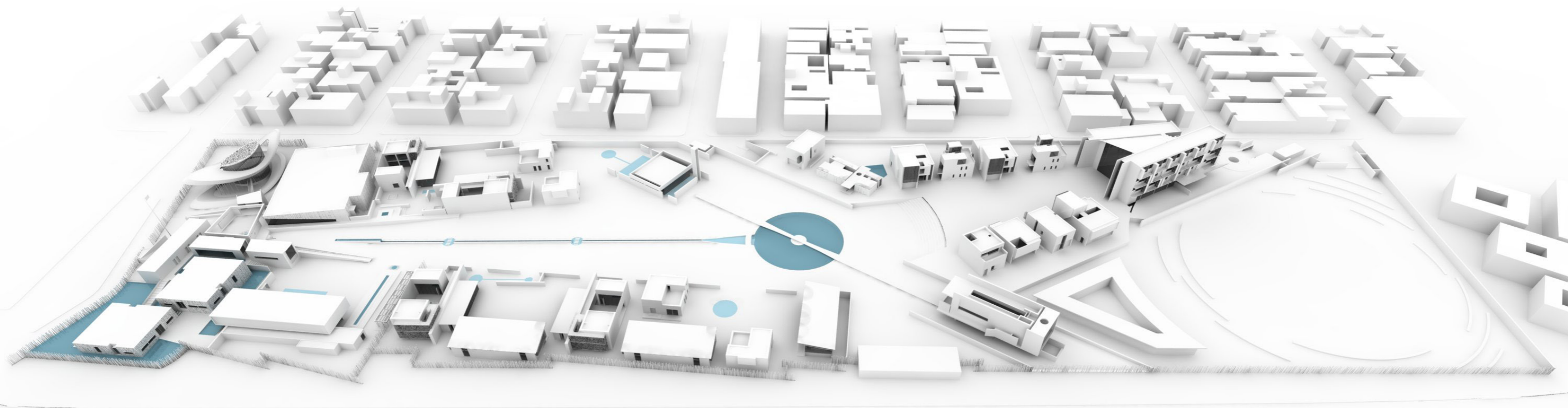
The following images show aerial shots of the Basera campus. The white massing studies helped me study the spaces they formed in between each other more closely. These spaces were always integral to my project because I knew this is where children and teachers would gather and outdoor activities take place. I had to redesign/ reposition quite a few of my major components in order to make more suitable 'leftover' space.



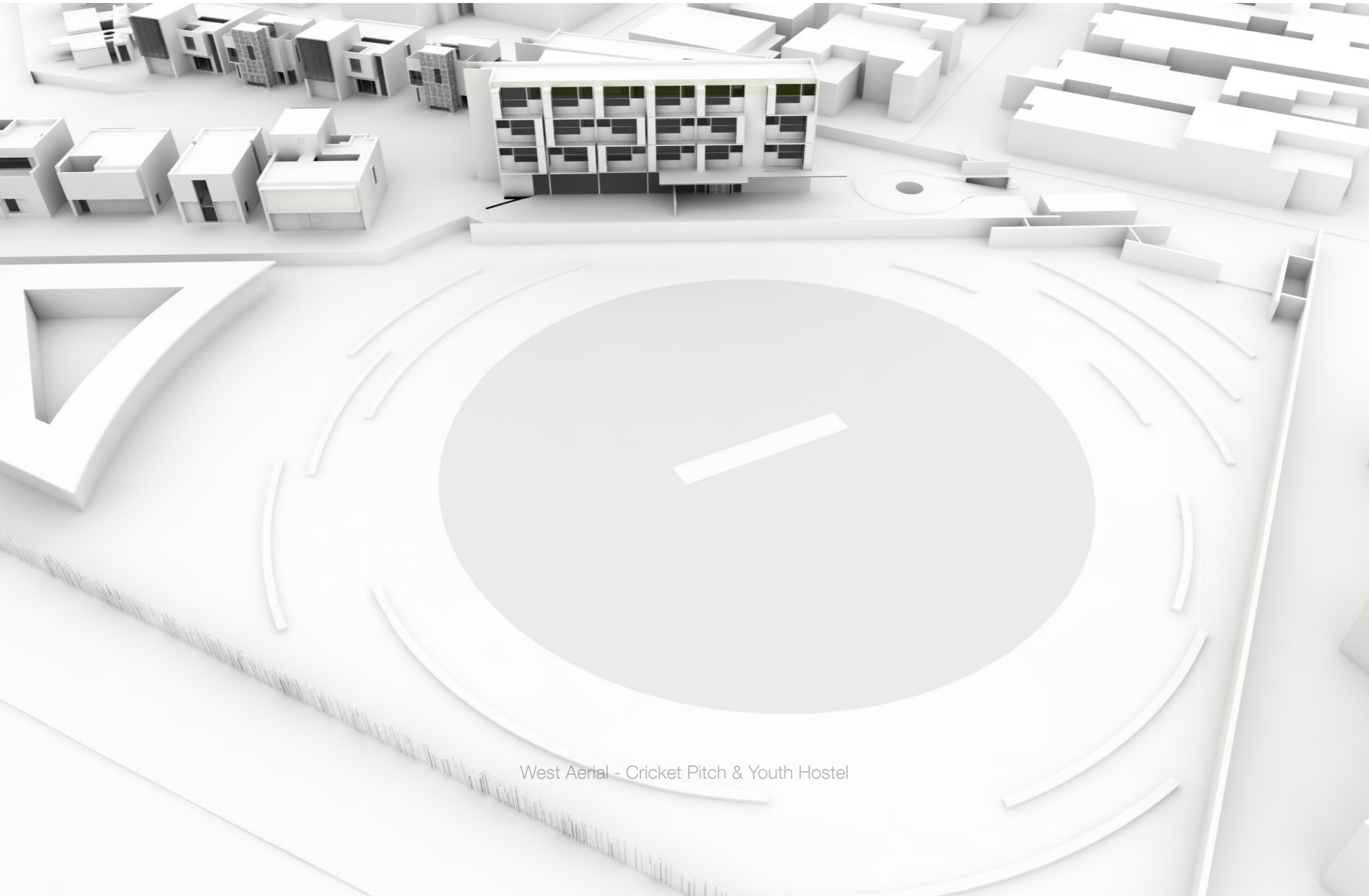
NE Aerial



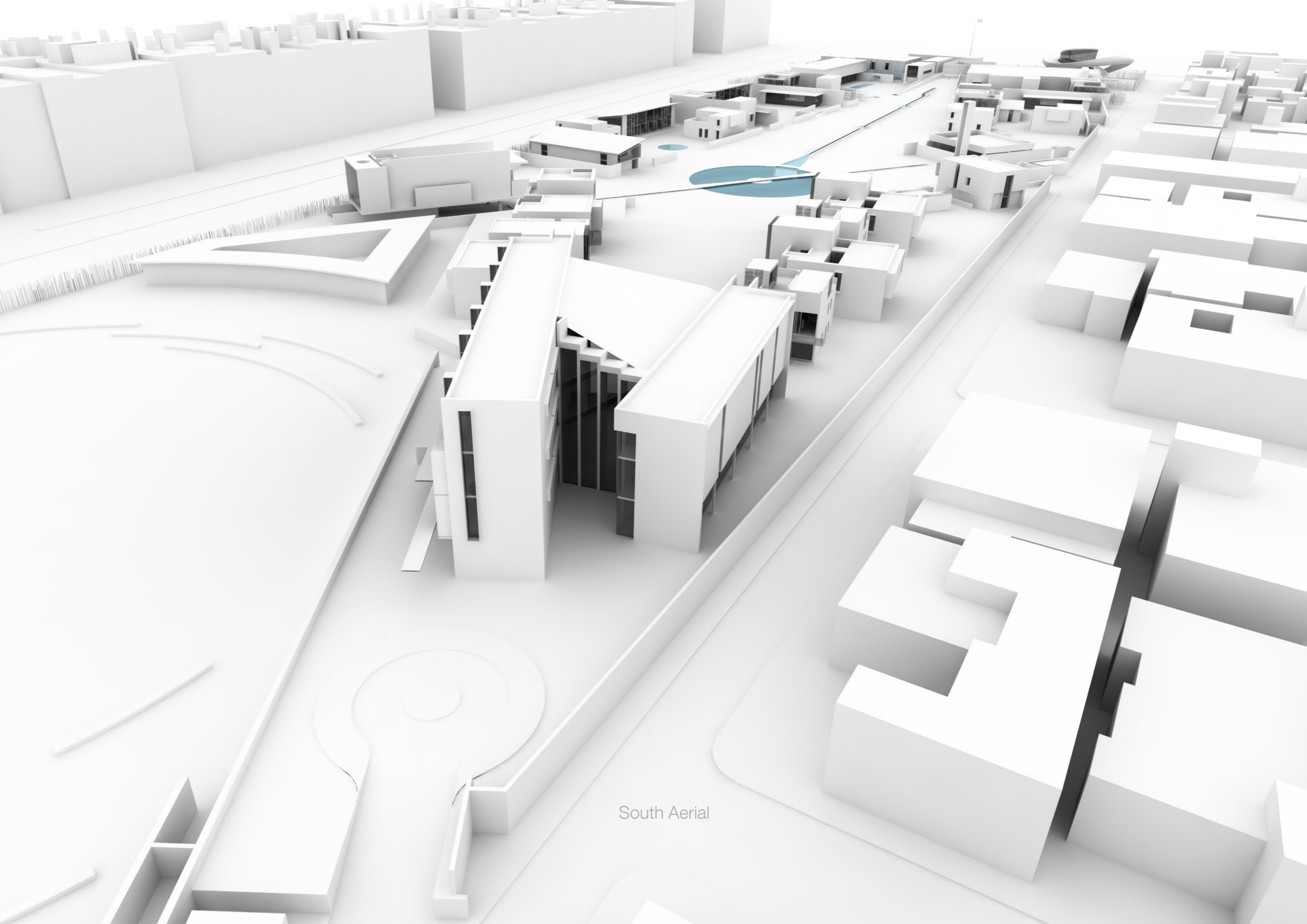
North Aerial



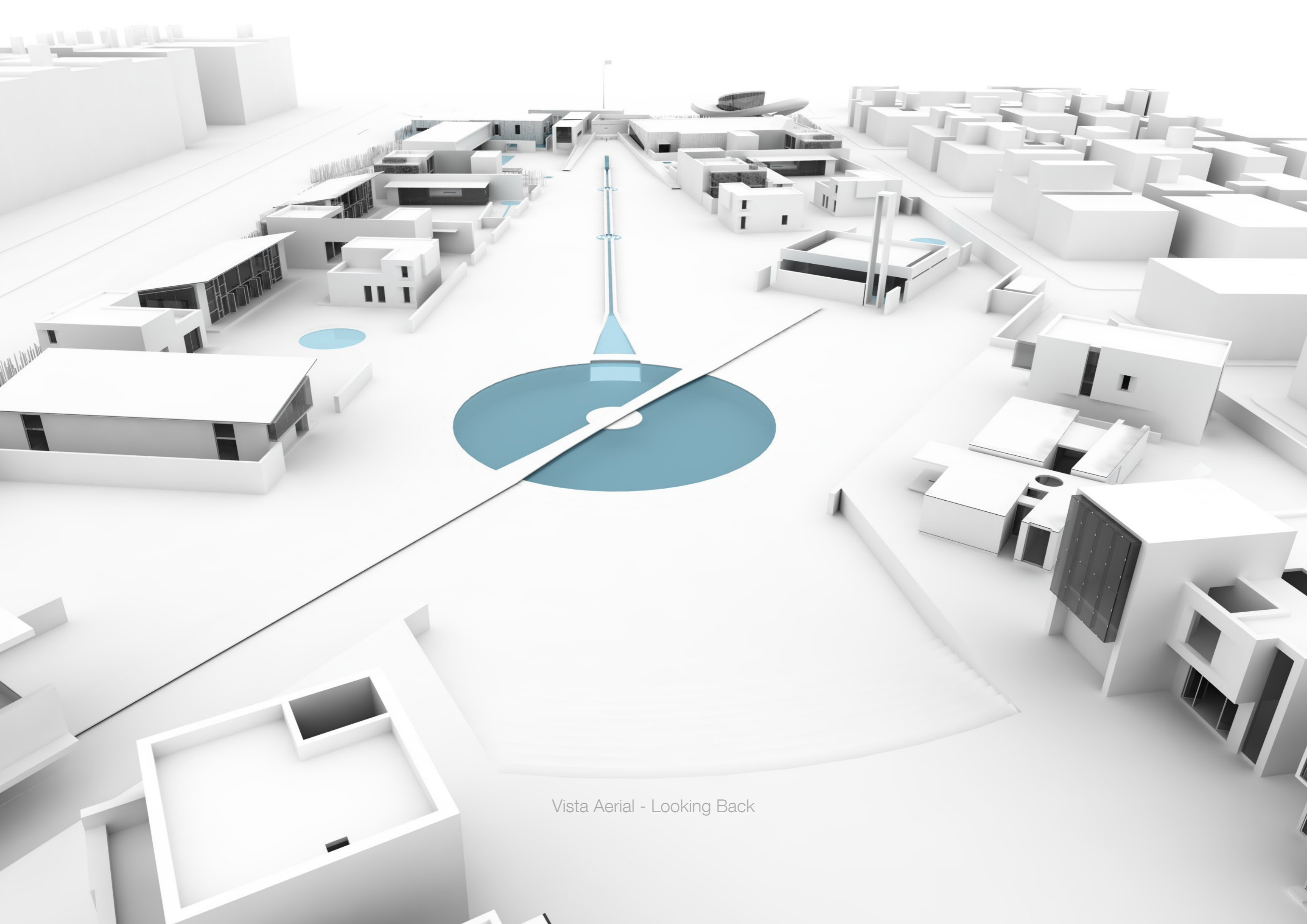
NW Aerial



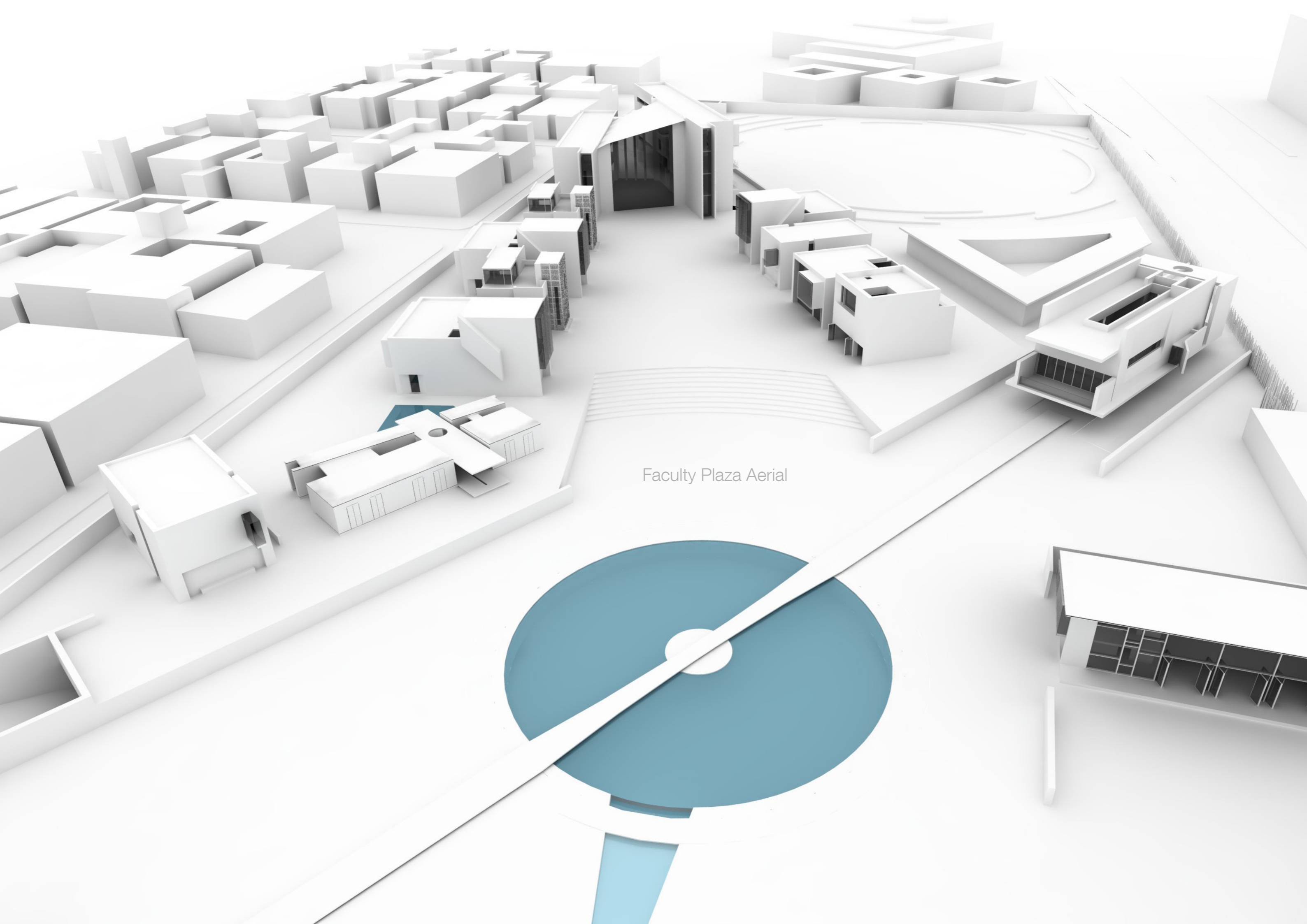
West Aerial - Cricket Pitch & Youth Hostel



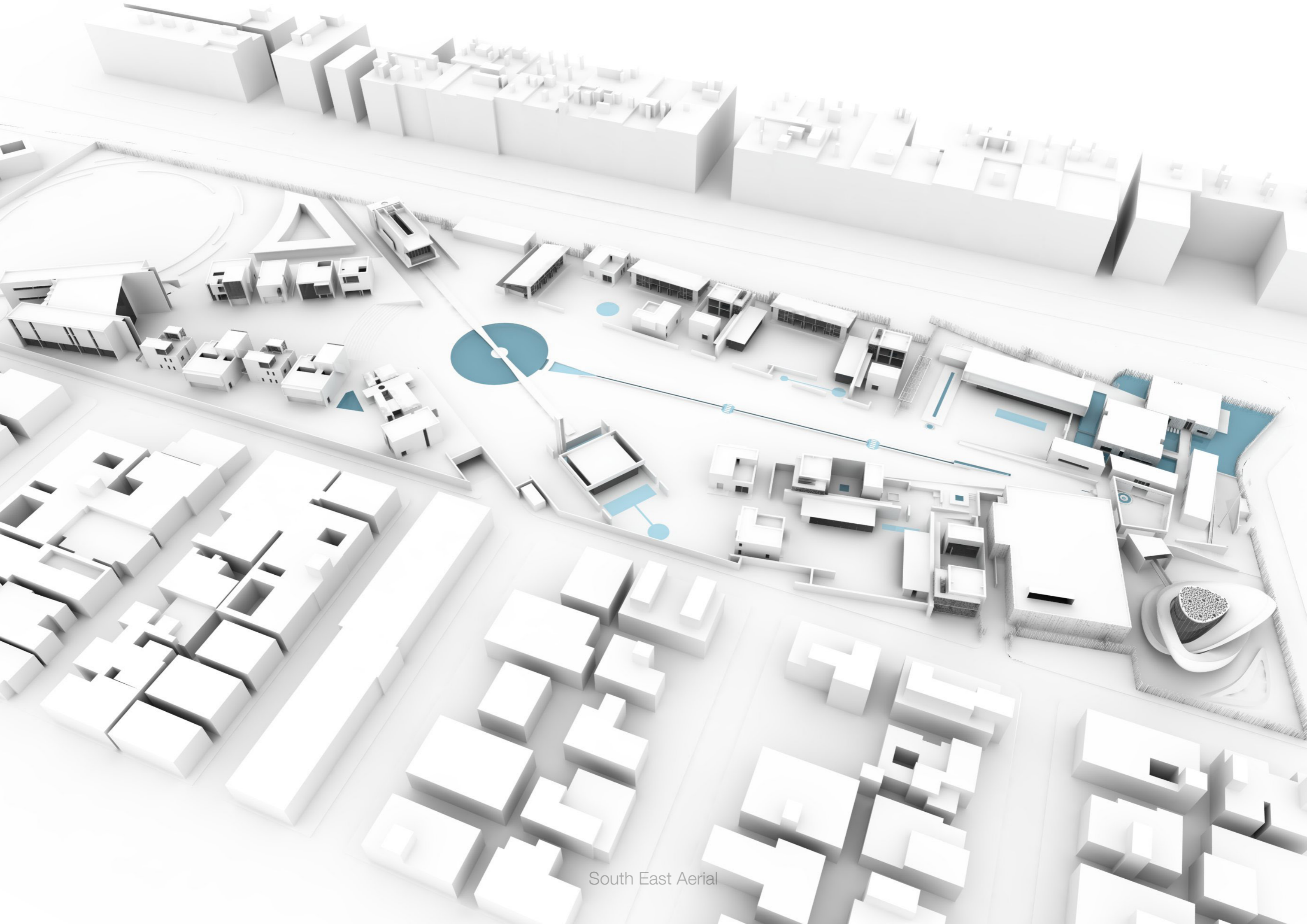
South Aerial



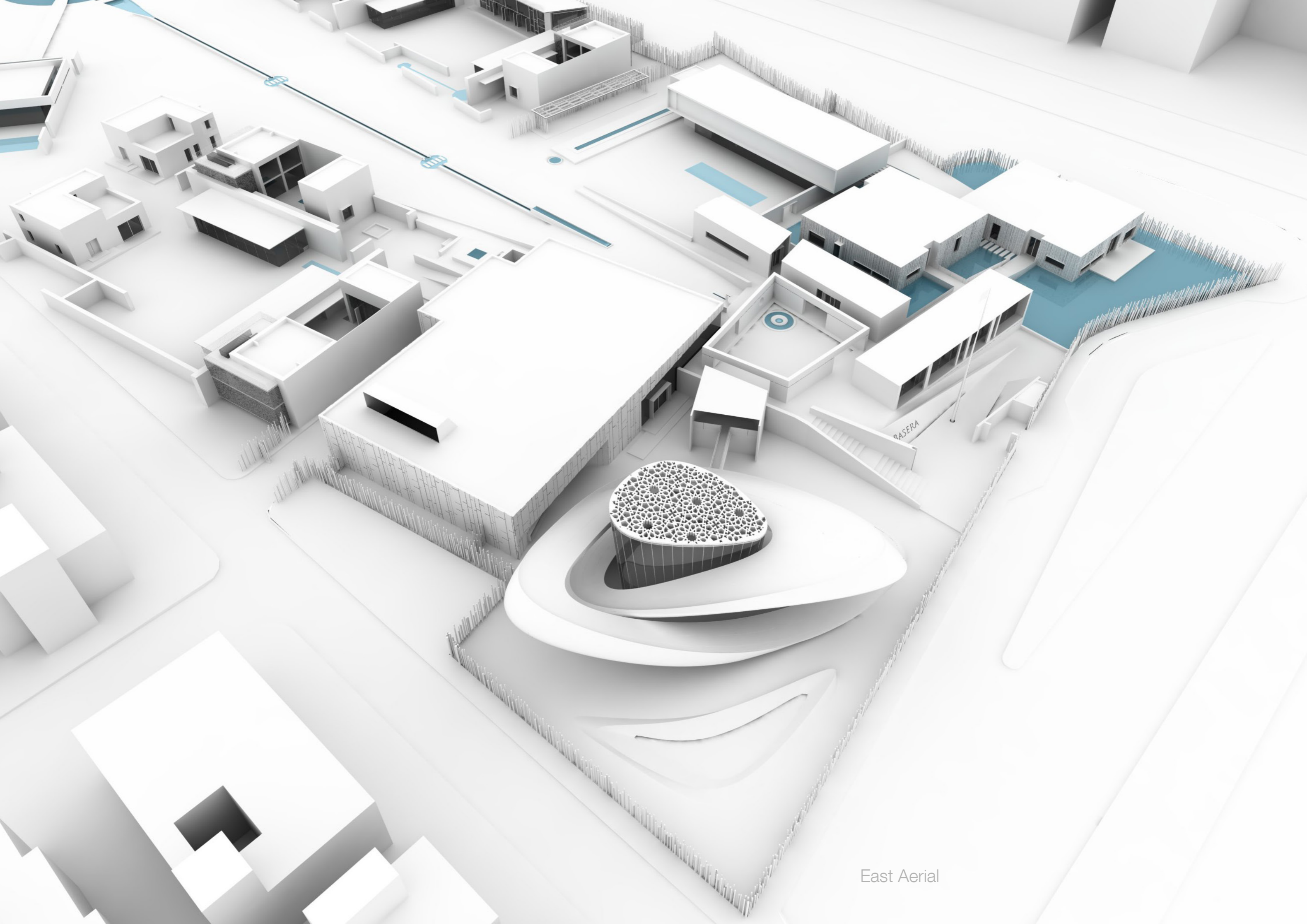
Vista Aerial - Looking Back



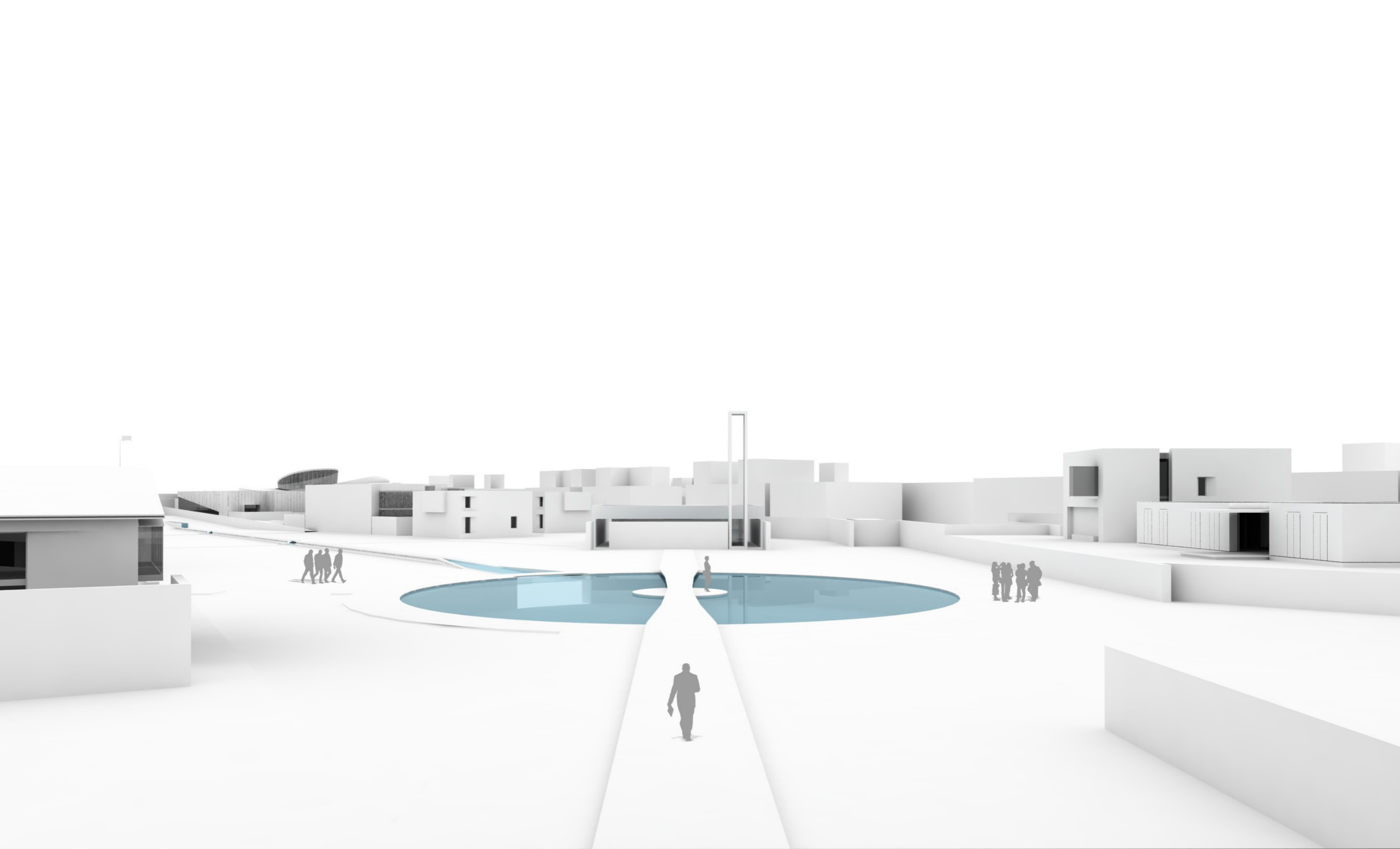
Faculty Plaza Aerial



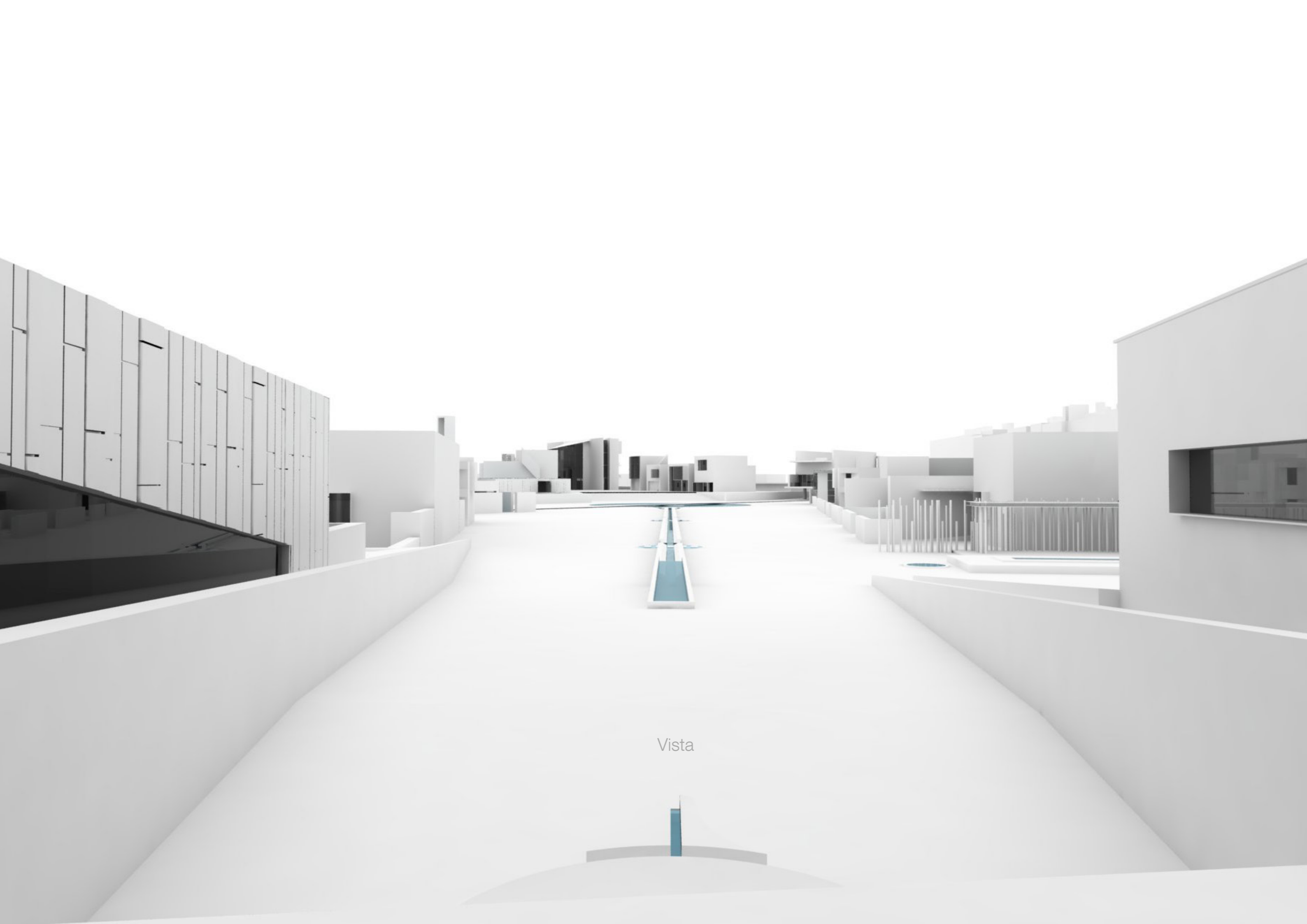
South East Aerial



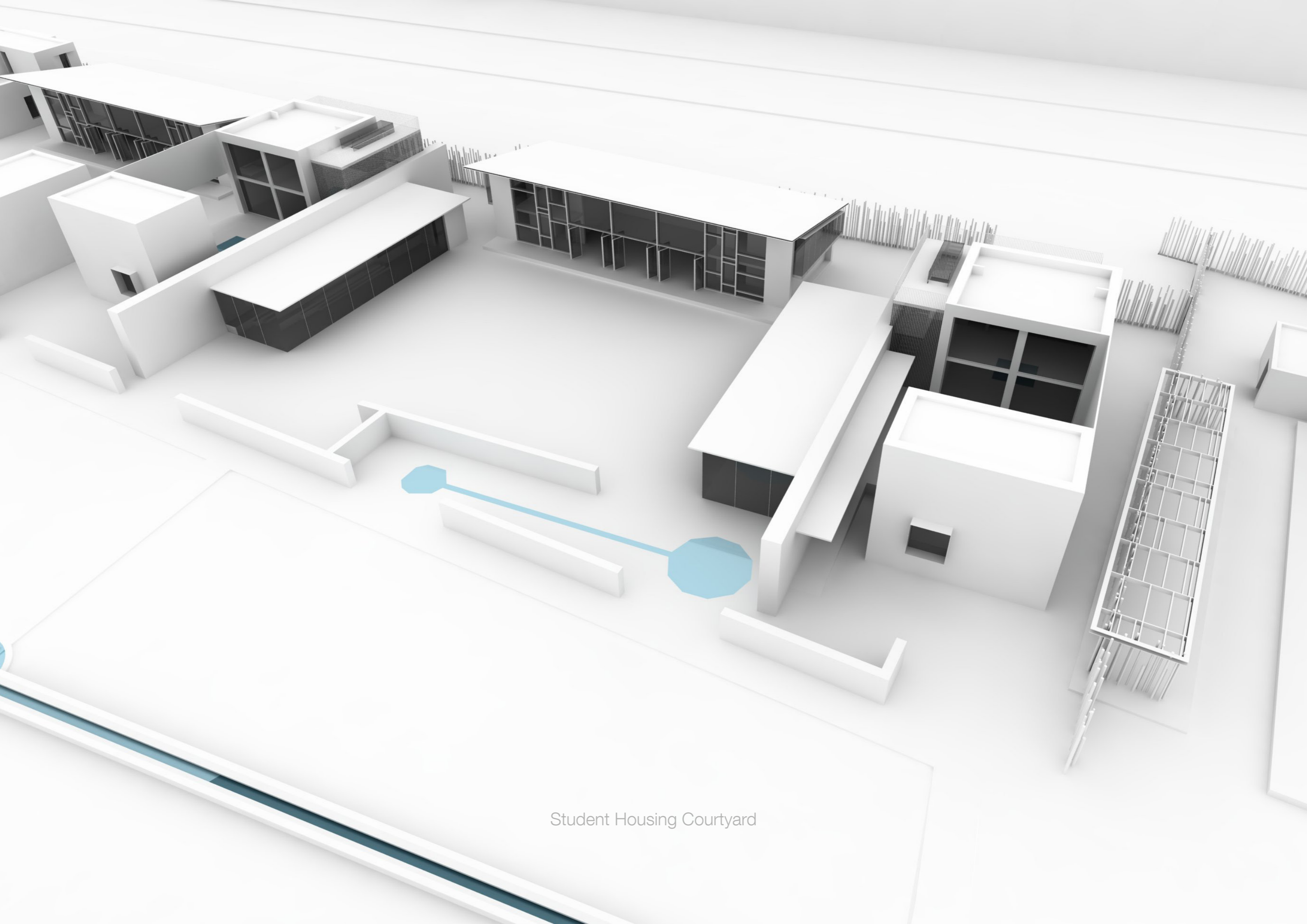
East Aerial



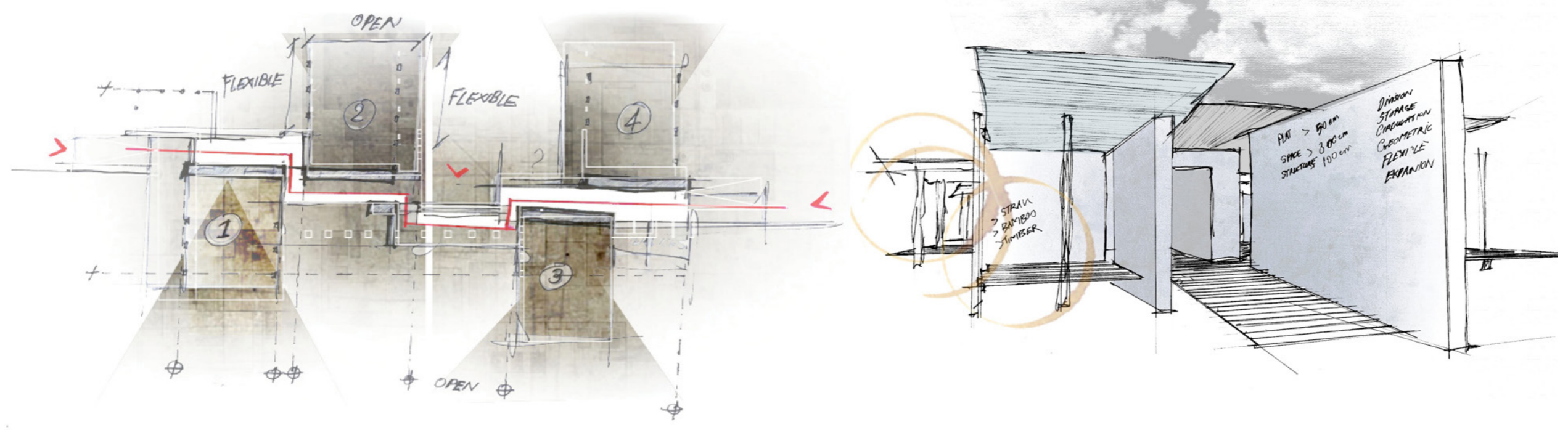
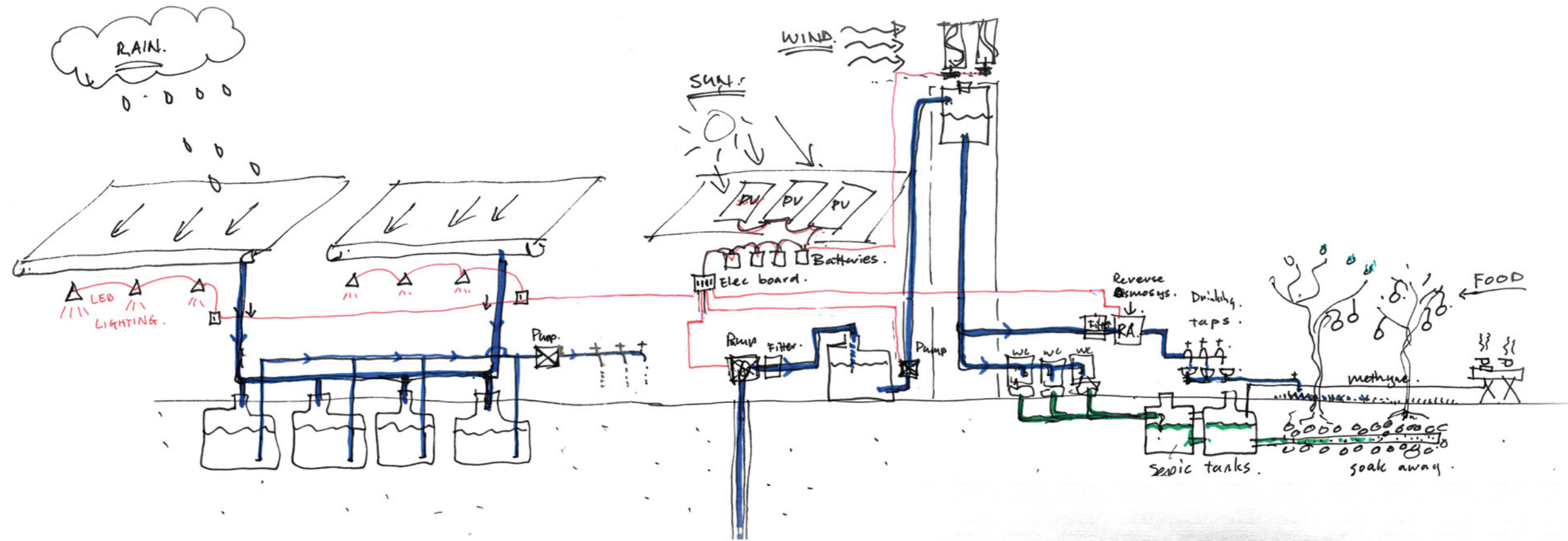
View From Contemplation Pavilion



Vista

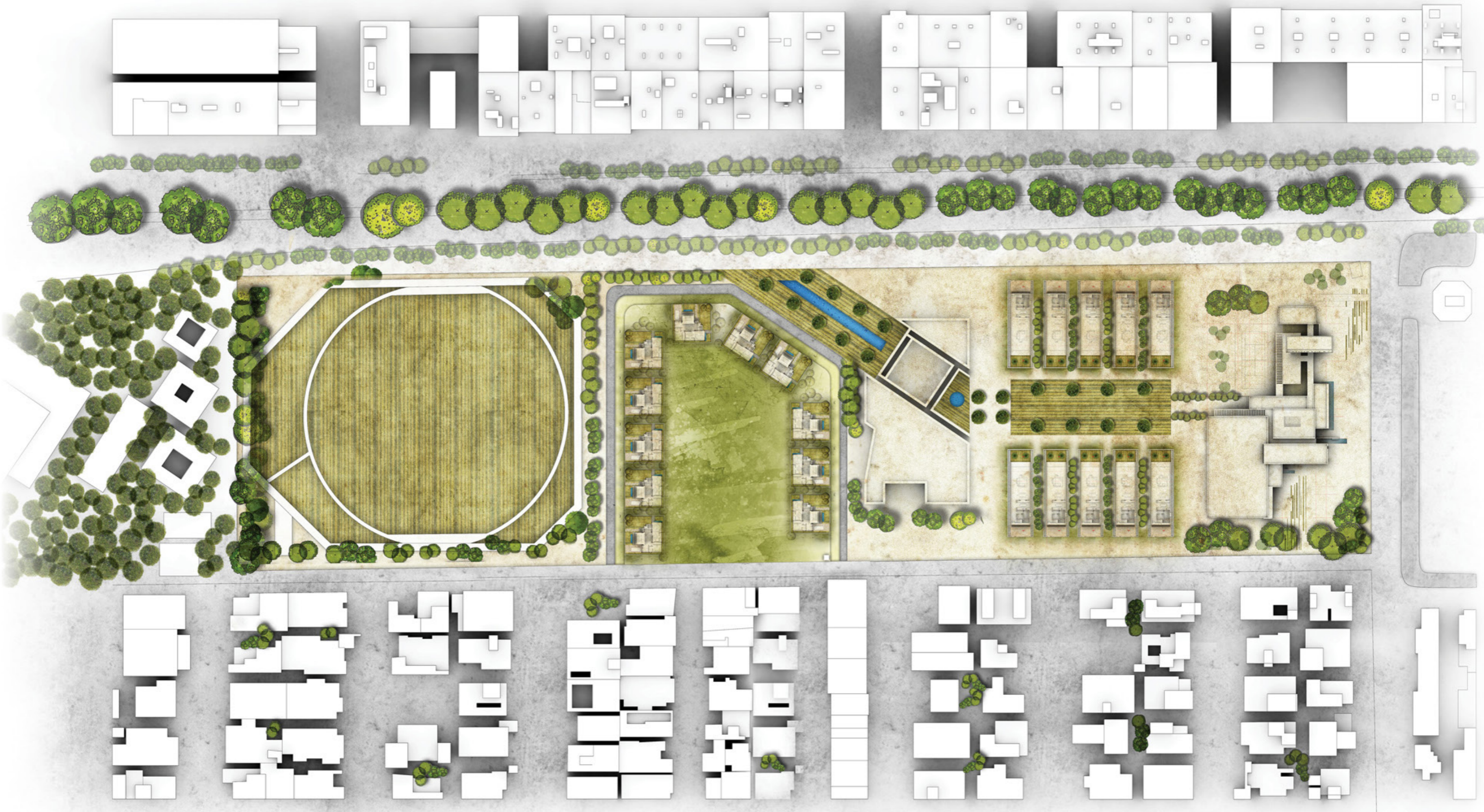


Student Housing Courtyard



Process

Finally, the last section of this book represents a few major milestones in my design process. The majority of my time was spent fine tuning the site plan and hence I share the various iterations I went through. Considering the various options for the placement of each major component of the program and eventually arriving at a resolution already depicted earlier. The process also shares some early ideas for the sustainability features of the architecture as well more detailed studies of a potential mosque interior.





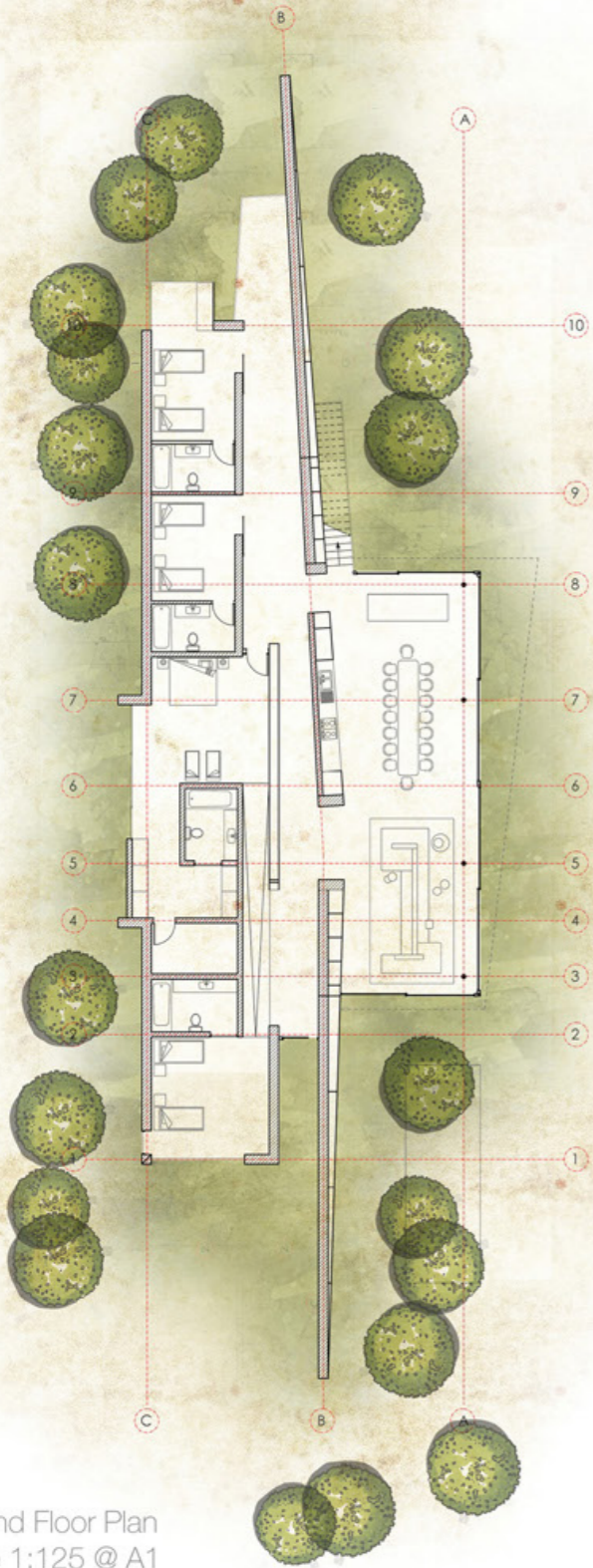
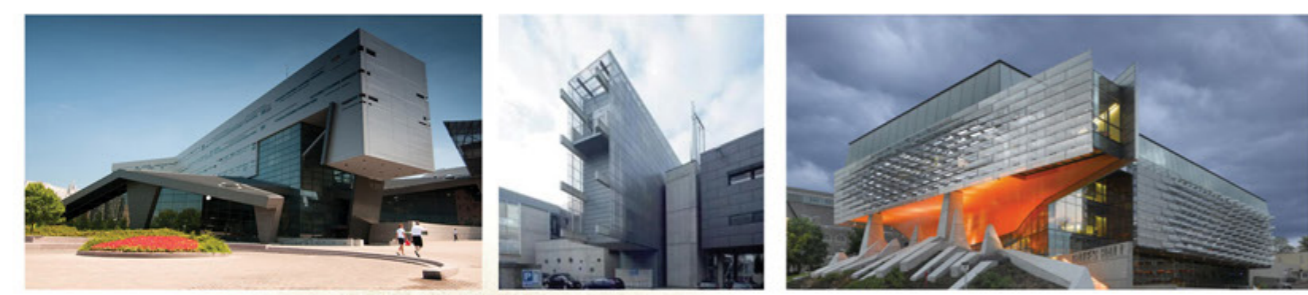




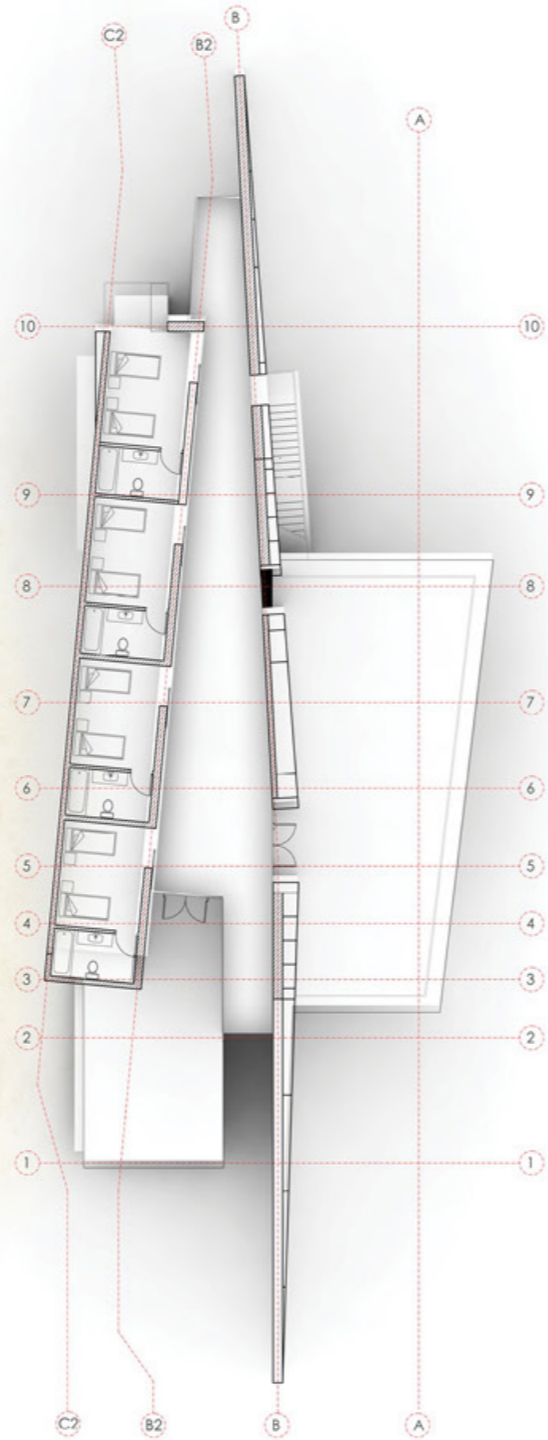
Basera | Haven
for the less fortunate
Wasib.Mahmood.M.Arch.1
Student.Housing.02



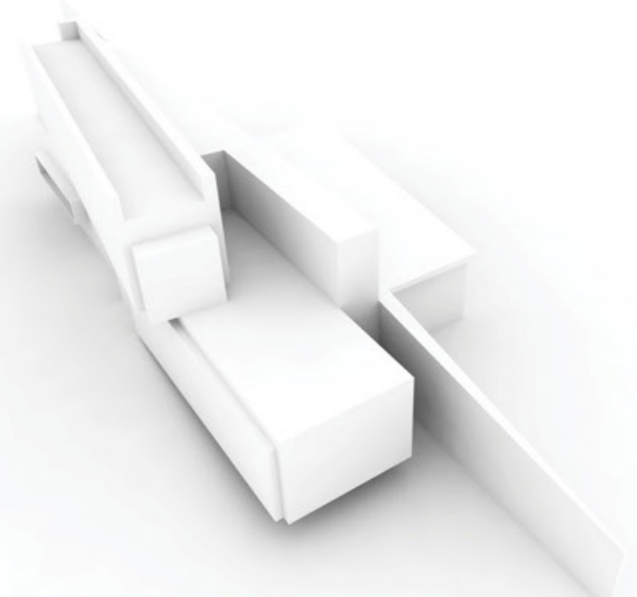
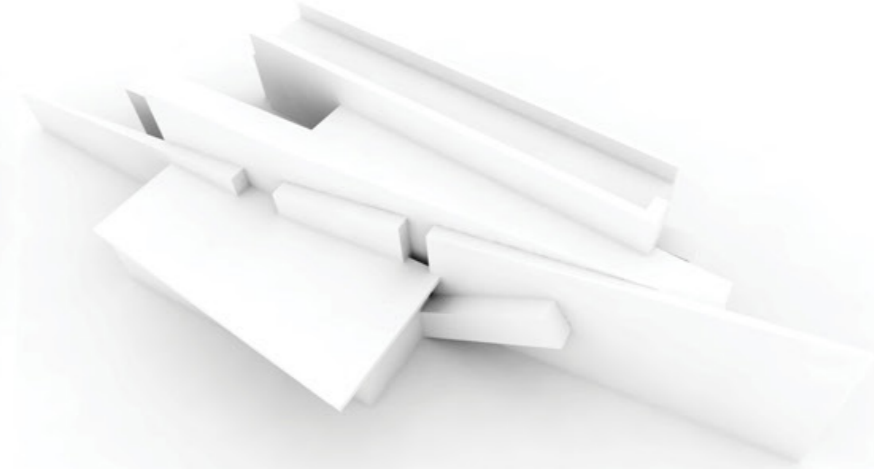
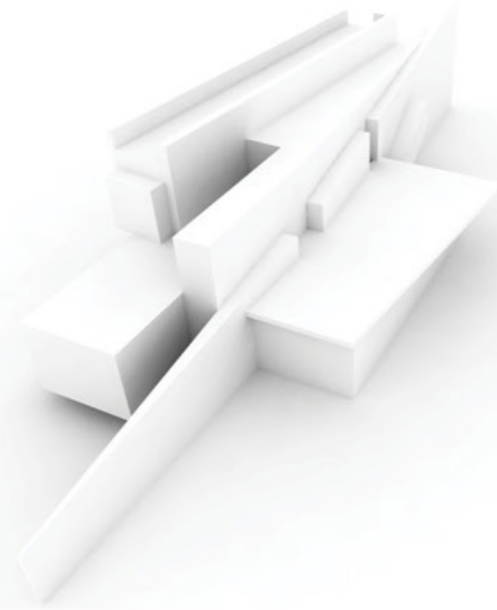
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Student.Housing.03



Ground Floor Plan
Scale 1:125 @ A1



First Floor Plan
Scale 1:125 @ A1



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Modular.School.Unit





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