

SOS CHILDREN'S VILLAGE, BARISHAL

By

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A thesis submitted to the Department of Architecture in partial fulfillment of the requirements
for the degree of Bachelor of Architecture

Department of Architecture
Brac University
Spring 2021

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Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Ethics Statement

The immense concern of the project is the absence of basic social training and survival skills that the children exhibit when they join the society. Without acceptance from the society, they are unable to harness their individual potentials and fail to cope with the life outside the institutional structure that they grew up in. They fight to survive and end up being involved in different socio-negative issues such as drug abuse, prostitution and many other criminal activities for sustenance. When these orphans can do something productive for the society, they themselves increase their acceptance towards society. Here, the project work SOS Children's Village is the platform, where they learn about self – dependence to become self - reliant and self – sufficient citizens without having trouble blending into the society. Thus local neighborhood is getting an asset and playing a vital role through mixing which is a positive issue. As, 70% students from Barishal city come at SOS Hermann Gmeiner , school , it creates another range of social mixing through which the psychological mental health of both sides become cordial, and orphans are treated same as normal child.

Abstract/ Executive Summary

Bangladesh is one of the poorest and most densely populated countries in the world. The country's economic growth has been severely affected by the political unrest and natural disasters occurring here. Local experts estimate that one third of all children do not have parental care or are at risk of losing it. Children are the most vulnerable individuals getting badly affected by the crisis and conflicts happening around the world. SOS's unique approach makes it different from the other orphanages noted by Gmeiner, "What orphaned and abandoned children need first and foremost is a family - a family in which they can develop normally."

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CHAPTER 1: INTRODUCTION

1.1 Background of the Project

“Childhood should be a happy time for all children. It should be a time when children have opportunities to grow, learn and develop; receive love and care; play freely and be active; feel safe and protected; be healthy; and be listened to when they share their views on matters that are important to them” (Xingwana, 2011). Unfortunately many children do not get the chance to experience this kind of childhood. In addition to that losing a parent or both parents at a young age is the most miserable thing that can happen to a child.

UNICEF defines orphan as a child under 18 years of age who has lost one or both parents to any cause of death. By this definition there are almost 140 million orphans globally in 2015, among which 61 million are from Asia. Of the 140 million orphans, 15.1 million have lost both their parents.

Bangladesh is one of the poorest and most densely populated countries in the world. The country’s economic growth has been severely affected by the political unrest and natural disasters occurring here. More than half the population lives on less than 1USD a day, and the quality and access to healthcare and education varies a lot. The low standard of living is affecting the families and children. Around 40% of the population of Bangladesh are children, and 6.8% of them are orphans which makes about 4.4 million. Local experts estimate that one third of all children do not have parental care or are at risk of losing it. Due to loss of parents or other factors, these children are lacking in crucial factors of a healthy life like, early childhood development, proper nutrition, quality education and protection. In addition they are often subject to various crimes such as,

- Child Trafficking
- Child Labour
- Child Prostitution
- Street Children
- Children infected with HIV/AIDS
- Child Marriage
- Children without access to education or healthcare

1.2 Project Brief

Project Title: SOS Children's Village

Location: Barishal

Site Area: 6.7 Acres

Client: SOS Foundation

Building Type: Social Welfare

Building Usage: Orphanage

1.2.1 Brief on SOS Children's Village

SOS- 'Save Our Soul', the largest non-government, International children welfare organization work with children, young people and families to support family breakdown, provide alternate care for children and financial independence. It was founded by a young Austrian medical student, Hermann Gmeiner in 1949 to solve the sufferings of orphaned and abandoned children

after World War II. SOS has a very unique approach different from a typical orphanage noted by Gmeiner, "What orphaned and abandoned children need first and foremost is a family - a family in which they can develop normally." With that approach the unique model of SOS Children's Village was built including 4 fundamental principles,

1. A mother
2. Brother and Sister
3. The house
4. The entire Village

Every house has a mother to take care of the 7 to 8 children in the house where they grow up as brothers and sisters. The villages consist of 10 to 15 houses in clusters. The aim of this approach is to give the children who have been orphaned or separated from their family, a normal homely environment to grow. They are sent to villages close to their origin so that they can meet with their real family or reunite with them if possible.

SOS have been working with 135 countries and it started its journey with Bangladesh since 1974, when Prof. Hermann Gmeiner visited newly emerged Bangladesh in 1972 after our liberation war. It has 6 active villages, first being in Dhaka, then in Rajshahi, Khulna, Chittagong, Bogura and Sylhet in the last 46 years with upcoming projects in Barishal, Rangpur and Mymensingh.

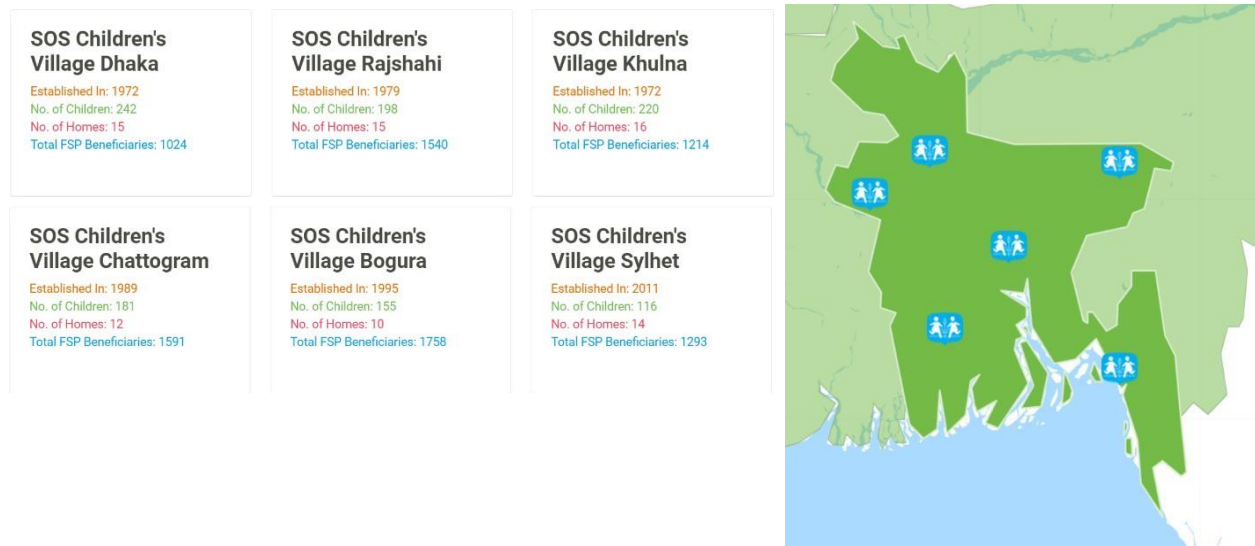


Figure 1.1: Existing of SOS children village in Bangladesh. (Source: SOS children village, Bangladesh)

1.3 Problem Statement

For many underprivileged parents in Bangladesh, putting their children in an orphanage seem to be the best solution to ensure their basic needs. But according to a report by Save the Children, these institutions are unsafe and unfit for children as children living here are at increased risk of violence, abuse and neglect by their caregivers. (Khondokar, 2019) Hence there is a need for an alternate method of childcare.



Figure 1.2: Statistics of issues effecting children in Bangladesh. (Source: SOS children village, International)

Institutionalization has serious negative impacts on children’s physical, cognitive and emotional development. After six months of institutionalization, without the right support, babies and toddlers are at risk of never reaching full recovery (“The Risk of Harm to Young Children in Institutional Care”, Kevin Browne, 2009). This seriously affects their entire life.

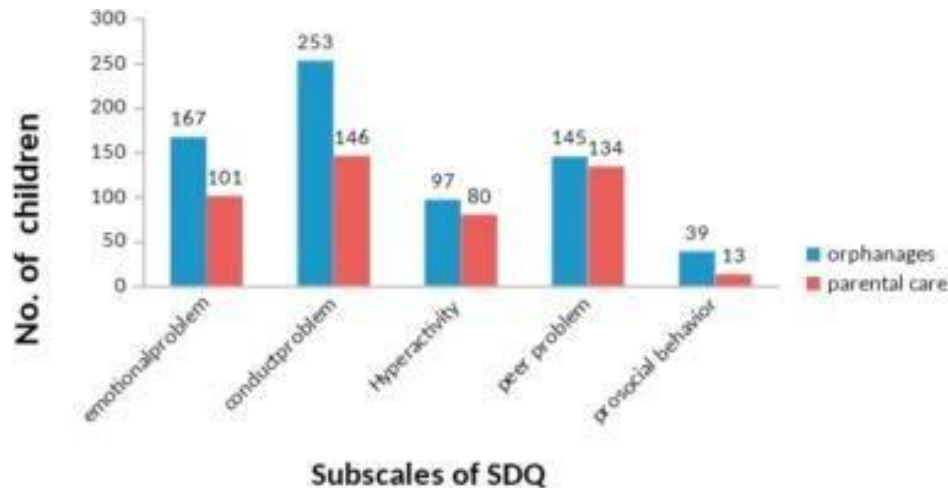


Figure 1.3: Behavioral and emotional problems in orphans staying in institutions. (Source: Kaur, 2018. “A Descriptive Study on Behavioral and Emotional Problems in Orphans and Other Vulnerable Children Staying in Institutional Homes”)

1.4 Rationale of the Project

Children are our country’s potential backbone. It is therefore crucial to ensure their lives with proper guidance. As a developing country it is the responsibility of Bangladesh to ensure five basic rights for them, which are food, health, shelter, education and healthcare facilities. Orphan children have to learn to survive in the harsh world, and are often subject to heinous crimes. Moreover it is also very traumatizing for them to lose a parent or be separated from the family. They need a homely, loving atmosphere and proper therapy after rescue to cure their emotional

scars. An alternative childcare system provides them with a family-like atmosphere where, along with learning great family skills, they can develop intimate relationships and get a sense of ownership. Thus they are rising as balanced human beings. Besides the project is not only limited to the accommodation and education purpose, but also provide a large space with various facilities, recreation, and modern technology for their better development and to cope up with the modern world.

1.5 Aims and Objectives of the Project

There are at present 6 SOS Children's Villages in Bangladesh supporting the orphan children and helping prevent family breakdown. The basic aims of this project are:

1. Support vulnerable families with basic services with local partners and the community to avoid family breakdowns. In addition providing training and advice to parents regarding income generation and childcare.
2. Providing new home in the SOS Village with an alternate family, if in spite of all support children are unable to stay with their family.
3. Provide the children with an environment where they can grow up in a normal family with their brothers and sisters, and a mothers, so that they become mentally healthy and have a good future.
4. Along with providing the children with basic needs such as food shelter and education, there are also facilities to develop their other skills.
5. Work with children, families, communities and state to prevent family breakdown and ensure children's rights.

To fulfill the needs and aims of SOS Foundation, the project has to meet certain objectives, such as:

1. Design a kid's friendly space when the children can play, learn and grow efficiently.
2. Through including certain architectural elements in the project, the kids can learn various life skills, such as helping others, being self-sufficient, learning to solve difficult situations, team-work and so on.
3. It is important to include the local community with the community in SOS Village, which can be achieved by comprising different community services and facilities for the local children like schools, play space etc. so that both parties can mix with each other.

1.6 Rationale of the Site

The project's designated site is adjacent to the 'Kirtankhola River' in the 'Kaua Char' area of Barishal. It is directly connected to the Barishal-Bhola highway on the west which gives direct access to the main city of Barishal. In addition, the site is about 2km away from the University of Barishal and sufficient with all necessary amenities nearby. Another positive aspect of the site is that the longest part of the site is directed to the south with good amount of vegetation to support an environment friendly sustainable design.

1.7 Key Programs and Functions

Unlike regular orphanages, SOS Children's Village follows a different kind of model for the children where there are clusters of houses forming a village with other amenities. To support this project the basic key functional elements are:

- Office Block
- Social Center
- School
- Community Housing
- Multipurpose Hall
- Assistant Director's Residence
- Director's Residence
- Family House
- Common facilities
- Meditation Center

CHAPTER 2: LITERATURE REVIEW

2.1 Understanding 'Orphan'

2.2 Understanding 'Orphanage'

2.3 Origin and Role of Orphanage

2.4 Condition of Orphan Children

2.4.1 Condition of Orphans in Bangladesh

2.5 Philosophy and Concept of SOS

2.1 Understanding ‘Orphan’

Typically an orphan is a child whose parents have died, are unknown or have been abandoned. Various factors such as wars, extreme poverty, epidemic such as AIDS, death of parents, broken family, insurgency etc. leave these children orphan. They often suffer from psychological and physical issues due to lack of proper care and subjected to the most atrocious violence. Orphans like all other children deserve love and affection and equal rights to grow as a healthy human being and an asset to the society.

2.2 Understanding ‘Orphanage’

An orphanage is a resident organization which is dedicated for concern native to child whose parents are dead or else they are not able to support their children (The Faith to Action Initiative, 2014). In other words, an institution and placement of offspring's whose biological guardians are dead otherwise not capable or else reluctant to look after their children is called orphanage (wisegeek, 2003-2015).

2.3 Origin and Role of Orphanage

Since the Middle Ages (500-1500A.D) there have been orphanages or children's homes served by the cities or churches for the homeless children. The first orphanage was opened in North America in 1729 for the homeless white children, after the conflict between Indians and Whites at Natchez, Mississippi. Since then the orphanages grew and between 1830 and 1850 only there were 56 children's institutions in the United States funded by private charitable groups. . In

1747, the number of children abandoned in London forced to establish their- first orphanage in Bloomsbury.

A huge number of children living in these orphanages were not completely orphaned. In fact, from 1847 to 1869, a review of the Protestant Orphan Asylum in St. Louis, Missouri, revealed that only "27% of the children were full orphans. 69% of the children had one parent, the other parent being deceased or absent. 4% of the children had both parents" (Downs, 1983). These orphanages appeared to serve a population of disadvantaged children whose parents were having difficulty providing them with adequate care. Many of the children were in these institutions for less than a year, most of them returning to their family or friends. Thus, it appears that orphanages was providing a temporary place of relief for the family. To address this issue, Social Security Act of 1935 was passed to provide financial assistance to families so that the child would not need to get separated from the family. By 1970s, most orphanages closed down, replaced by foster care and other alternatives.

In Bangladesh, most of the orphanages are supported by various religious endowment, for instance zakat money. It started in Bengal during the British rule, when the government funded for the shelter homes for helpless and orphan children. At present in Bangladesh there are two types of orphanages, one is the independent one having provisions for meal, lodging and education, and another is the religious institution-based attached to a madrasah. There is also one government supported institute called 'Sharakari Shishu Shadan', set up under the Orphan and Widow Homes Act of 1944 to rear up and rehabilitate the orphans in the society.

2.4 Condition of Orphan Children

Children are the most vulnerable individuals getting badly affected by the crisis and conflicts happening around the world. They are relatively rare in developed countries, much higher numbers exist in underdeveloped or developing countries, and mainly in war-torn countries.

Child population makes up 2.2 billion of 7 billion world populations. And 143 to 210 million of them are orphaned.

Conditions causing to be orphan:

- a. Due to war, invasion, conflict etc.
- b. Due to poverty
- c. Due to natural disasters
- d. Because of AIDS

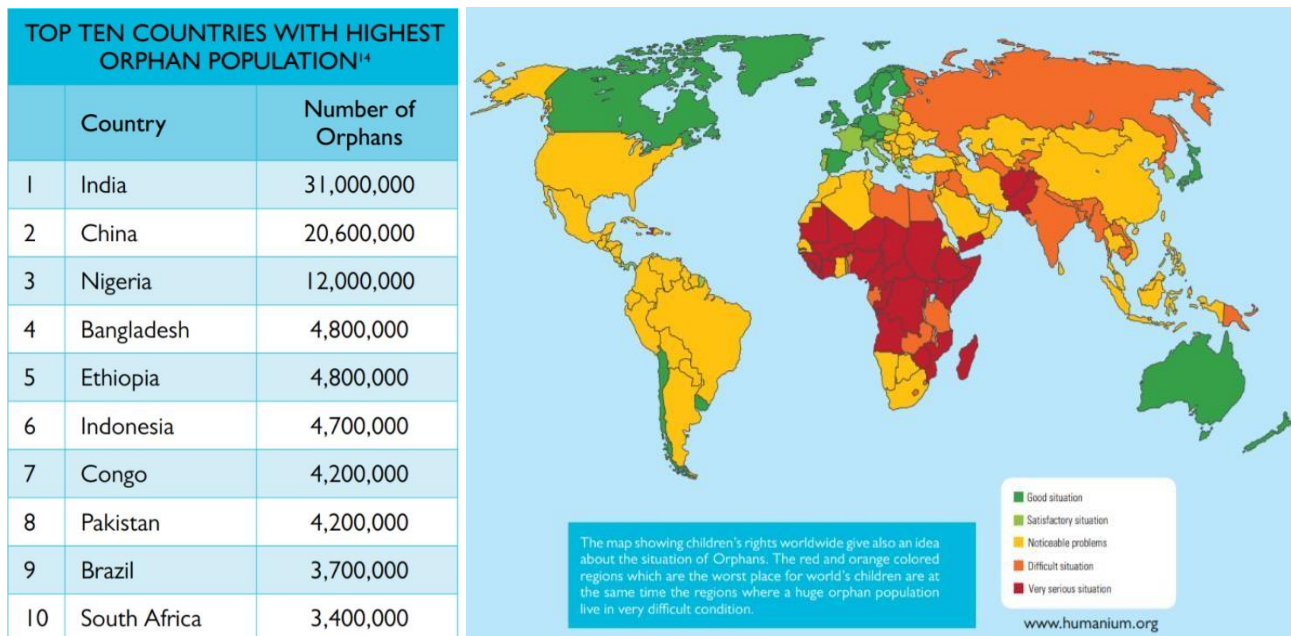


Figure 2.1: Condition of Orphans worldwide. (Source: Kavak, 2014. IHH Humanitarian Relief Researches Center)

Threats against orphans:

- a. Human trafficking
- b. Given up for adoption
- c. Child labour
- d. Organ mafia
- e. Disabled children and begging gangs
- f. Getting involved in crimes and substance addiction

According to a survey majority of the children (60.3%) in the orphanage were malnourished, higher among the boys than girls in the age group of 15-18 years. The orphans suffered significantly from malnutrition compared to those, who had at least one parent alive.

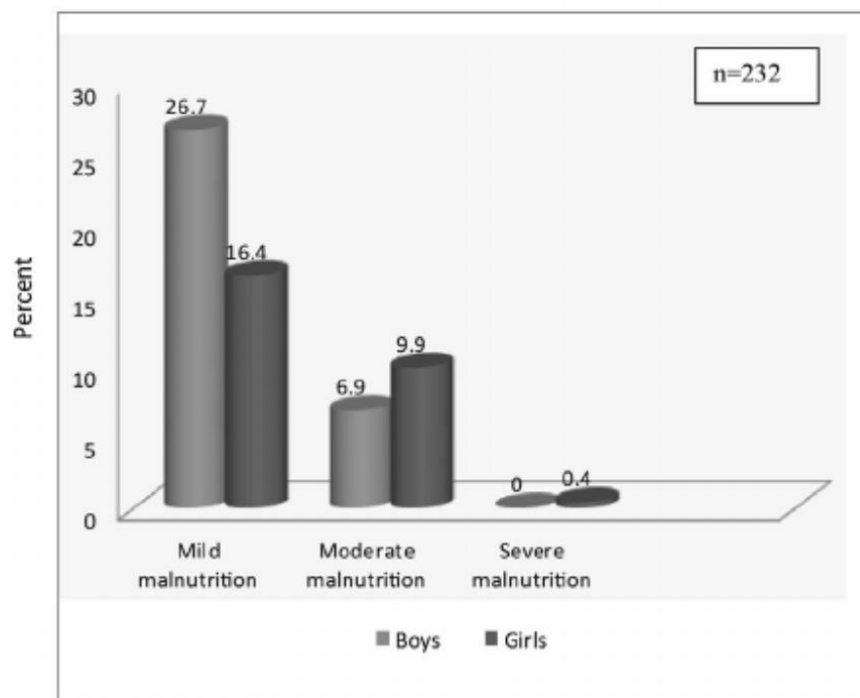


Figure 2.2: Nutritional Status of the children in the orphanages of Dhaka City. (Source: Chowdhury, 2017. “Nutritional Status of children living in an orphanages in Dhaka City, Bangladesh”)

The situation of these orphanages were not good at all, having many instances of child abuse. Moreover, Institutionalization does not meet the emotional, psychological, or physical needs of children and adolescents. "The majority of research on long-term childhood institutionalization, involving multiple caregivers has been shown to lead to important social deficits and problems in interpersonal relationships" (Ford, 1.990).

2.4.1 Condition of Orphans in Bangladesh

Bangladesh is one of the poorest and most densely populated countries in the world. It is affected by repetitive natural disasters like floods, cyclone, drought etc. Apart from that the political unrest over the years have made the people of this county suffer a lot. Despite a lot of development, half the population lives on less than 1USD a day. The quality of and access to education, healthcare, childcare, clean water and also job opportunities are very poor. This low standard of living leaves many people in undesirable situations, effecting many families and children.

Around 40% of the population of Bangladesh are children, and 6.8% of them are orphans which makes about 4.4 million. Local experts estimate that one third of all children do not have parental care or are at risk of losing it, these children include those who are born to single mothers, or live with dislocated families in slum housing. Even though, children under 14 are banned to work, it is estimated that 5 million of them aging between 5 and 14 are involved in child labour, many working in exploitation conditions or high risk jobs. Most of them work in agriculture in the villages, and in cities many have to live in overcrowded squatters, working as domestic workers, in shops or as street children.

2.5 Philosophy and Concept of SOS

Save Our Soul (SOS) children's village was founded in 1949 by a young Austrian medical student, Hermann Gmeiner, after witnessing the sufferings of many abandoned and orphaned children after World War II. It quickly began to grow all over Europe and soon became worldwide. Currently there are 2,000 Children's Villages all over the world, including 6 of them in Bangladesh. The organization works with children, young people and families to tackle child care and child protection globally on a local level. Their goal is to keep families together, provide alternative care when needed, support young people on their path to independence, and advocate for the rights of children.

SOS's unique approach makes it different from the other orphanages noted by Gmeiner, "What orphaned and abandoned children need first and foremost is a family - a family in which they can develop normally." On that concept SOS promises to give the children certain facilities:

- A safe and nurturing home
- A loving SOS mother
- Quality education
- Healthcare
- Nutritious food
- Clothing and toys
- All the things necessary for a bright future

Table 1: Distribution of the Respondent's Personal Information (n = 125)

Categories	N (Percentage)	Categories	N (Percentage)
<u>Age</u>		<u>Reason of Presence in SOS</u>	
Less than 10	25 (20.0)	Death of Parents	103 (82.4)
11—12	52 (41.6)	Others	22 (17.6)
13—14	48 (38.4)	<u>Duration of Stay at SOS (years)</u>	
<u>Sex</u>		Less than 5	25 (20.0)
Boy	66 (52.8)	6 – 8	78 (62.4)
Girl	59 (47.2)	9 + Above	22 (17.6)
<u>Education</u>		<u>Self-awareness</u>	
Primary	59 (47.2)	Yes	108 (86.4)
Middle	38 (30.4)	No	17 (13.6)
Matriculation	28 (22.4)		

Figure 2.3: Information of Orphans living in SOS. (Source: Akram, 2015. “Role of Orphanages to Uplift the Socio-Economic Status of Orphans Focusing on SOS Children’s Villages in Punjab, Pakistan”)

The unique model of SOS Children’s Village is built including 4 fundamental principles,

1. A mother
2. Brother and Sister
3. The house
4. The entire Village

Every house has a mother to take care of the 7 to 8 children in the house where they grow up as brothers and sisters. The villages consist of 10 to 15 houses in clusters. The aim of this approach is to give the children who have been orphaned or separated from their family, a normal homely environment to grow. They are sent to villages close to their origin so that they can meet with their real family or reunite with them if possible.

Even though there are distinct data to prove that institutionalization of children is extremely harmful for their upbringing, a research on SOS Children's Village in Pakistan shows that it is a proper place of living for the orphans.

Table 2: Distribution of the Respondents Regarding to What Extent they are satisfied with the Facilities Provided by SOS villages (n = 125)

Categories	To great extent	To some extent	Not at all
	N (Percentage)	N (Percentage)	N (Percentage)
Sufficient Food	62 (49.6)	34 (27.2)	29 (23.2)
Peaceful Shelter	88 (70.4)	26 (20.8)	11 (8.8)
Proper Education	68 (54.4)	40 (32.0)	17 (13.6)
Health Care	64 (51.2)	20 (16.0)	41 (32.8)
Recreational activities	59 (47.2)	39 (31.2)	27 (21.6)

Figure 2.4: Facilities and Satisfaction level of SOS children. (Source: Akram, 2015. "Role of Orphanages to Uplift the Socio-Economic Status of Orphans Focusing on SOS Children's Villages in Punjab, Pakistan")

Table 3: Distribution of the Respondent's perception about SOS Villages (n = 125)

Categories	Agree	Neutral	Disagree
	N (Percentage)	N (Percentage)	N (Percentage)
SOS is a Proper Place of Living for Orphans	108 (86.4)	10 (8.0)	07 (5.6)
The Environment of SOS is Close to a Natural Home	72 (57.6)	32 (25.6)	21 (16.8)
SOS provides a Platform for Personality Development	79 (63.2)	16 (12.8)	30 (24.0)
The administration's attitude is good/friendly for them	62 (49.6)	34 (27.2)	29 (23.2)

Figure 2.5: Satisfaction level of SOS children. (Source: Akram, 2015. "Role of Orphanages to Uplift the Socio-Economic Status of Orphans Focusing on SOS Children's Villages in Punjab, Pakistan")

CHAPTER 3: SITE AND CONTEXT ANALYSIS

3.6 Location of the Site

3.7 Background of the Site

3.8 Climatic Analysis

3.8.1 Average Temperature and Precipitation

3.8.2 Wind Flow

3.8.3 Comfort Zone

3.9 Existing Condition of the Site

3.10 Context Analysis

3.10.1 Figure Ground Map

3.10.2 Land Use Pattern

3.10.3 Building Height Pattern

3.10.4 Route Network Pattern

3.10.5 Surrounding Amenity

3.10.6 Vehicular Movement

3.1 Location of the Site

The location of the site is in the Barishal District on the East of the River Kirtankhola. It is directly connected to the Barishal city, located on the West of the river through Barishal-Bhola highway. It is one the oldest municipalities and river ports of Bangladesh and the area is undergoing massive urbanization.

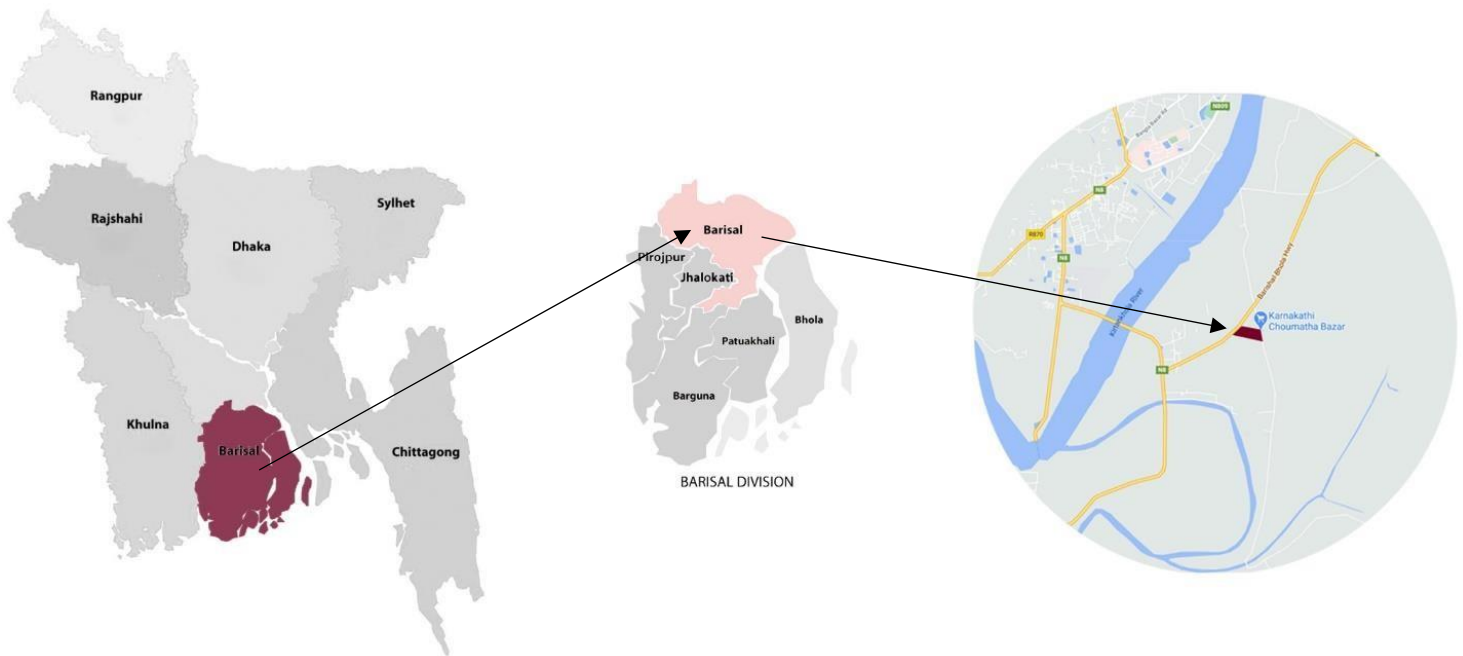


Figure 3.1: Location of the site. (Source: Author)

3.2 Background of the Site

Barishal is one of the seven administrative divisions of Bangladesh, located in the south-central part of the country, bounded by Dhaka division on the north, Bay of Bengal on the south, Chittagong and Khulna division on the east and west respectively. It has an area of 13,644.85

sqkm and a population of around 8,147,000. The division is crisscrossed by several rivers. The site is located near the Barishal city lying in the Padma river delta adjacent to the Kirtankhola River.

Barishal is an important district for rice production, once known as the ‘Granary of Bengal’. It is a trade center, most notably for rice, jute and fish. River is the main transport of Barishal, generating many other functions connected to the river like floating market.



Figure 3.2: Images of Barishal. (Source: Google)

3.3 Climatic Analysis

Barishal has a tropical wet and dry climate. Here the climate weather is a compilation of temperature, humidity and rainfall.

3.3.1 Average Temperature and Precipitation

Gathering the weather information of Barisal, the average lowest daily temperature in January and is about 12.6°C, whereas the highest in May when it turn into 25.7°C.

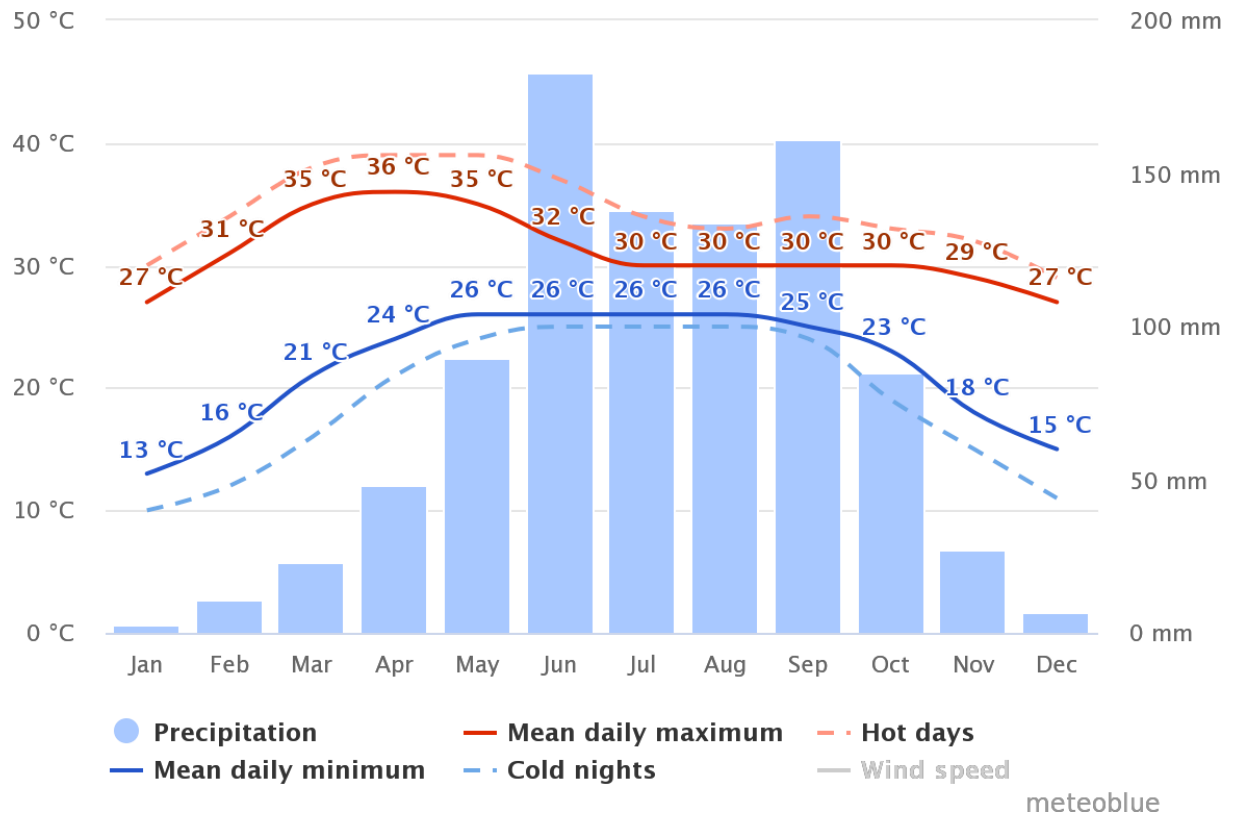


Figure 3.3: Average temperature and precipitation of Barishal. (Source: Meteoblue)

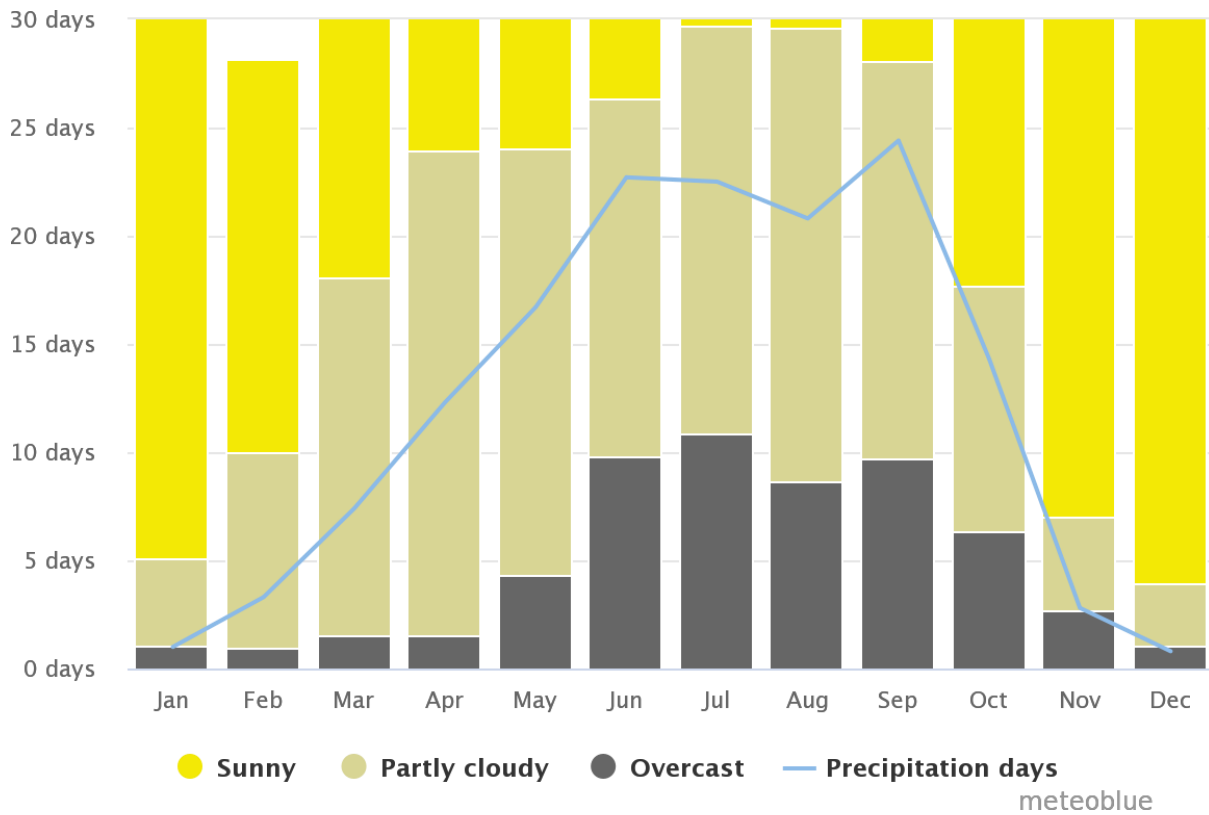


Figure 3.4: Monthly Cloudy, Sunny and Precipitation Days of Barishal. (Source: Meteoblue)

The graph shows the monthly number of sunny, partly cloudy, overcast and precipitation days.

Days with less than 20% cloud cover are considered as sunny, with 20-80% cloud cover as partly cloudy and with more than 80% as overcast.

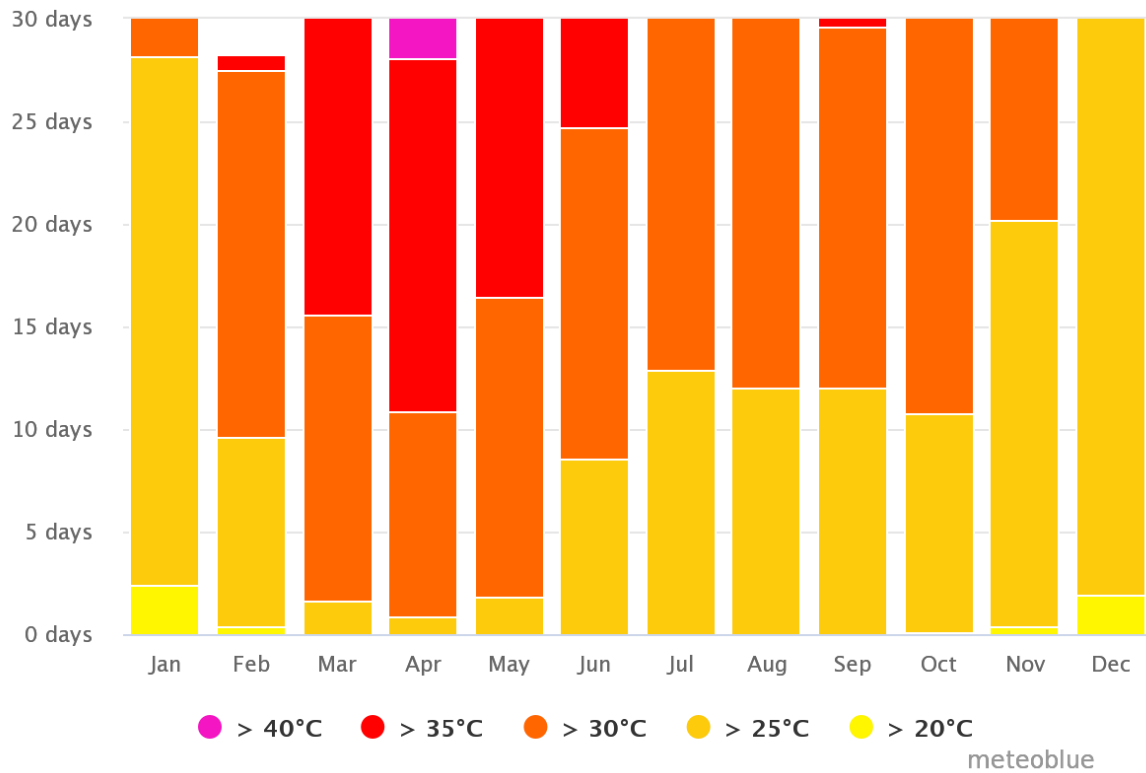


Figure 3.5: Maximum Temperatures of Barishal. (Source: Meteoblue)

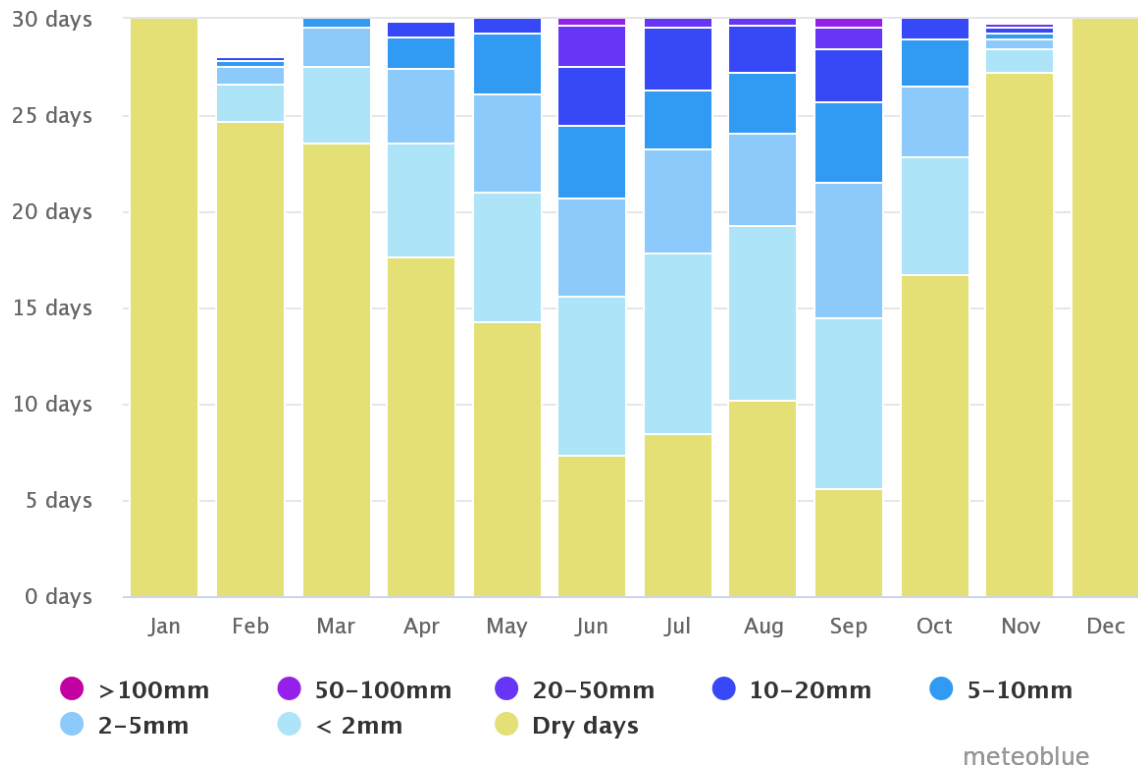


Figure 3.6: Precipitation Amounts of Barishal. (Source: Meteoblue)

3.3.2 Wind Flow

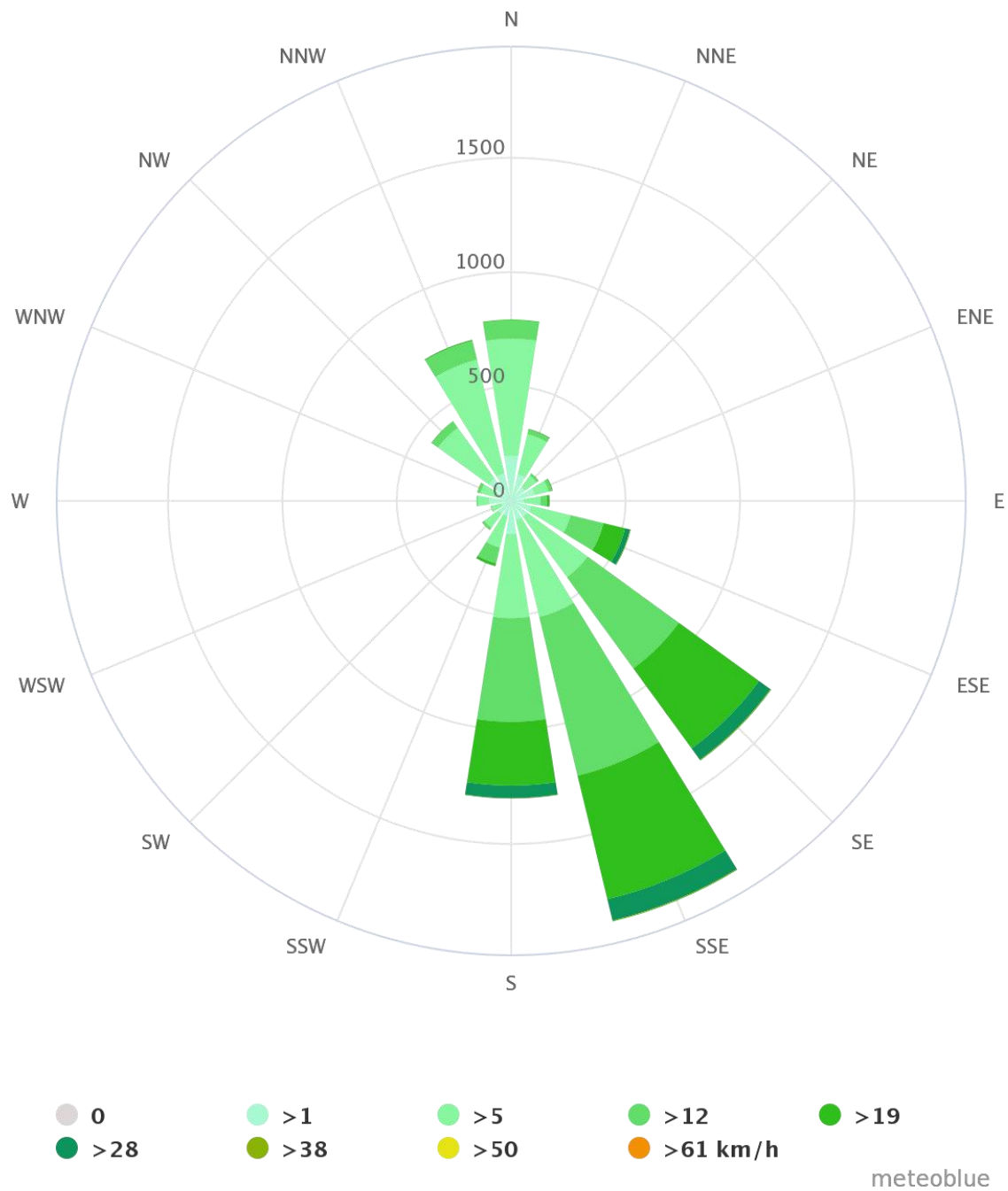


Figure 3.7: Wind Rose of Barishal. (Source: Meteoblue)

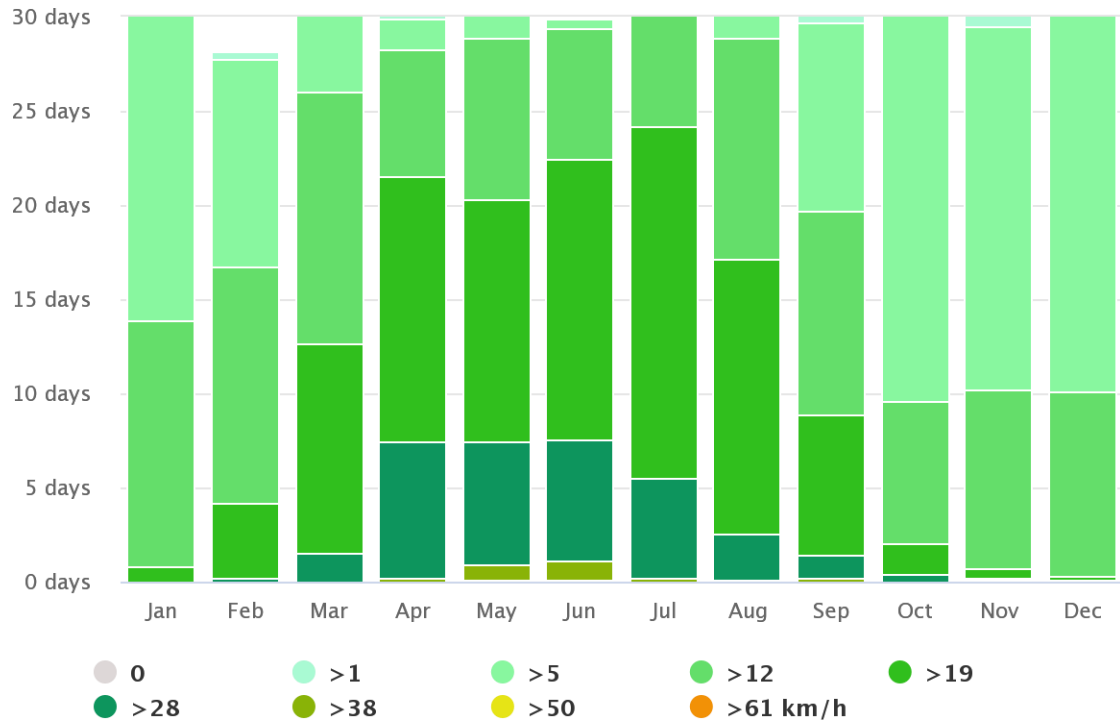


Figure 3.8: Wind Speed of Barishal. (Source: Meteoblue)

3.3.3 Comfort Zone

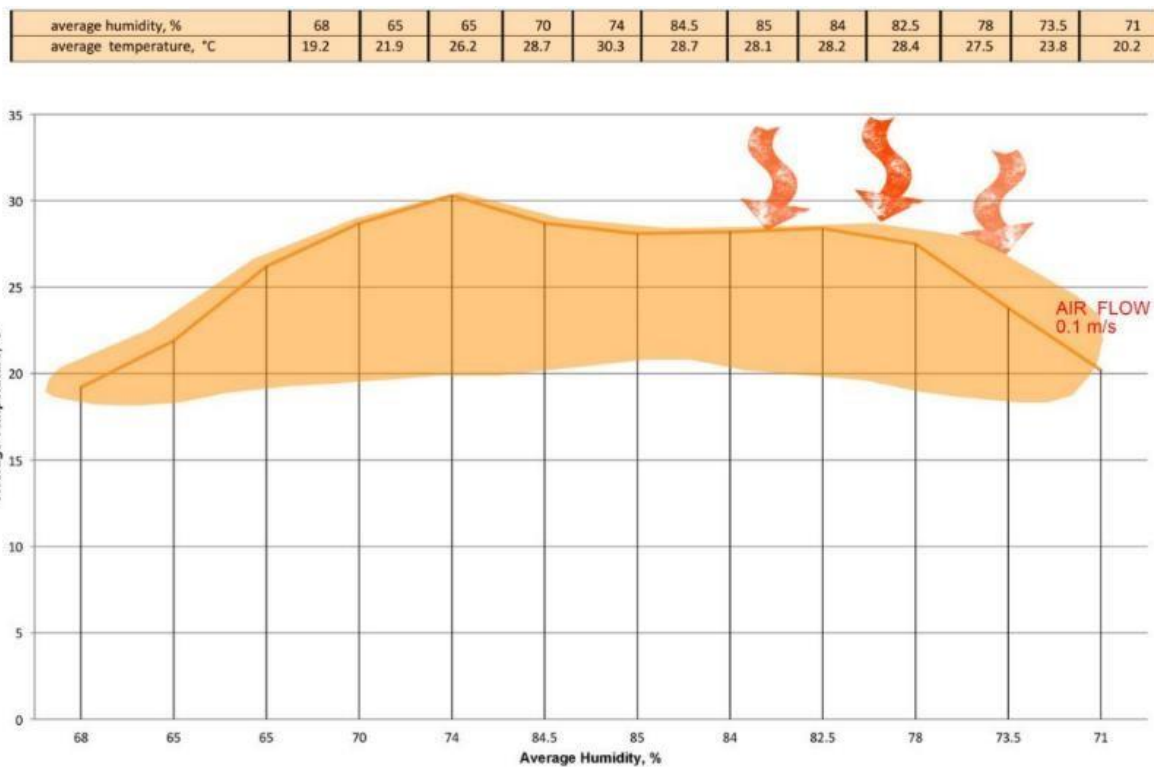


Figure 3.9: Comfort Zone of Barishal. (Source: Meteoblue)

3.4 Existing Condition of the Site

The existing site for the project is at present a uniform barren land surrounded by large amount of green especially on the west and east. There is an existing paddy field on the north and a water body on the south. The site is surrounded by roads on three sides with supporting functions like local bazar, grocery, pharmacy, restaurant, mosque, school etc. On the South side there is a residential zone with abundant farming and green land.





Figure 3.10: Images of Site and Surrounding. (Source: Seminar Paper of Fariha Rashid)

3.5 Context Analysis

3.5.1 Figure Ground Map

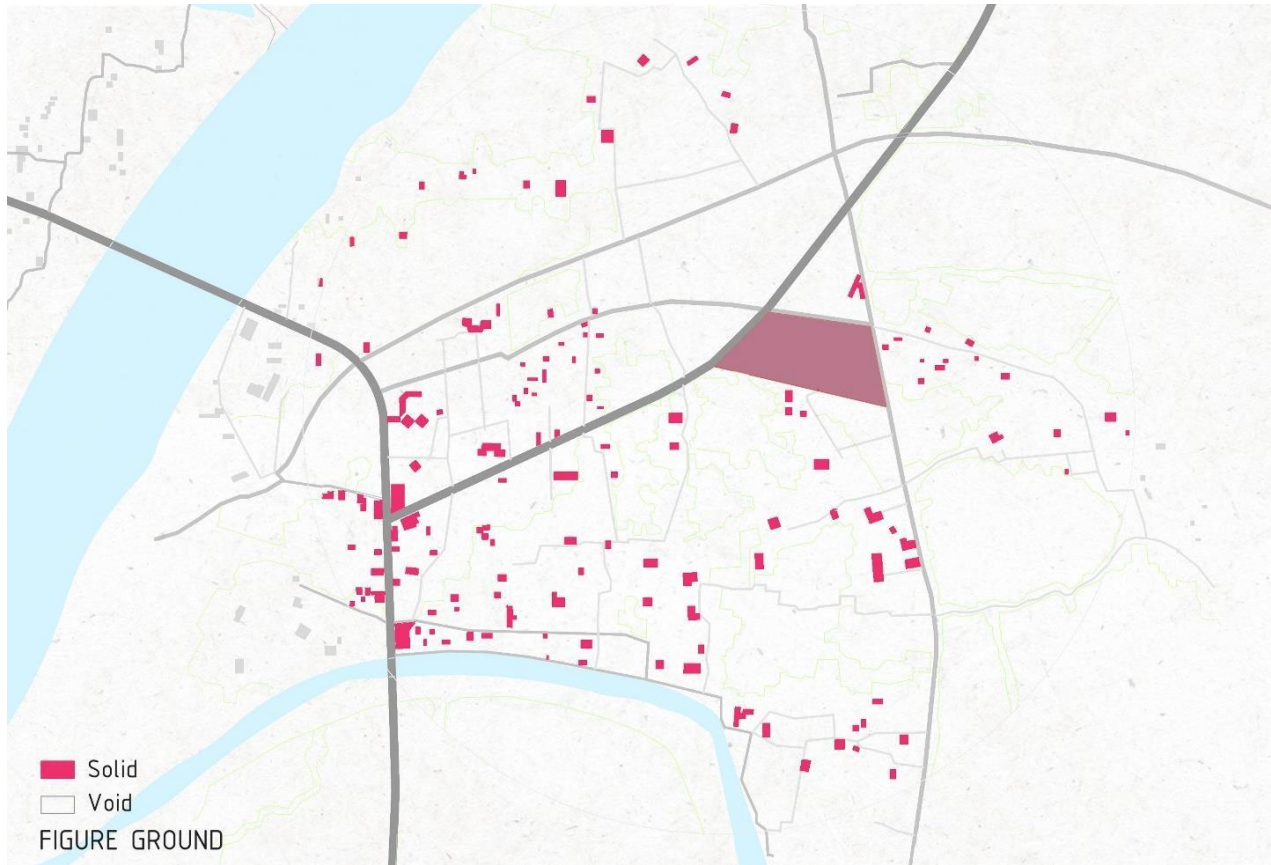


Figure 3.11: Figure Ground Map. (Source: Author)

The surrounding location is a low density area with around 30% Solid and the rest green and void spaces.

3.5.2 Land Use Pattern

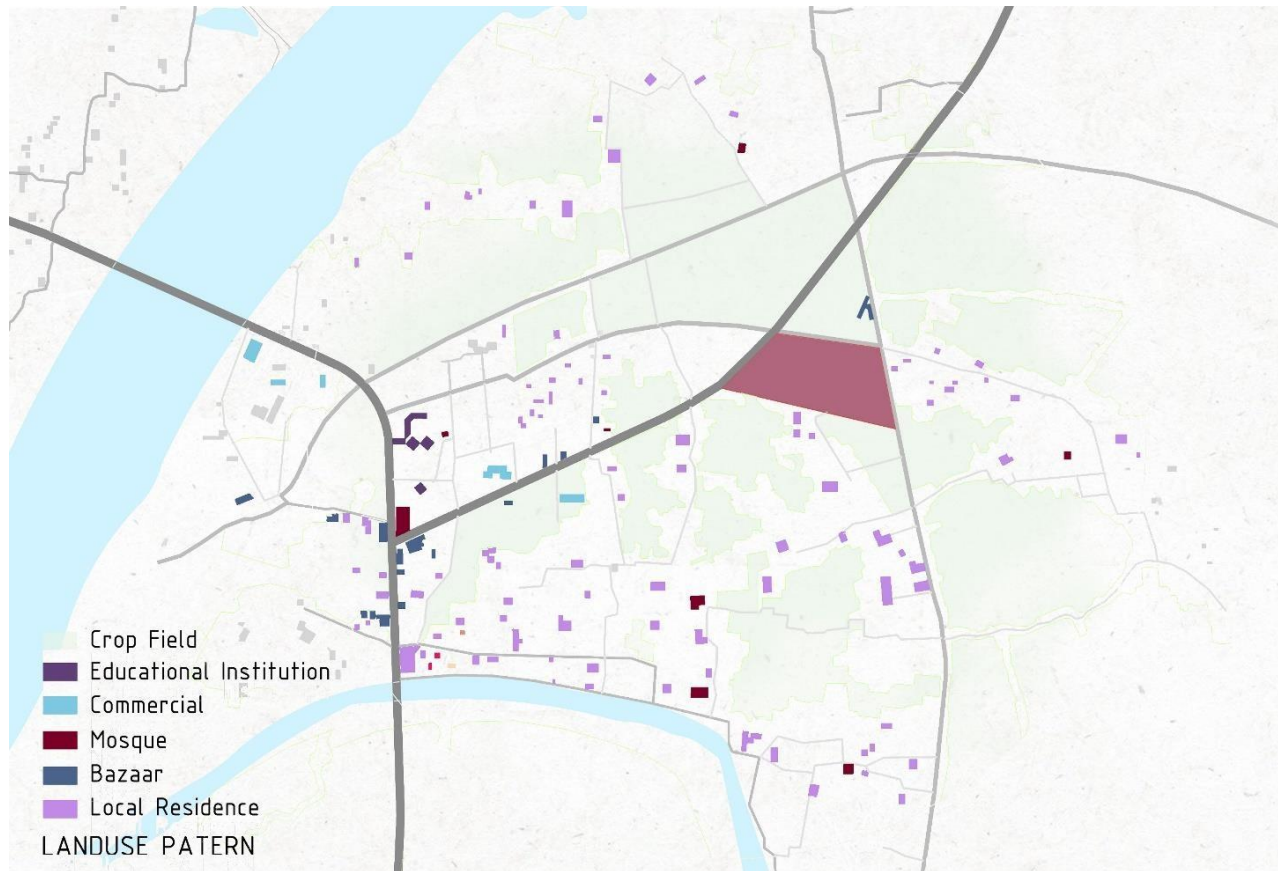


Figure 3.12: Land use Pattern Map. (Source: Author)

The surrounded neighborhood is mostly residential buildings with vast farming lands. Various commercial activities are present on the road edges including the University of Barishal is located very close to the site.

3.5.3 Building Height Pattern

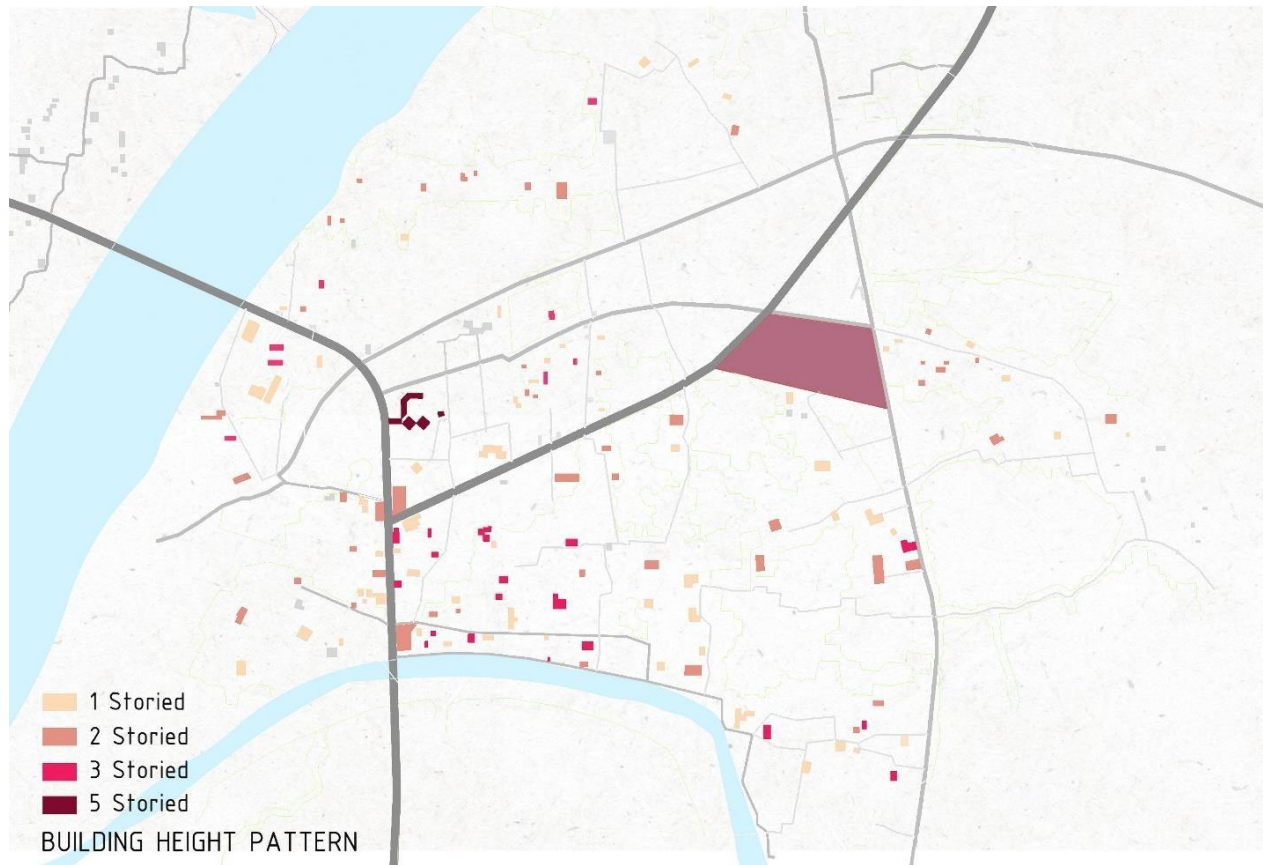


Figure 3.13: Building Height Map. (Source: Author)

The area consists of mostly low height buildings of 1 to 3 stories, the only 5 story building being the Barishal University.

3.5.4 Route Network Pattern

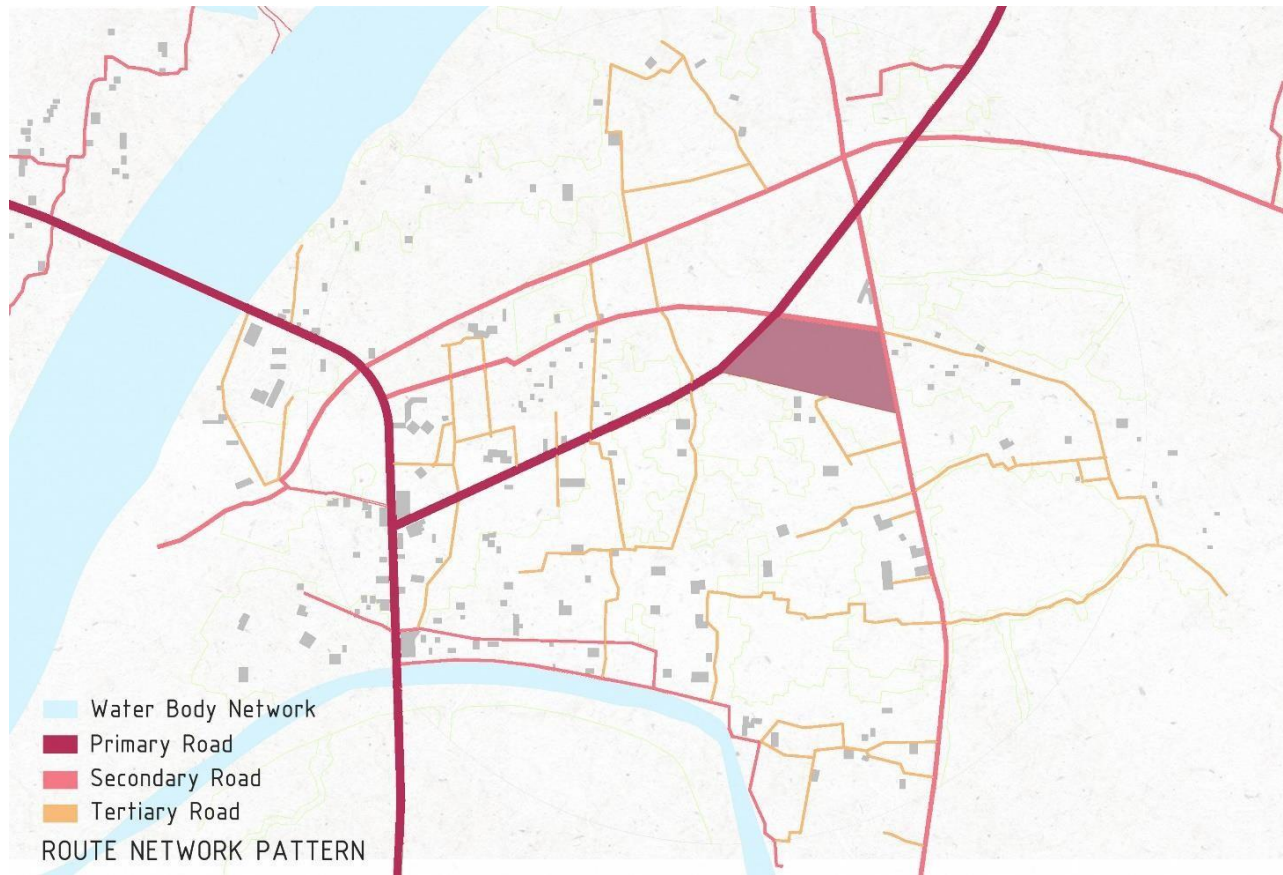


Figure 3.14: Route Network Pattern Map. (Source: Author)

The site is directly connected to the main city of Barishal, located on the other side of the river through the Dopdopia Bridge. On the West the site is connected to the Barishal-Bhola Highway, including access on the North and East side as well.

3.5.5 Surrounding Amenity

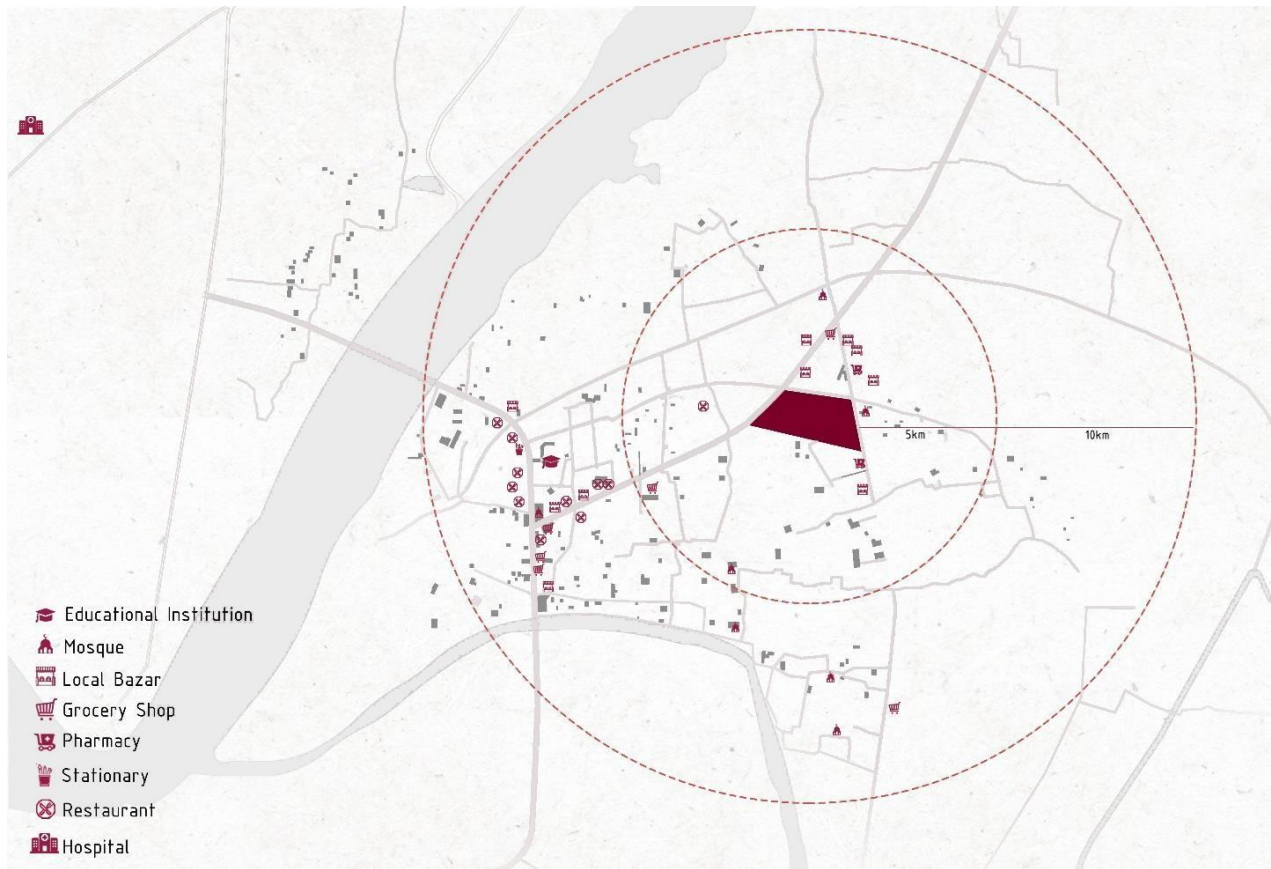


Figure 3.15: Surrounding Amenities Map. (Source: Author)

The area is well facilitated by necessary amenities in walkable distance. The only facility not available close by is a hospital which is located in the other side of the river.

3.5.6 Vehicular Movement

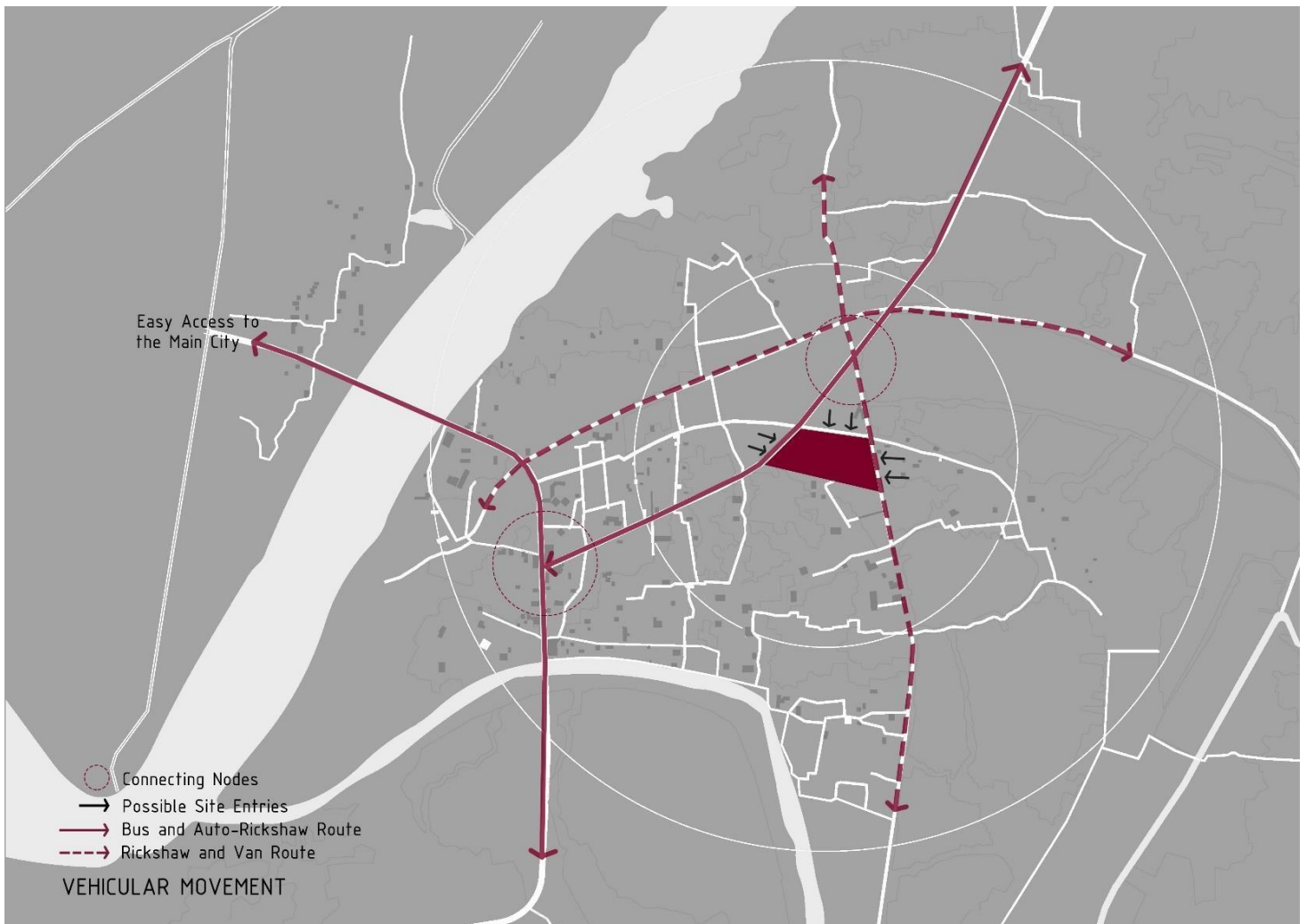


Figure 3.16: Vehicular Movement Map. (Source: Author)

CHAPTER 4: PROGRAM DEVELOPMENT AND ANALYSIS

- 4.1 Program Rationale
- 4.2 Square feet and Area of Program
- 4.3 Grand Total
- 4.4 Functional Flow and Program Analysis

CHAPTER 4: PROGRAM DEVELOPMENT AND ANALYSIS

4.1 Program Rationale

The basic understanding of the programmatic requirements of the project can be gathered from the project's overview and client requirement. A few programs have been added to the existing one in order to deliver a successful project which would be useful for all users. As an alternate housing for destitute children or orphans, it is important to provide them with all the necessary facilities in order to give them a healthy normal life. The programs were built by having those factors in consideration.

- Giving them a regular lifestyle in order to keep them both physically and emotionally balanced; with the help of a family, home, educational institute, medical services, recreation etc.
- Providing training programs to improve their skills, like vocational training, workshop, awareness program etc. and also other functions to enhance their knowledge.
- Supporting functions for the administrative body.
- Additional functions to include the local community with the SOS community.

4.2 Square feet and Area of Program

Functions	Type of Use	Area Required Per Room sq-ft	Number of Room	Total Room Area sq-ft
Administrative Block	Directors Room	150	1	160
	Assistant Director's Room	150	1	150
	Conference Room	225	1	255
	Office Room	150	2	300
	Kitchenette	80	1	80
	Toilets			200
	Total			1,145
	Circulation			229
	Total:			1,374
Social Center	Waiting Room and Dispensary	176	1	176
	Doctors Room	100	1	100
	Nurse Station	150	1	150
	Examination Room	180	1	180
	Toilets			70
	Total			676
	Circulation			136
	Total:			812
Primary School	Class Rooms	300	8	2,400
	Head-Masters Room + Toilet	150	1	150
	Teachers Room + Toilet	320	1	320
	Meeting Room	620	1	620
	Library	600	1	600
	Computer Lab	320	1	320
	Toilet			350
	Total			4,760
	Circulation			952
	Total:			5,712
Multipurpose Hall	Main Hall	1550	1	1,550
	Waiting	300	1	300
	Preparation Room	580	1	580
	Toilet			320
	Total			2,750
	Circulation			500
	Total:			3,300
Daycare Center	Daycare	181	2	362

	Toilet	98	1	98
	Total			460
	Circulation			92
	Total:			552
Community House	Guest Room	290	2	580
	Aunt's Room	134	3	402
	Staff Room	290	2	580
	Old Mothers Room	125	2	250
	Toilets	70	2	140
	Total			1,952
	Circulation			390
	Total:			2,342
Assistant Director's Residence	Living + Dining	310	1	310
	Children's Bed	100	1	100
	Master Bed	20	1	120
	Kitchen + Store	80	1	80
	Toilets	70	2	140
	Verandah	40	3	120
	Total			790
	Circulation			158
	Total:			950
Director's Residence	Living + Dining	472	1	472
	Children's Bed	120	1	120
	Master Bed	140	1	140
	Kitchen + Store	80	1	80
	Toilets	84	2	168
	Verandah	60	3	180
	Total			956
	Circulation			192
	Total:			1,148

Family House			
Type of Use	Number of Users	Number of Room	Total Room Area sq-ft
Living + Dining	10	1	300
Children's Bed	8	2	450
Mother's Bed	1	1	200
Kitchen + Store		1	140
Study	4	2	200
Toilets		2	140
Verandah and Store		2	160
Total			1,610
Circulation			483

Total:			2,500 sq-ft
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Family House: (14 x 2,500) = **35,000 sq-ft**

Others		
Functional Activity	Number of People	Total Room Area (approximate) sq-ft
Reception		1,000
Lobby and Waiting		1,500
Special Outdoor Spaces for Activities and Life-skill Training		4,500
Semi-outdoor reading area		200
Indoor Games Room	100	10,000
Walk Through Gallery		5,000
Trainer's Room	5	1,500
Art, Music and Painting		2,000
Club Activity	20-25	1,000
Exhibition Court		3,000
Service Block + Store		3,000
Shops		2,000
Finance and IT Sector		1,500
Open Platform for Awareness Programs		1,000
Total		43,500 sq-ft

Total Area:

1,374 sq-ft + 812 sq-ft + 552 sq-ft + 2,342 sq-ft + 5,712 sq-ft + 3,300 sq-ft + 950 sq-ft + 1,148 sq-ft + 35,000 sq-ft + 43,500 sq-ft

= 94,690 sq-ft

4.3 Grand Total

Area: 10 Acre or 435,600 sq-ft

Total Built area: 94,690 sq-ft

Circulation Area: 28,407 sq-ft (30% of Total Built Area)

In Total: 120,097 sq-ft

4.4 Functional Flow and Program Analysis

A functional flow diagram is a sequence and step by step flow diagram of a systematic program course or trail. The proposed programs are distributed into different zones, Public zone, Semi-private zone and Private zone.

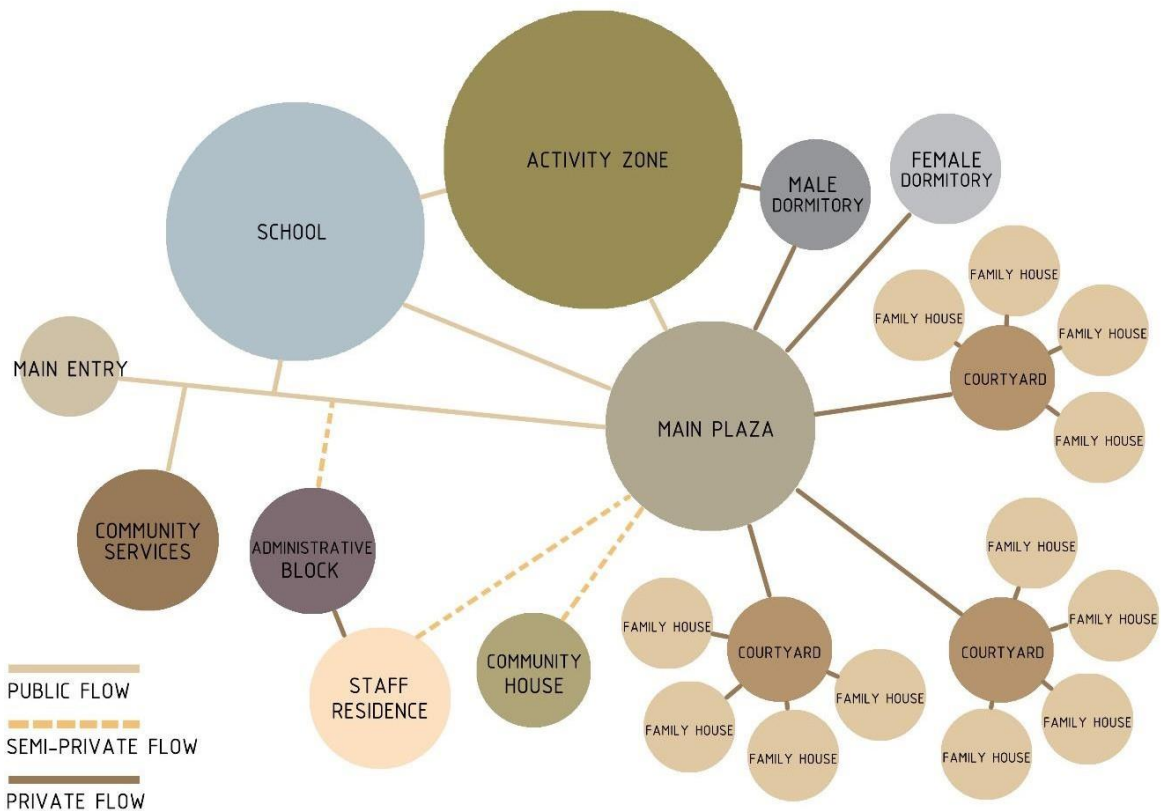


Figure 4.1: Functional Flow Diagram. (Source: Author)

CHAPTER 5: CASE STUDY

5.1 Sub-Continental Case Study

5.1.1 *Druk White Lotus School*

5.2 Local Case Study

5.2.1 *SOS Children's Village*

5.1 Sub-Continental Case Study

5.1.1 *Druk White Lotus School*

- Location: Shey ,Ladhak
- Firm: Arup Associates
- Year: 2001

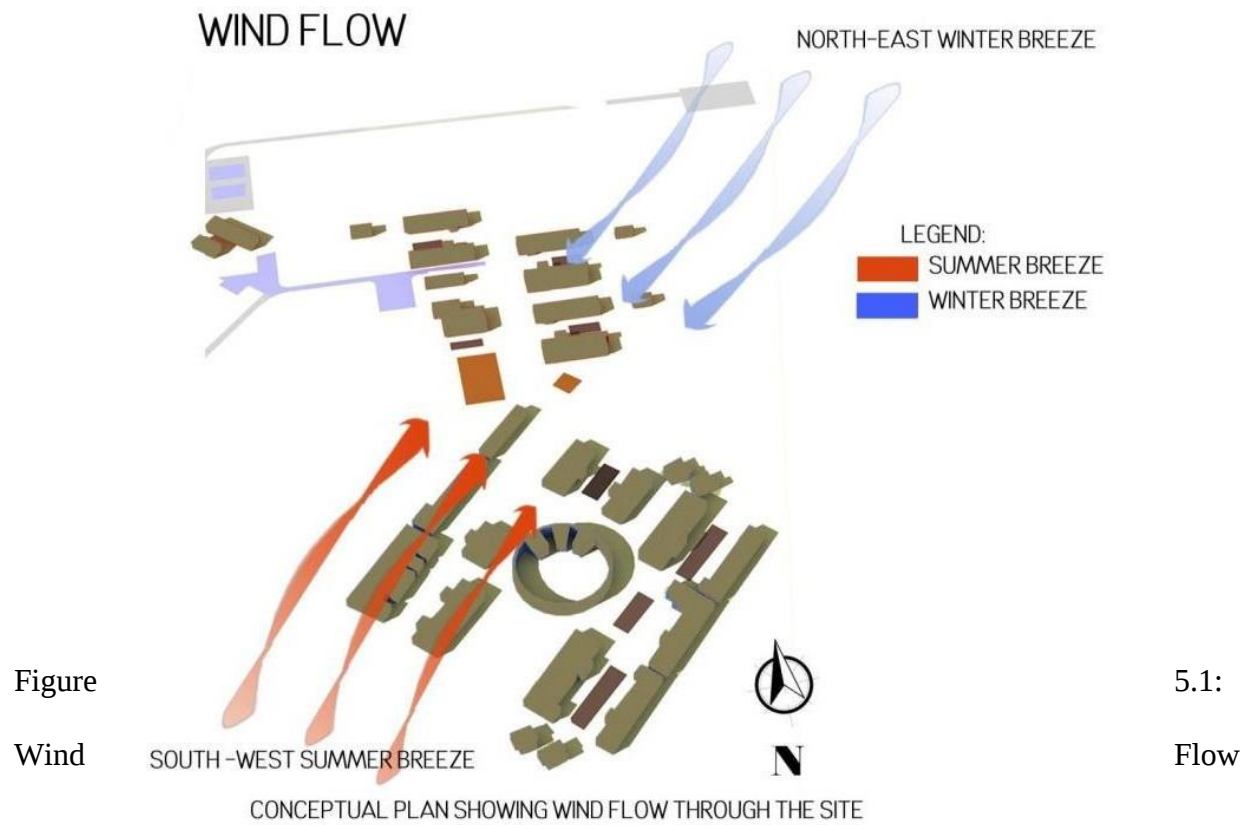
The Druk White Lotus School, locally Known as Druk Padma Karpo School, is a non-denominational educational community in the Ladhak, a remote region in India. They provide education for 840 students from nursery to 16 year old, as well as residential facilities for 350 students. The architecture of this school celebrates the local values, while at the same time incorporating technology and construction methods from the West. It was conceived by the clients as a model for sustainable development in that remote region and have formulated new approaches to education in Ladhak after working for 15 years with the architects. The result is a school that offers 'whole life' sustainability, a combination of energy conservation, sustaining local identity and building using native techniques and materials. It has become a model of

sustainability, in the sense that traditional cultural values, spirituality and materials are maintained.

His Holiness the Dalai Lama was moved by the outcome and quoted “The idea of having a modern school which lays equal emphasis on the importance of preserving the valuable aspects of a traditional culture is very encouraging, I have always believed in giving equal importance to both modern, scientific knowledge and traditional Buddhist Culture.”

The school was built in different phases, the first phase, the nursery and infant courtyard, opened in September 2001, followed by the junior school in 2003. The basic secondary school facilities were completed by 2015, additional facilities as well as a sixth form college for 16-18 year olds are planned for the future.

Analysis



Figure

Wind

5.1:

Flow

Analysis of Druk White Lotus School. (Source: amitzkpa.wordpress)

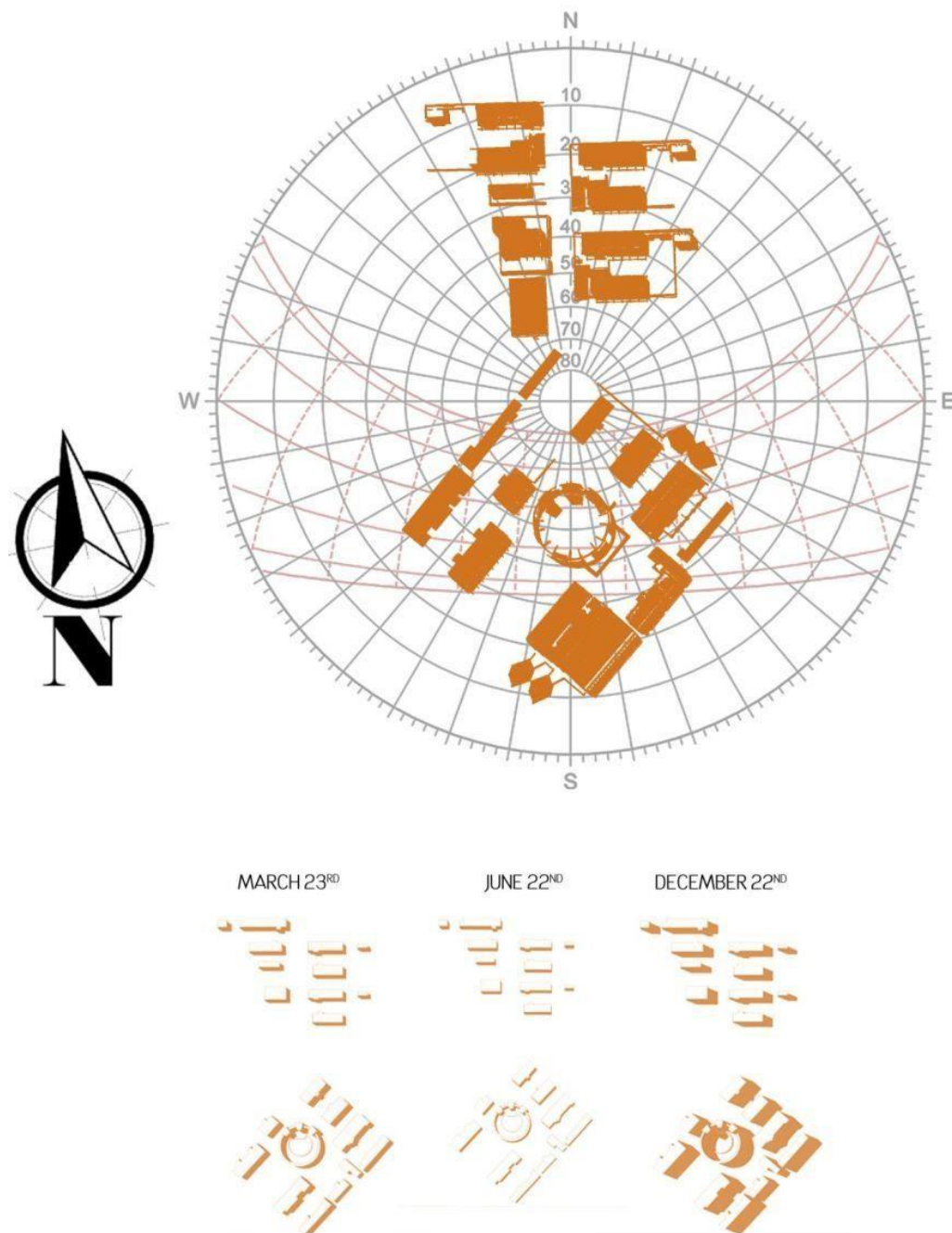


Figure 5.2: Solar Analysis of Druk White Lotus School. (Source: amitzkpa.wordpress)

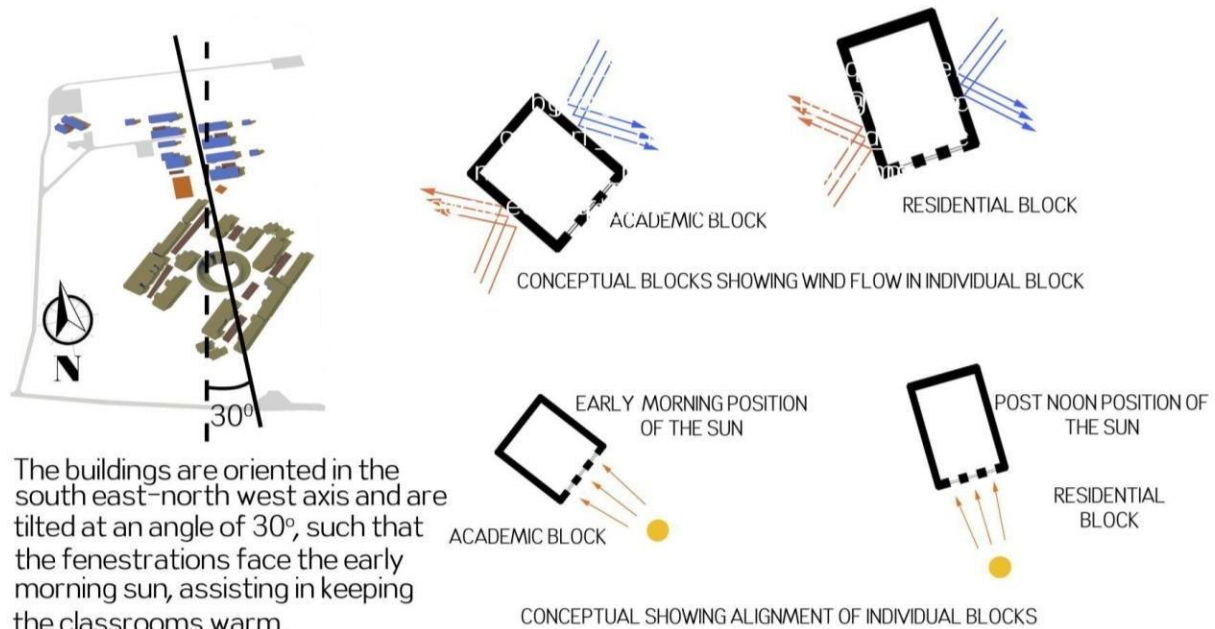
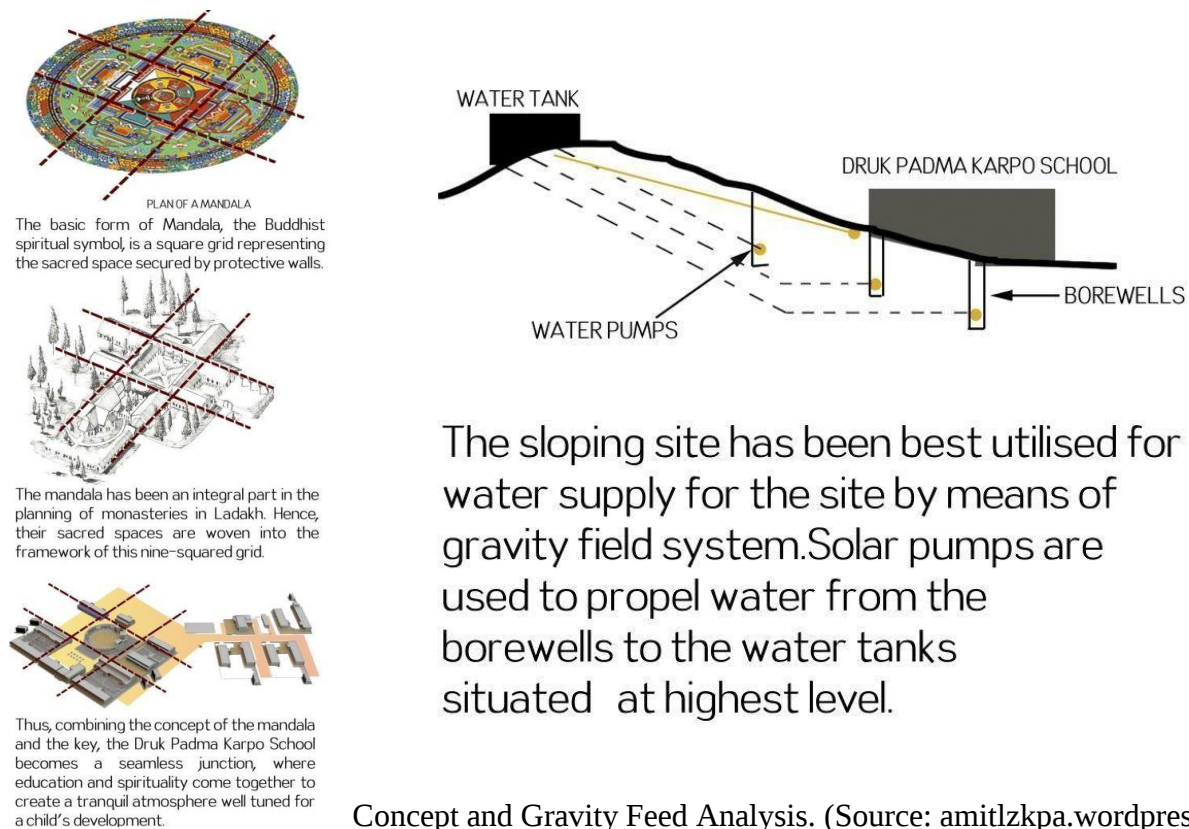


Figure 5.3: Orientation Analysis of Druk White Lotus School. (Source: amitzkpa.wordpress)

Figure 5.4:



Concept and Gravity Feed Analysis. (Source: amitzkpa.wordpress)



Figure 5.5: Massing and Spatial Analysis. (Source: amitzkpa.wordpress)

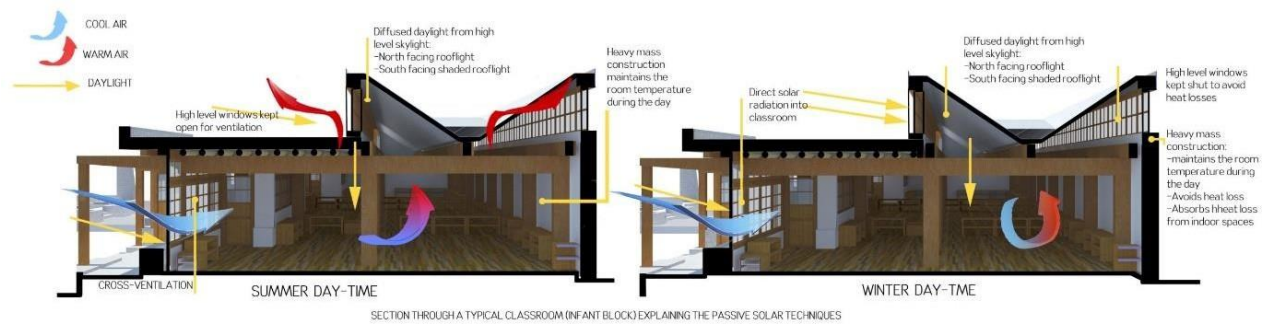
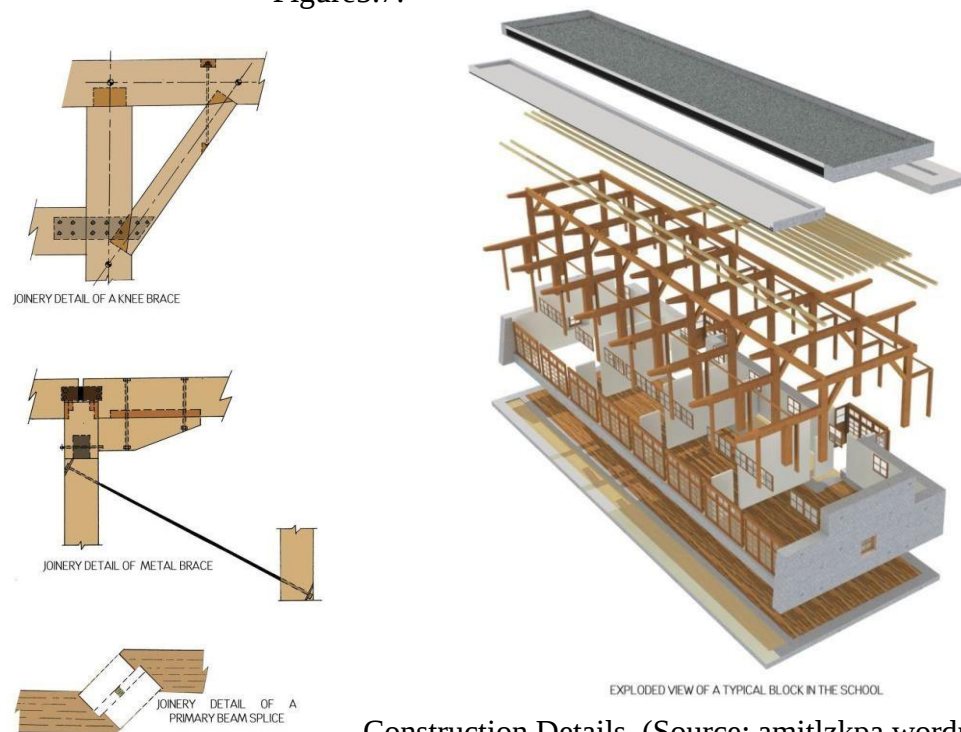


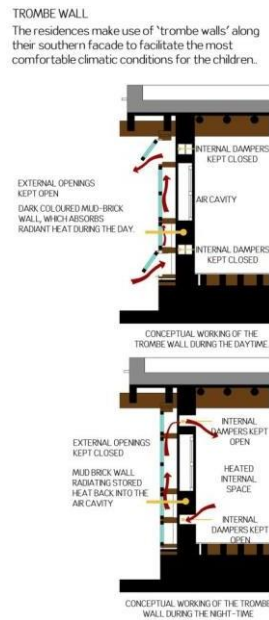
Figure 5.6: Passive Temperature Regulation using Solar Heat. (Source: amitzkpa.wordpress)

Figure 5.7:



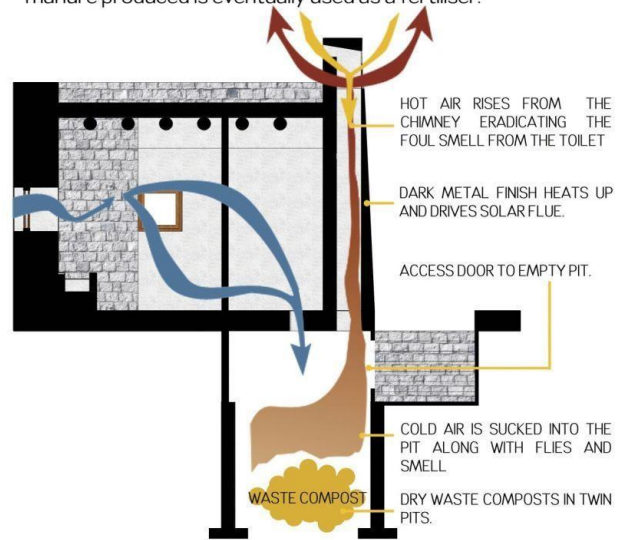
Construction Details. (Source: amitzkpa.wordpress)

Figure



5.8:

The system is double chambered with an integrated solar chimney eliminating any parasites and odour problems. The manure produced is eventually used as a fertiliser.



Trombe Wall. (Source: amitzkpa.wordpress)

Building Drawings

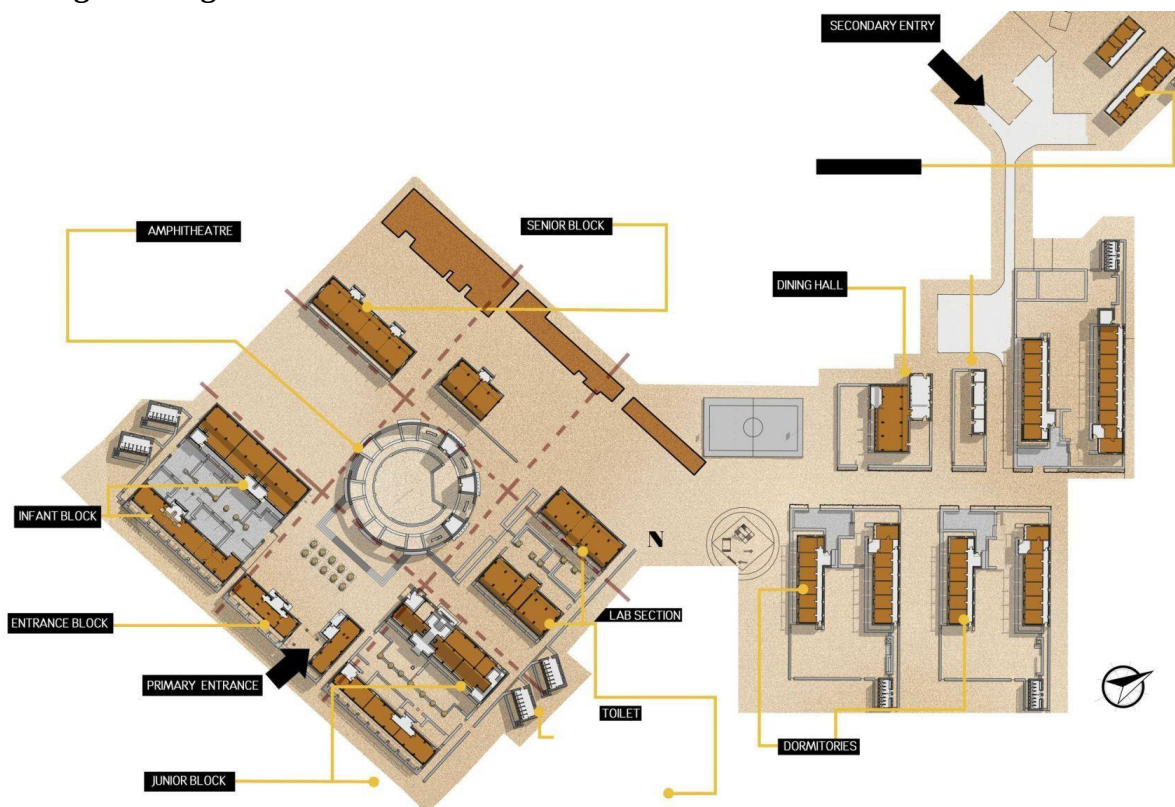


Figure 5.9: Site Plan. (Source: amitzkpa.wordpress)

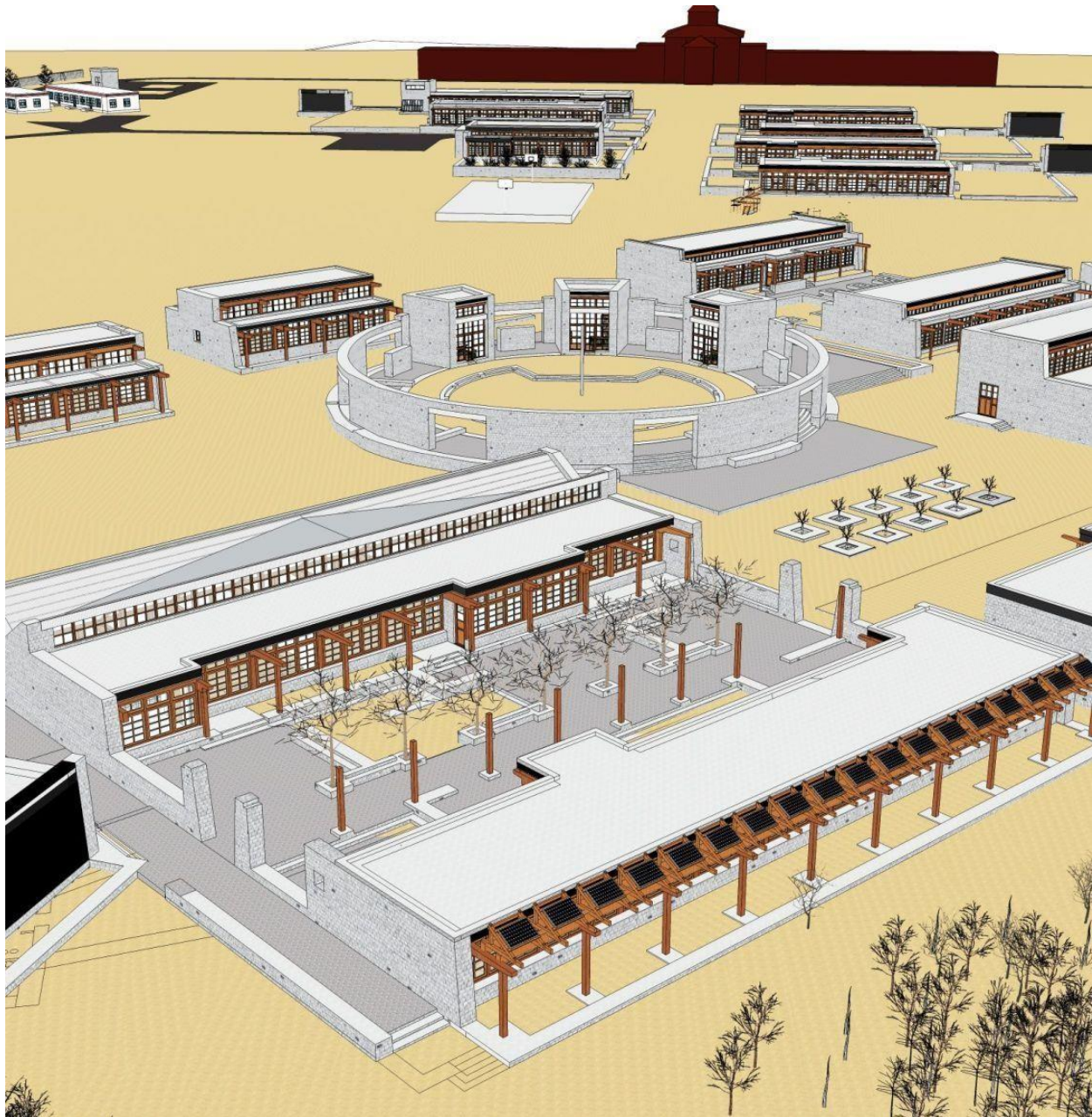


Figure 5.10: Site Axonometric Drawing. (Source: amitzkpa.wordpress)



Figure 5.11: Section AA'. (Source: amitzkpa.wordpress)



Figure 5.12: Section EE'. (Source: amitzkpa.wordpress)



Figure 5.13: Section GG'. (Source: amitzkpa.wordpress)

5.2 Local Case Study

5.2.1 SOS Children's Village

- Location: Bogra
- Architect: Raziul Ahsan
- Area: 5 Acres

The project is located in the rural area outside the city of Bogra beside the highway. It consists of 10 houses providing total of 100 children. To benefit the local community people and the children, a high school and social center was also built in addition to the ancillary facilities.

The site was on two levels, where half the site was 10 feet higher than the other. The lower part was a paddy field and the higher part was a part of an embankment beside the canal and also an existing brick field. The natural contour was kept to create a landscape at various levels. A depressed court with strips of sitting is created from the natural depression of the brickfield for the mothers and children to create a community bondage.

Each building around the court has its own identity created by level changes, low walls and gardens. The veranda being the most intimate space for children's play and sitting was designed in various sizes and shape at various levels. The exterior spaces were scaled down for children so that they spend more time outside and connect with the nature.



Figure 5.14: Master Plan. (Source: Archnet)



Figure 5.15: Images of SOS Children's Village. (Source: Archnet)

CHAPTER 6: CONCEPT AND DESIGN DEVELOPMENT

6.1 Concept Development

6.2 Final Design Drawings

6.3 Perspective

6.1 Concept Development



Figure 6.1: Concept Generation (Source: Author)



Figure 6.2: Concept Generation (Source: Author)



Figure 6.3: Form Generation (Source: Author)

6.2 Final Design Drawings



Figure 6.4: Roof Plan (Source: Author)



Figure 6.5: Master Plan (Source: Author)



Figure 6.6: First Floor Plan (Source: Author)

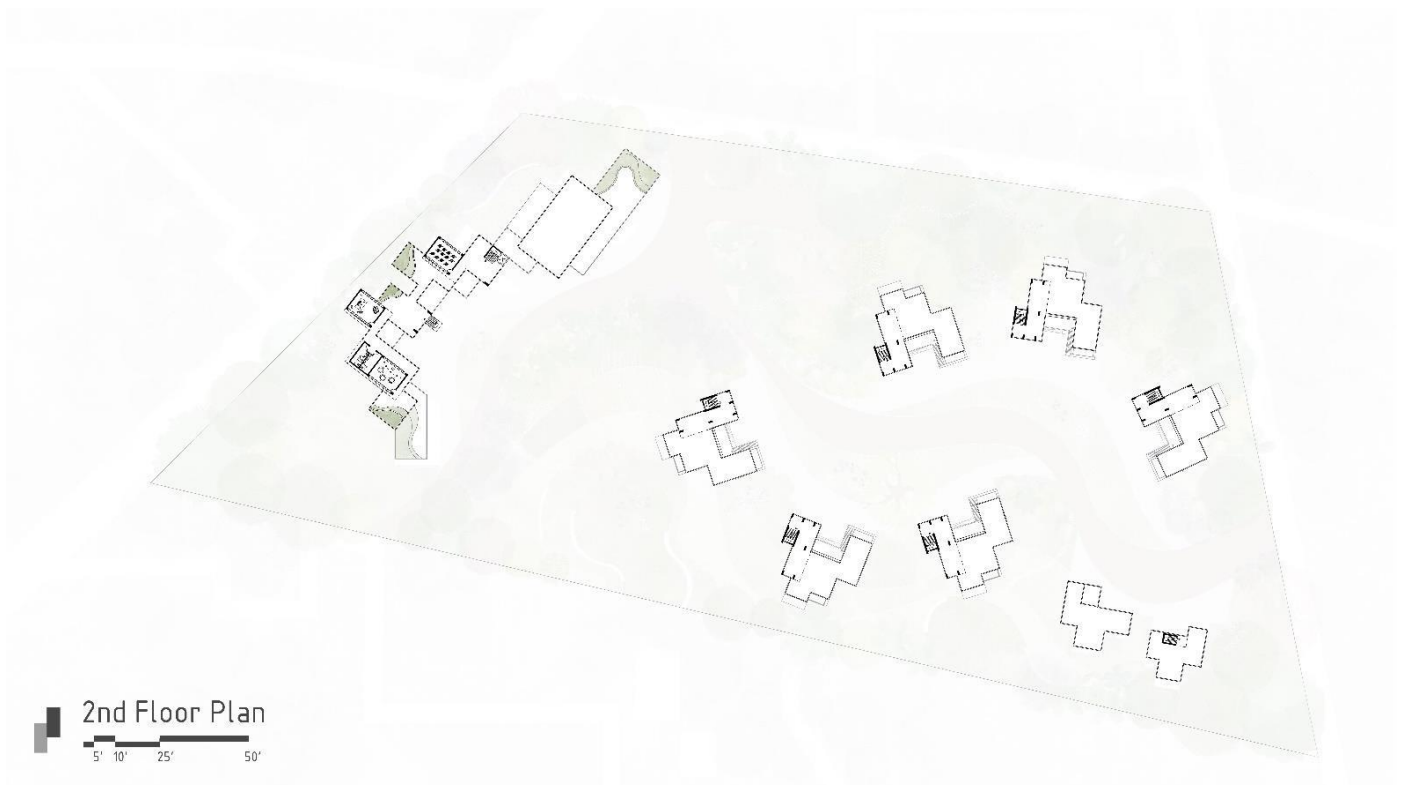


Figure 6.7: Second Floor Plan (Source: Author)





Figure 6.8: Public Block Floor Plans (Source: Author)

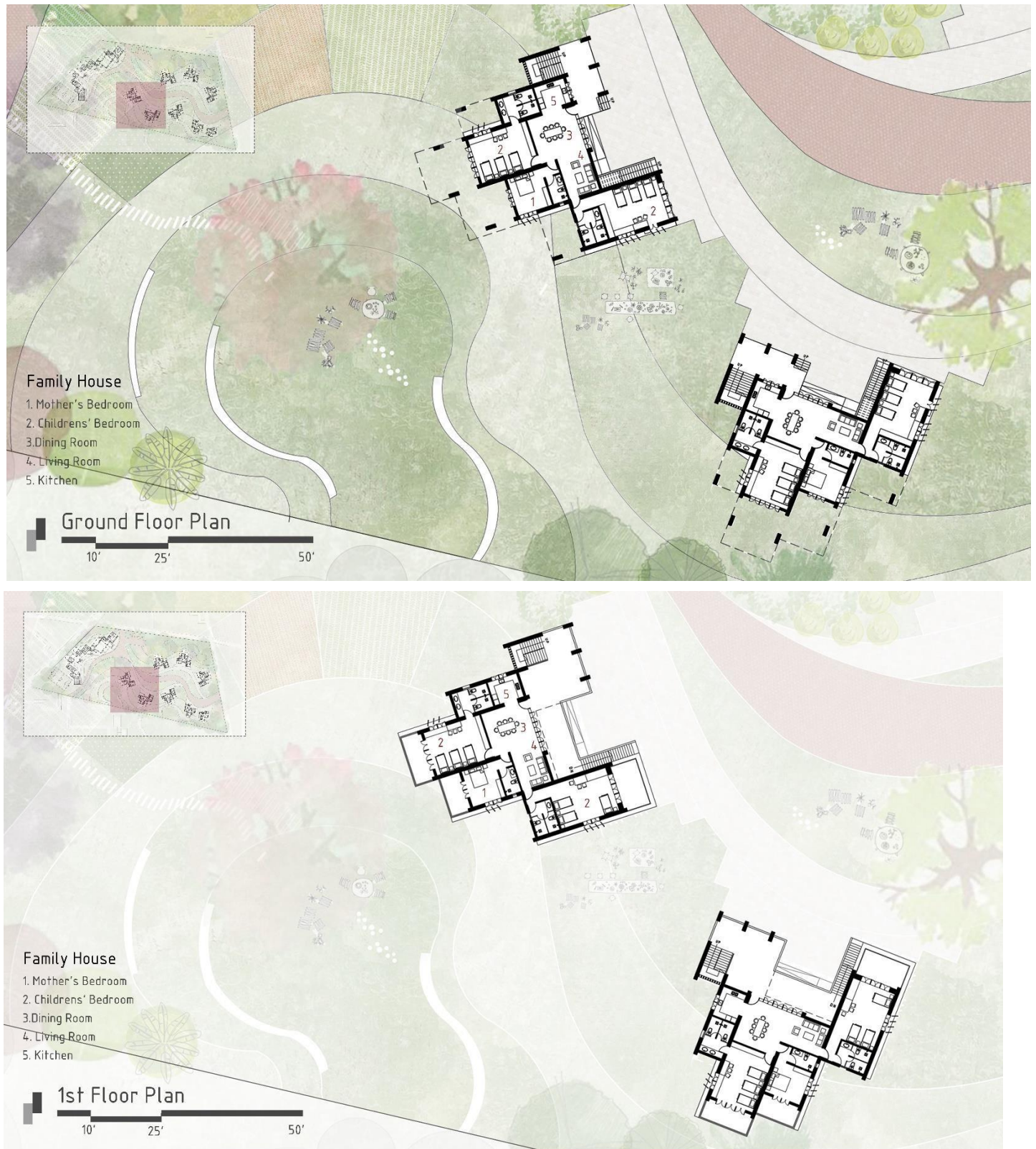


Figure 6.9: Family House Floor Plans (Source: Author)



Figure 6.10: Directors' Residence and community house Floor Plans (Source: Author)

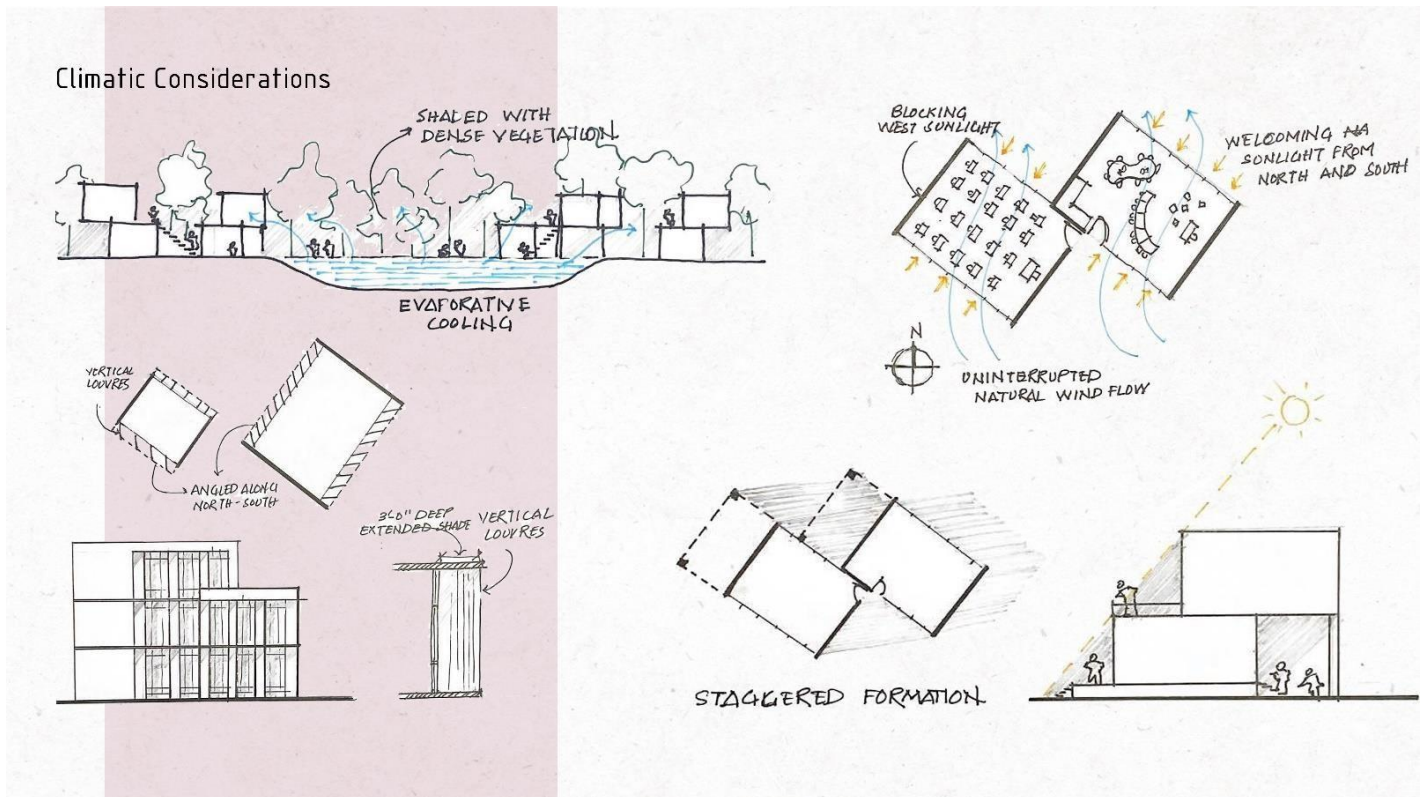


Figure 6.11: Climatic Considerations (Source: Author)



Figure 6.12: Landscape (Source: Author)



Figure 6.13: Sections (Source: Author)



Figure 6.14: Elevations (Source: Author)

6.1 Perspectives







Figure 6.15: Perspective Renders (Source: Author)

REFERENCE

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