Bangladesh Telecommunications Company Limited Headquarters

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
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Declaration

It is hereby declared that

1. The thesis submitted is my/our 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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Approval

The project titled **"Bangladesh Telecommunication Company Limited Headquarters"** submitted by Zannatun Naeem Sowda, ID 18308015 of Summer, 2023 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Bachelor of Architecture on September 9, 2023.

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Abstract

BTCL HQ is currently situated in Eskaton Garden, Dhaka, Bangladesh. The new headquarters of BTCL is planned to be built in Tejgaon, Dhaka, Bangladesh.

Tejgaon, a significant industrial center in Dhaka, is losing its distinctive features as a result of the development's haphazard and unplanned nature. As a result of increased urbanization, the region must continually adapt to meet rising demand and become a mixed-use center. Over the past two decades, heavy industries have changed and commercial activity has significantly grown. The majority of the industrially used plots are currently being converted to commercial ones.

Acknowledgment

First and foremost, praises and thanks to almighty Allah for blessing me with the ability and capabilities to complete this project. I would like to express my sincere gratitude to the following individuals and organizations for their invaluable support and contributions to the completion of this architecture thesis:

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Zannatun Naeem Sowda
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CHAPTER 1:INTRODUCTION

1.1 Introduction of the Project

The electromagnetic long-distance transfer of information is known as telecommunication. Consumers may connect with one another via phone, video, audio, and text thanks to the telecommunications industry, which is a component of the information sector. Businesses in the telecom industry may handle or manage services, equipment, or both. The items that customers use to communicate, such as phones, modems, infrastructure for wireless and landlines, and networking tools, are categorized as telecom equipment. The data that users converse or receive using their devices is transmitted and delivered by telecom service providers. They serve as the conduit for telecommunications. To access telecom services, consumers and businesses typically form an agreement with service providers and pay a regular charge.

Bangladesh uses a variety of media for communication, including the telephone, mobile phones, TV broadcasts, radio, and the internet. There are now 6 mobile service providers in Bangladesh. The biggest telco in Bangladesh is called BTCL, or Bangladesh Telecommunications Company Limited. After Bangladesh gained its independence in 1971, the business was initially established as the Bangladesh Telegraph & Telephone Board (BTTB). The BTTB changed its name to BTCL on July 1st, 2008, and went public. In metropolitan regions of Bangladesh, BTCL offers landline telephone services, including international and long-distance calling as well as internet services.

BTCL HQ is currently situated in Eskaton Garden, Dhaka, Bangladesh. The new headquarters of BTCL is planned to be built in Tejgaon, Dhaka, Bangladesh.

Tejgaon, a significant industrial center in Dhaka, is losing its distinctive features as a result of the development's haphazard and unplanned nature. As a result of increased urbanization, the region must continually adapt to meet rising demand and become a mixed-use center. Over the past two decades, heavy industries have changed and commercial activity has significantly grown. The majority of the industrially used plots are currently being converted to commercial ones.

The total property area of Bangladesh Telecommunications Company Limited BTCL is on 240555.615 or 5.6 acres of land. From the owned land it has been proposed to build the project on an area of 76032 square feet or 2 acres of land. The client of this project is BTCL themselves. It is planned to be a thirteen-storey building conducting different types of official and entertaining purposes. The total built area of the project is 211003 square feet. Among the proposed programs, there were administration facilities, customer service facilities, training and meeting facilities, and recreational facilities for the people working there and the common public.

1.2 Aim and Objectives of the Project

The project's goals are to establish an inspirational architectural monument at the national level and to announce telecommunication's presence on the national stage.

The objectives are-

- Designing an environmentally friendly, energy-efficient building
- Maximizing work productivity by ensuring job satisfaction through spaces
- Integrating urban fabric's essence and give back to the site surrounding community

1.3 Project Summary

Project Name	Bangladesh Telecommunications Company Limited Headquarters
Project Type	Office Building Complex
Client	Bangladesh Telecommunications Company Limited
Industry	Telecommunications
Project Fund Agency	Bangladesh Telecommunications Company Limited
Implementer	Bangladesh Telecommunications Company Limited
Location	Tejgaon, Dhaka, Bangladesh
Total Site Area	2,40,555 SFT (5.52 Acres)
Total Built Area	2,65,000 SFT

CHAPTER 2: LITERATURE REVIEW

2.1 Telecommunications

2.1.1 Defining Telecommunications:

The term "telecommunication" describes the process of transmitting and exchanging information, data, or messages across a distance using different types of technology, such as phone lines, radio waves, or the Internet (Tadashi O. and Flaviu C, 1998). The process of encoding, transmitting, and decoding information so that the intended recipient may receive it and understand it is known as telecommunication. Communication between persons or organizations that are physically distant is the aim of telecommunication, allowing them to share information and maintain connections (Tadashi O. and Flaviu C, 1998). New breakthroughs and advances in telecommunications technology are continually being made.

2.1.2 Key Topics in Telecommunication:

Telecommunications is a vast field that encompasses a wide range of topics. Below are some key themes and research findings in the field of telecommunications:

Mobile technology: Communications have been transformed by mobile technology, which allows users to connect at any time, from anywhere. The effects of mobile technology on interpersonal relationships, workplace procedures, and information exchange have been researched. For instance, research indicated that although mobile technology has lowered the barriers between work and personal life, it has also increased the frequency and speed of contact among coworkers.

Broadband adoption: Due to its ability to provide access to information and new markets, broadband adoption has emerged as a critical measure of a nation's economic success. The elements that affect the adoption of broadband, such as income, education, and infrastructure accessibility, have been researched. For instance, research indicated that

the high cost of broadband and the lack of digital literacy prevent low-income households from adopting it.

Cybersecurity: Security is now a major worry as more and more communication takes place online. The efficiency of various cybersecurity measures has been researched, as well as the vulnerabilities of different telecommunications networks. One research, for instance, discovered that using multi-factor authentication can dramatically lower the risk of cyberattacks.

Telehealth: Telehealth, or the use of telecommunications technology to offer healthcare services, has also been made possible by telecommunications. The efficiency of telehealth in enhancing health outcomes and lowering expenses has been researched. For individuals with chronic illnesses, one research indicated that telemedicine can considerably lower hospital readmissions.

Regulation: Governments have a significant role in creating regulations and standards for the industry, which is frequently subject to strict regulation. The effects of various regulatory regimes on telecommunications infrastructure investment, competitiveness, and innovation have been researched. For instance, research discovered that more accommodating legislative regimes can promote investment in telecom infrastructure for the future.

2.1.3 Developers of telecommunication over time

There have been a lot of innovators and inventors who have contributed to the development of communications technology over the years. Here are some notable telecommunications innovators throughout history:

Samuel Morse: Samuel Morse created the electric telegraph at the beginning of the 19th century, enabling people to exchange messages using Morse code across great distances.

Alexander Graham Bell: The first practical telephone, created by Alexander Graham Bell in 1876, revolutionized communication by allowing people to converse in real time when separated by great distances.

Guglielmo Marconi: Guglielmo Marconi created the first functional wireless telegraph system in the late 19th century. This technology used radio waves instead of physical cables to send messages across great distances.

Claude Shannon: The mathematical theory of communication, created by Claude Shannon in the middle of the 20th century, offered a framework for comprehending the basic tenets of information transfer.

Tim Berners-Lee: Tim Berners-Lee created the World Wide Web in the latter half of the 20th century, allowing users of web browsers to access and exchange information via the Internet.

Steve Jobs: Steve Jobs was a significant contributor to the creation of the personal computer and mobile devices in the late 20th century, which revolutionized how people interact and access information.

Mark Zuckerberg: Mark Zuckerberg created Facebook in the twenty-first century, and it has since grown to be one of the biggest social media platforms on the planet, bringing billions of people together.

These are just a few of the numerous telecommunications innovators throughout history. Each of these pioneers helped to shape the development of communications technology and laid the path for upcoming developments.

2.1.4 Modes of Telecommunication

Telegraph: Early in the 19th century, the electric telegraph was developed, enabling long-distance Morse code communication. The telegraph transformed communication and made it possible for individuals to communicate across continents.

Telephone: Alexander Graham Bell created the telephone in 1876, enabling people to communicate in real time while separated by great distances. In many regions of the world, the telephone swiftly replaced the telegraph as the main form of communication.

Radio: The invention of radio technology at the turn of the 20th century made it possible for people to communicate wirelessly across great distances. Both World Wars I and II relied heavily on radio communication.

Television: The development of television technology in the middle of the 20th century made it possible for people to send and receive audio and visual messages over great distances. The main form of public communication and entertainment is now television.

Internet: The development of the internet in the latter half of the 20th century changed communication by enabling global access to and sharing of information via computers and other electronic devices.

2.1.5 Significance of Telecommunication:

Telecommunications plays a significant role in modern society and has had a profound impact on the way people communicate, work, and live. Here are some of the key significance of telecommunications:

Improved communication: Long-distance communication has become simpler because of telecommunications, enabling people to remain in contact with friends and family, work together with coworkers, and do business.

Increased connectivity: Telecommunications have facilitated worldwide trade, cooperation, and cultural exchange by connecting individuals and organizations.

Enhanced mobility: People may now access information, operate remotely, and maintain connections with others thanks to the development of mobile telecommunications technology.

Improved healthcare: Telemedicine and telehealth, which enable patients to get medical treatment and counseling without the need for in-person visits, are examples of remote services that healthcare practitioners may now offer thanks to telecommunications.

Economic growth: Since it has made it possible for companies to connect with clients and suppliers all over the world, telecommunications have significantly contributed to economic growth by fostering trade and investment.

Innovation: From entertainment and education to transportation and industry, telecommunications have sparked innovation across a wide variety of industries.

Social impact: The ability to acquire information and engage in social and political activities, as well as the promotion of social justice and female empowerment, has had a significant influence on society.

As new technologies and applications are created, the effect of telecommunications is anticipated to increase and further alter how people live and work.

2.2 Headquarters

2.2.1 Defining Office Headquarters

A firm or organization's primary administrative hub is its office headquarters ((Merriem-Webster, 2023). The highest level of management and decision-making often occurs here, as well as the administration of crucial corporate functions including finance, marketing, and human resources. The corporate headquarters frequently acts as the main venue for corporate gatherings, meetings, and training sessions. It may also contain crucial business divisions like R&D, legal, and IT. Depending on the size of the firm or organization, the size and breadth of an office headquarters can vary; larger businesses sometimes have more broad offices that encompass many buildings and facilities.

2.2.2 Telecommunication Headquarters

The primary administrative hub of a communications business or organization is called a telecommunication headquarters. It serves as the focal point for critical business operations, including network operations, engineering, sales, marketing, and customer support, as well as the highest level of management and decision-making. The corporate headquarters for the telecommunications industry frequently acts as the main venue for corporate events, meetings, and training sessions (Brian B., 2023). It may also contain crucial company divisions like IT, regulatory compliance, and research and development. Larger telecommunications firms sometimes have more broad offices that encompass various buildings and facilities. The size and breadth of a telecoms headquarters might vary depending on the size of the company or organization.

2.2.3 Favorable Office Environment for Employees

Making an inviting workplace is crucial to ensure that workers are at ease, inspired, and effective. Here are some essential components of a productive office setting:

Comfortable and ergonomic workstations: Offering ergonomic workplaces with adjustable seats and desks can assist minimize physical pain and strain, which can reduce output and job satisfaction.

Adequate lighting: Reduced eye strain, increased energy, and improved mood can all be benefits of good lighting. If possible, try to use as much natural light as you can, but if that's not possible, use bright, even artificial lighting.

Temperature control: It might be beneficial to maintain a comfortable temperature range, ideally between 68 and 72 degrees Fahrenheit (20 and 22 degrees Celsius).

Cleanliness: A stress-free environment and a sense of serenity and organization may be fostered by a neat and clean workplace.

Noise control: Reduce distractions and increase focus by giving noise-cancelling headphones or creating a quiet workspace.

Amenities and facilities: The promotion of worker wellbeing and the development of a pleasant workplace culture can be aided by the provision of amenities such a kitchen, break room, or fitness facility.

Flexibility: Offering a better work-life balance and a lower stress level can be accomplished by providing flexible work hours, remote work possibilities, or the freedom to take breaks as required.

Companies can foster a more pleasant and productive workplace culture that promotes the physical and emotional well-being of employees, which will increase employee satisfaction and retention.

CHAPTER 3: SITE APPRAISAL

3.1 Site location and surrounding

Project : Bangladesh Telecommunications Company Limited Headquarters
Site: Tejgaon,Dhaka,Bangladesh
Location Coordinates: 23.7583°N, 90.3917°E
Site Area: 95,800 sq ft (2.20 Acres)

Tejgaon is a thana in Bangladesh's Dhaka District's Division of Dhaka. It is located in the city's center, Dhaka. The thana's boundaries were modified in 2006 to make room for Tejgaon Industrial Area Thana, and again in 2009 to make room for Shere-Bangla Nagar Thana.

Since the prime minister's office is located in Tejgaon, this district of Dhaka is significant. Its northern, eastern, southern, and western boundaries are Mohakhali, Old Airport Road, Moghbazar-Malibagh, and Dhanmondi. It consists of several localities, including Tejgaon Industrial Area, Kawran Bazar, Nakhalpara, Shaheen Bag, Arjat para, East Raja Bazar, West Raja Bazar, Tejturi Bazar and Tejkunipara.

The region has historically served as the city's industrial hub. Tejgaon has a large number of manufacturers and facilities in a variety of sectors, including clothing, food processing, metal working, medicines, etc.

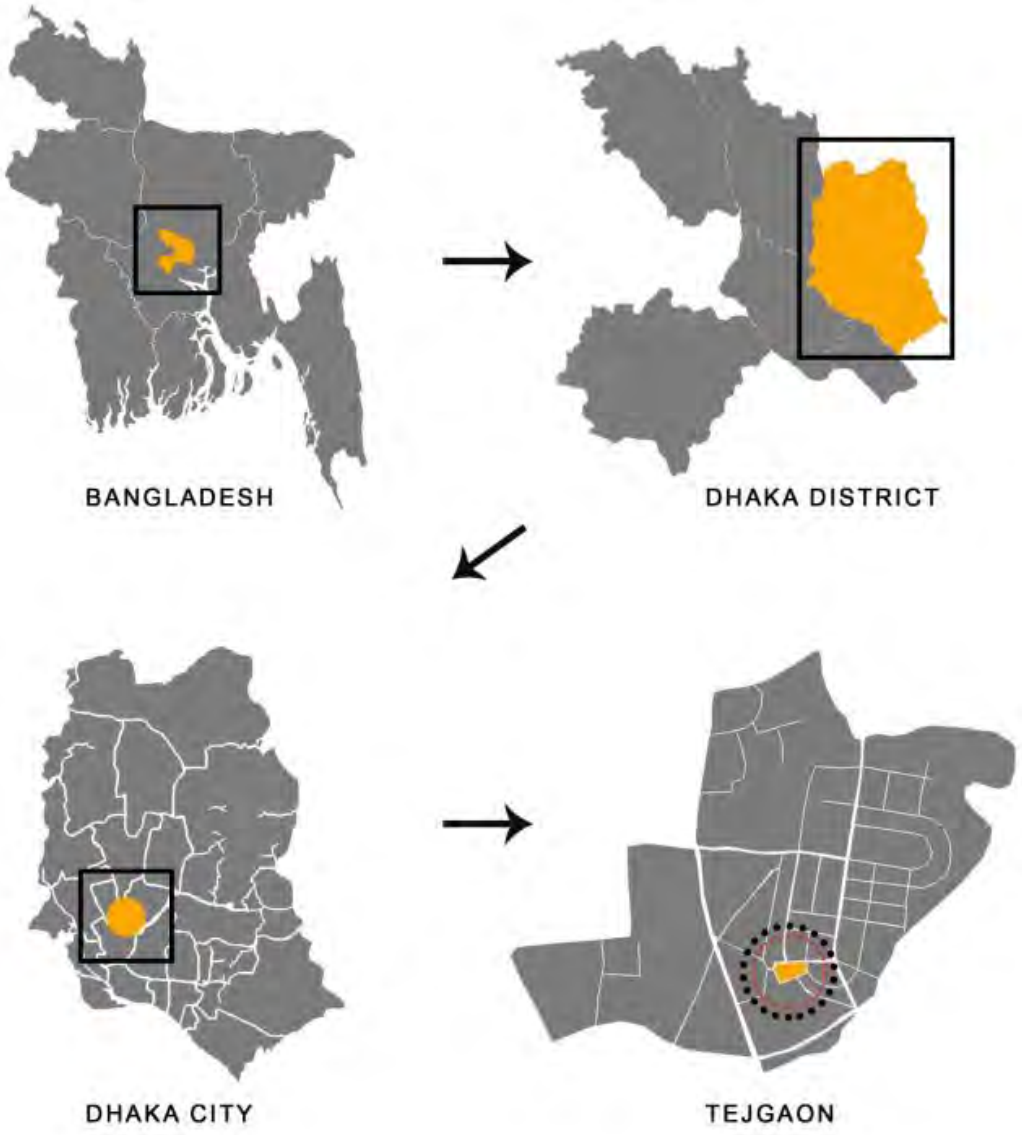


Fig 3.1.1: Zooming into the site

3.2 Solid void relationship of the site surrounding

Fig 3.2.1: Solid-Void Relation Map

3.3 Accessibility and connectivity

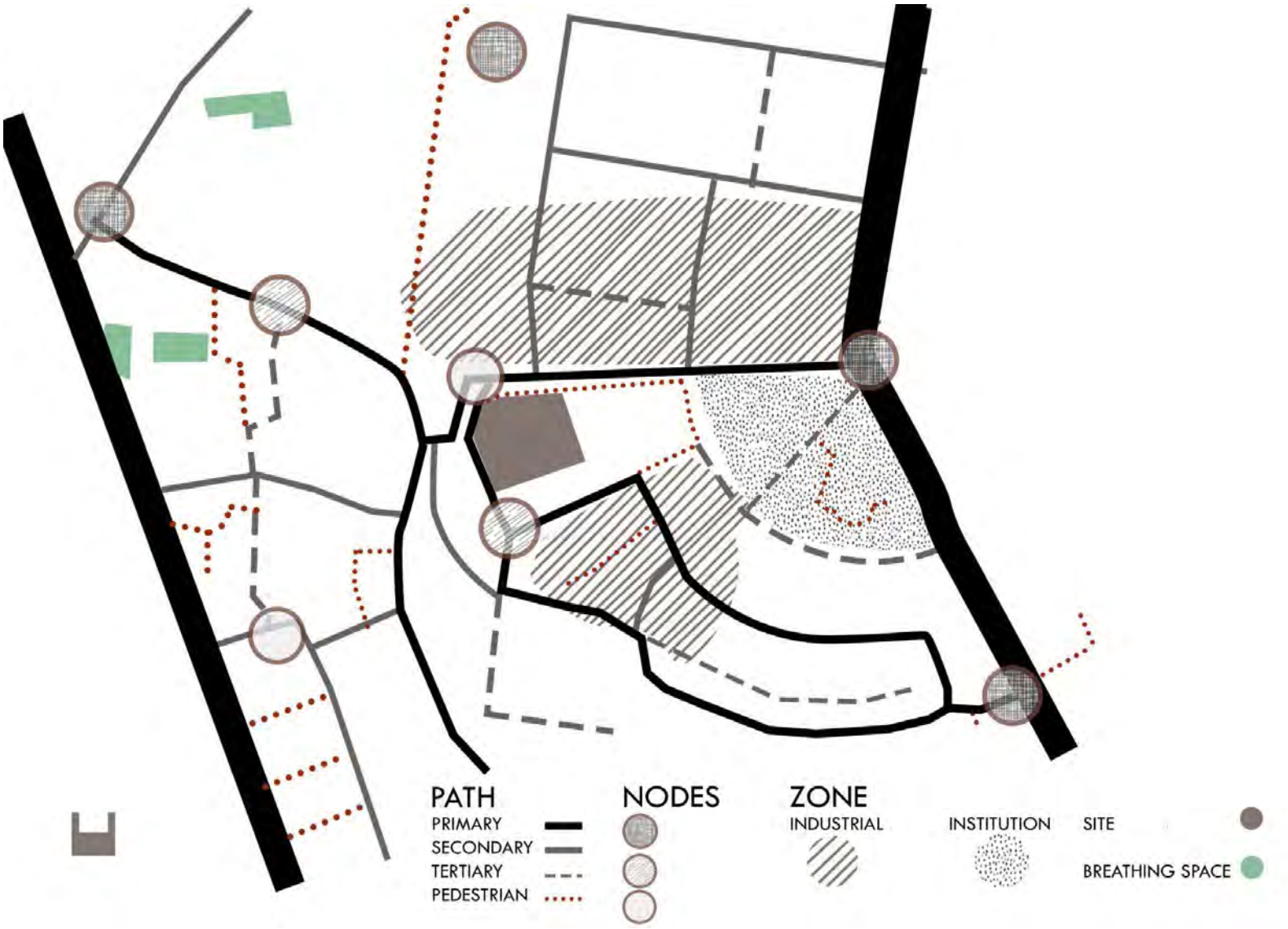


Fig 3.3.1: Site analysis diagram

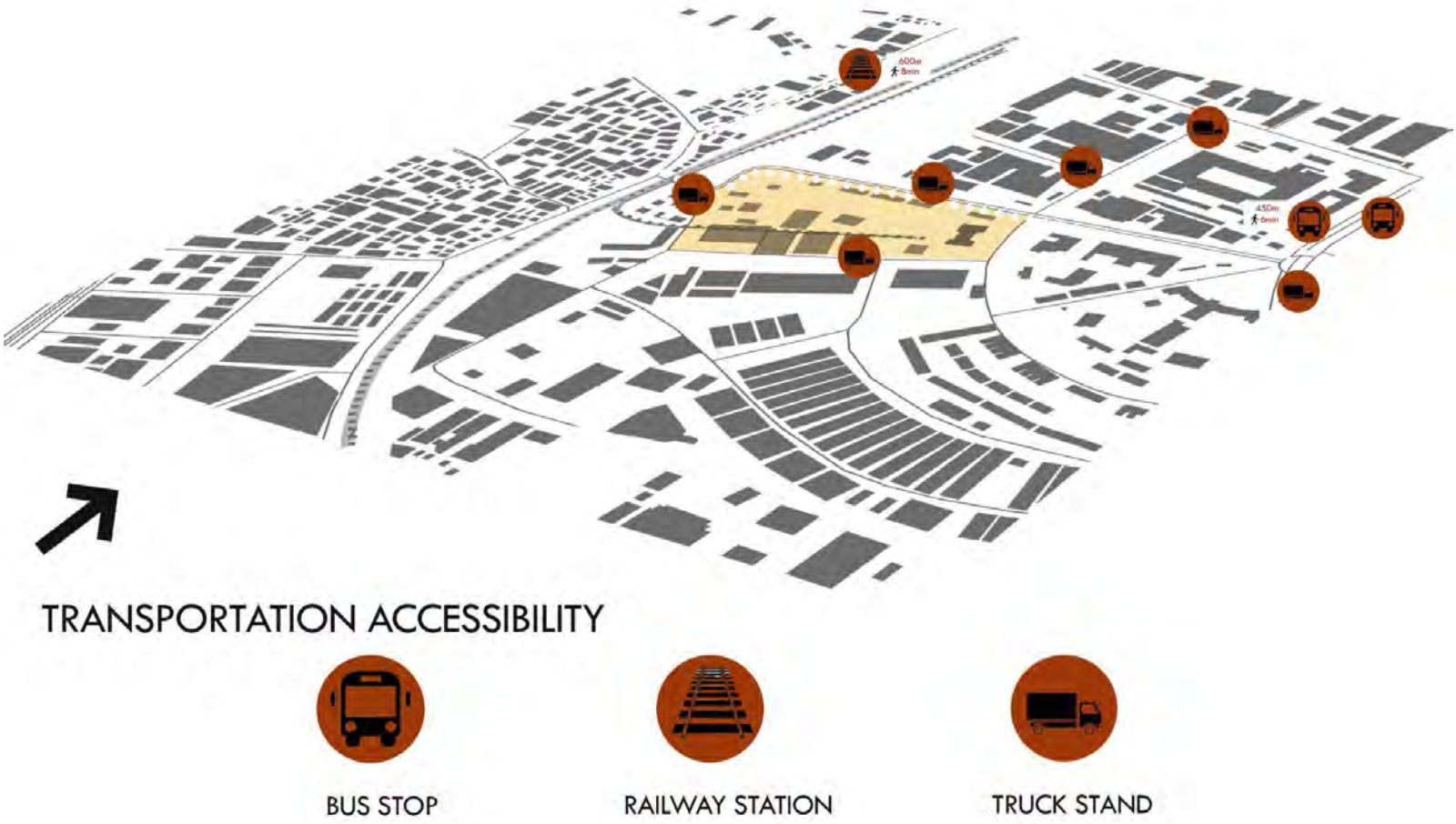


Fig 3.3.2: Vehicular availability

3.4 Ecology of the site surrounding

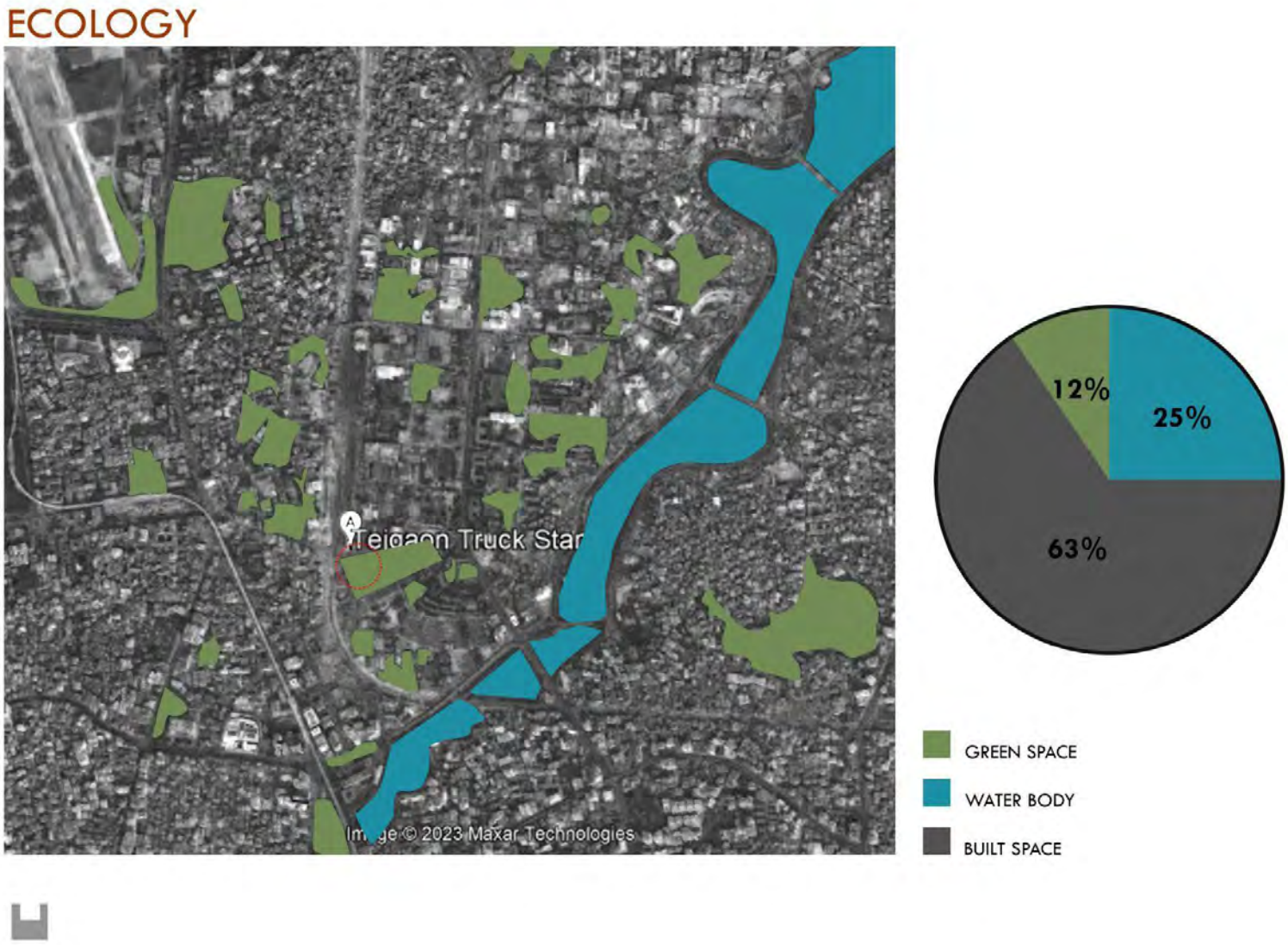


Fig 3.4.1: Ecology

2001

2010

REVIVAL OF WATER BODY

2021

Fig 3.4.2: Ecology

3.5 Land use map

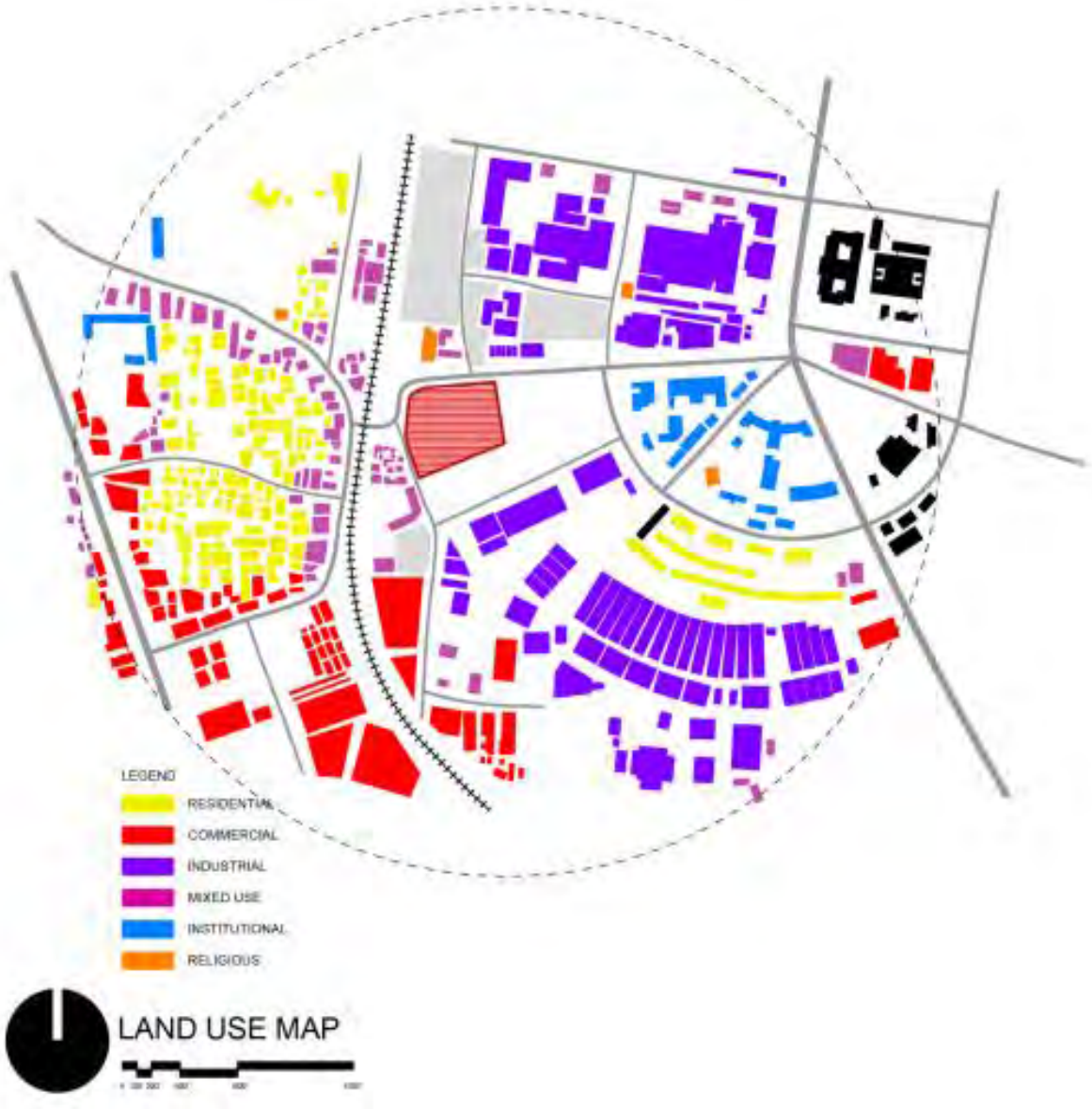


Fig 3.5.1: Land use pattern map

3.6 Site surrounding structure heights

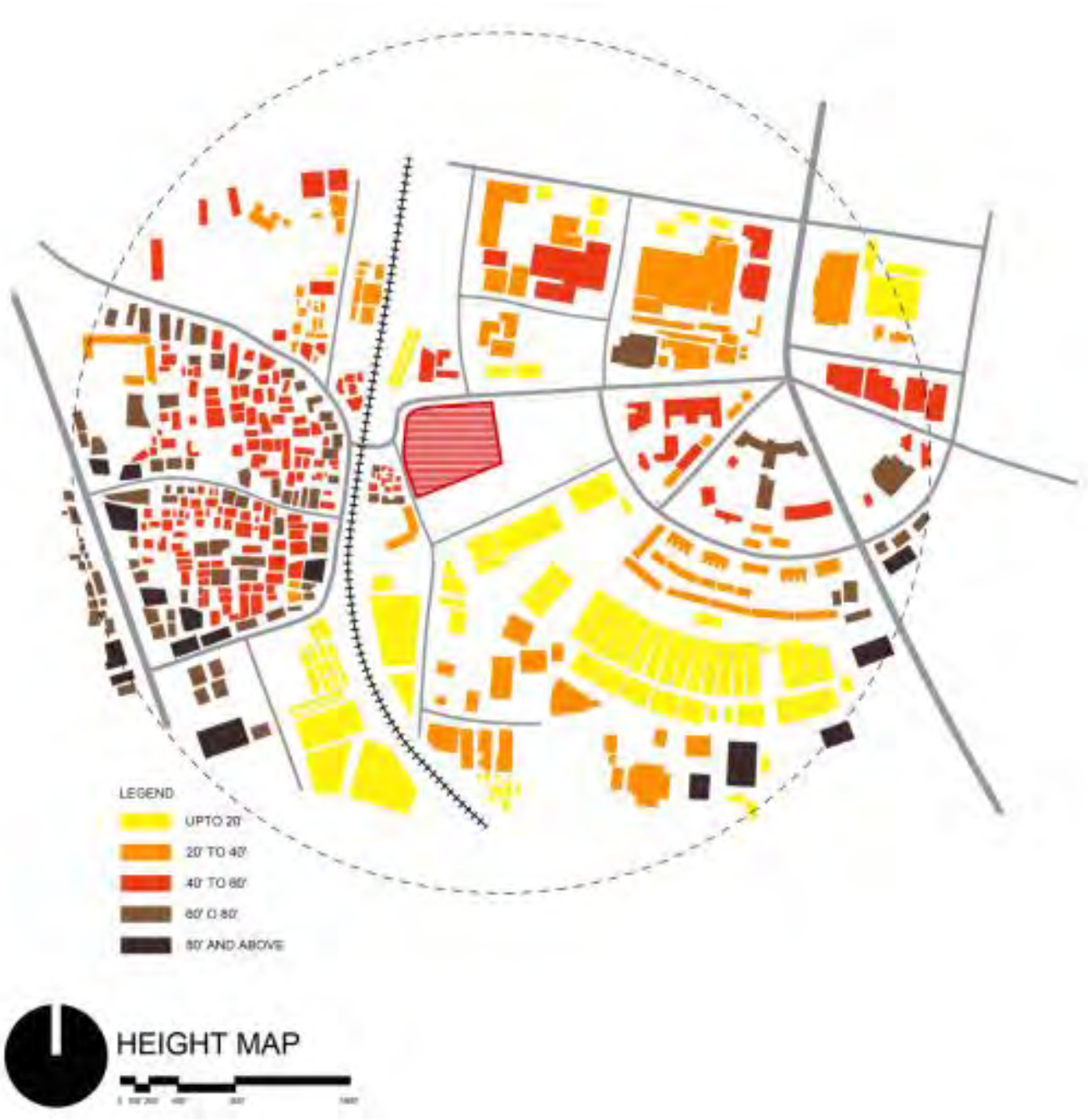


Fig 3.6.1: Surrounding structure height map

Tejgaon, Dhaka, experiences a tropical monsoon climate, also known as a tropical wet and dry climate. This type of climate is characterized by high temperatures and heavy rainfall during the monsoon season, followed by a dry season with cooler temperatures.

The average annual temperature in Tejgaon is around 26-27 degrees Celsius, with temperatures often reaching 30 degrees Celsius or higher during the summer months. The monsoon season in Tejgaon typically starts in June and lasts until September, with the heaviest rainfall occurring in July and August.

During the dry season, which runs from October to May, temperatures are cooler, with average temperatures ranging from 20-25 degrees Celsius. Humidity levels during the monsoon season can be high, making the weather feel hot and sticky.

Overall, Tejgaon experiences a warm and humid climate throughout the year, with a distinct wet season and dry season. It is important to stay hydrated and protect oneself from the sun and rain when visiting or living in this area.

3.7 Solar (Stereographic) diagram

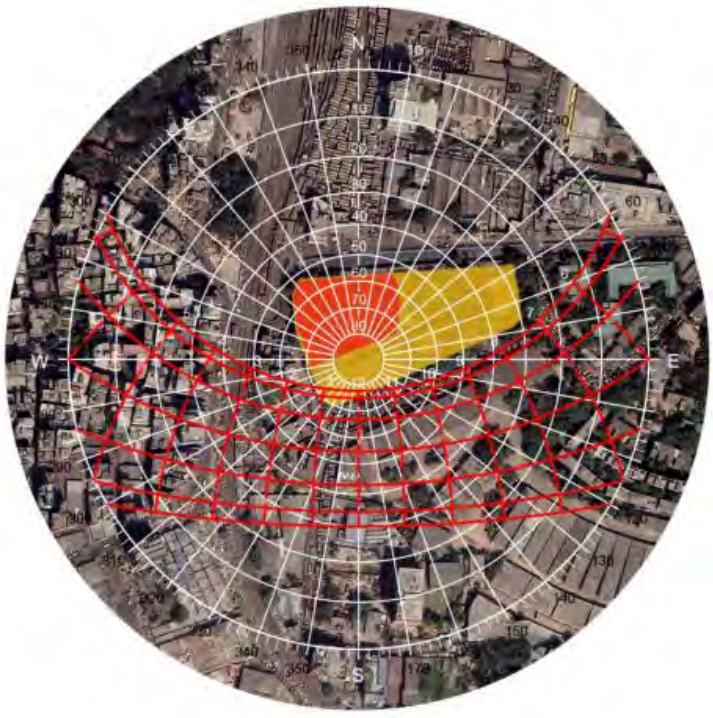


Fig 3.7.1: Solar (stereographic) diagram of the site

The illustration above demonstrates that it's clearly visible that the sun rises at a high altitude during the summer, nearly reaching 90 degrees. The length of the days during the winter is shorter, and corresponds to the required 70 degree sun altitude.

The red line represents the annual sun path, while the horizontal lines holding the circles inside the outer one represent altitude lines. The circular outer ring represents the azimuth angle. The shadow casting and potential spread area are shown in the center by the hatched region.

3.8 Socio-cultural and economic context

Tejgaon, Dhaka is a vibrant neighborhood with a diverse socio-cultural and economic landscape. The area is home to a mix of people from different religious and cultural backgrounds, including Hindus, Muslims, Christians, and Buddhists.

One of the defining characteristics of Tejgaon is its strong economy, driven by a mix of industries, businesses, and commercial activities. The area is home to the Tejgaon Industrial Area, one of the largest industrial zones in Bangladesh, which hosts a range of factories and manufacturing units. The neighborhood also has a number of commercial centers and shopping malls, including the Bashundhara City Mall, which is one of the largest malls in South Asia.

It is also an important educational center, with a number of renowned educational institutions located in the area. These include the Tejgaon College, Dhaka University of Engineering and Technology, and the National Institute of Cardiovascular Diseases.

The neighborhood has a rich cultural heritage, with a number of historical and cultural landmarks located in the area. These include the old Tejgaon airport, which was the first airport in Bangladesh, and the Shaheed Minar, a monument dedicated to the martyrs of the Bengali Language Movement.

3.9 Existing site condition

Fig 3.9.1: Existing site condition map

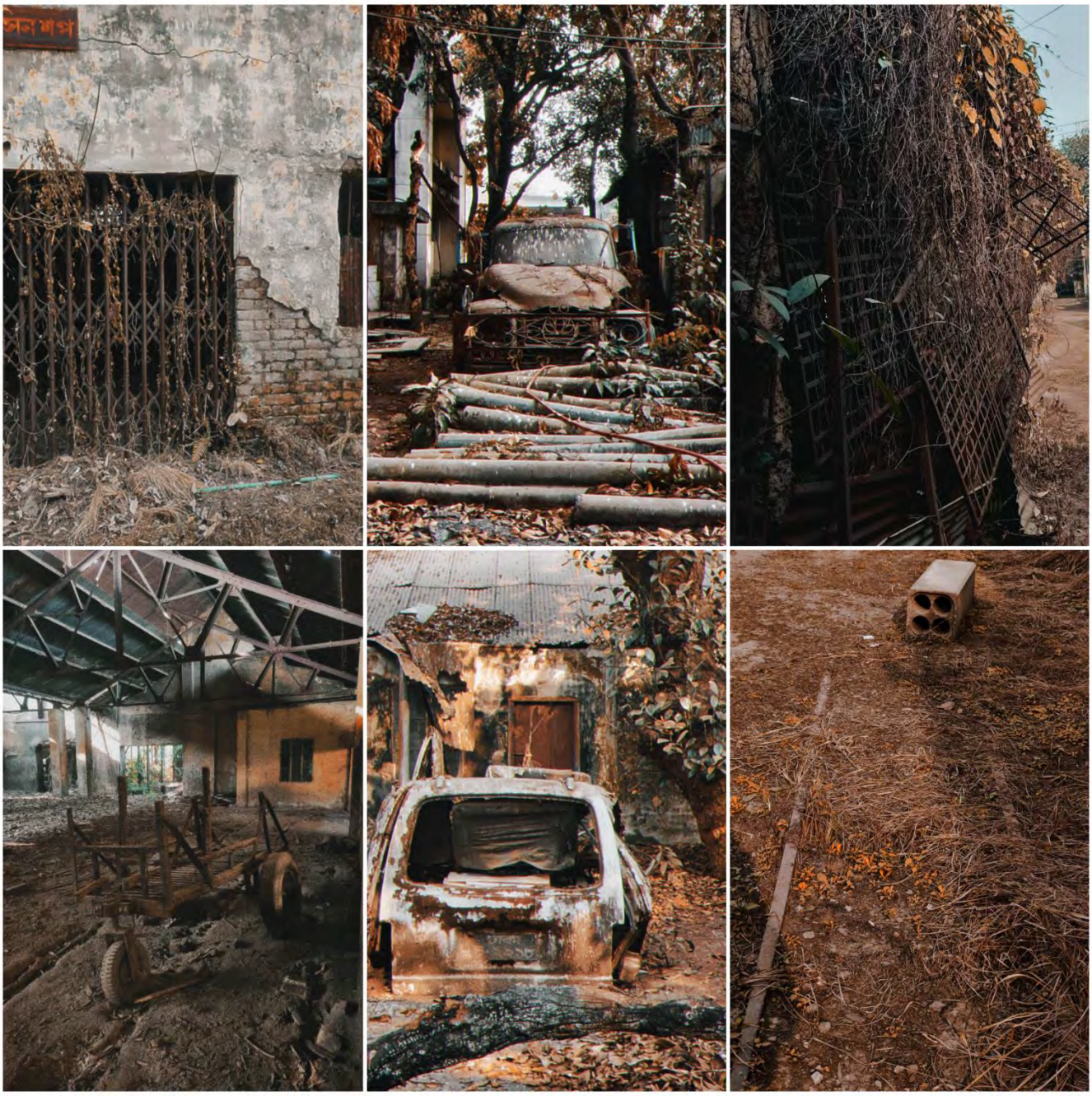


Fig 3.9.2: Existing site condition

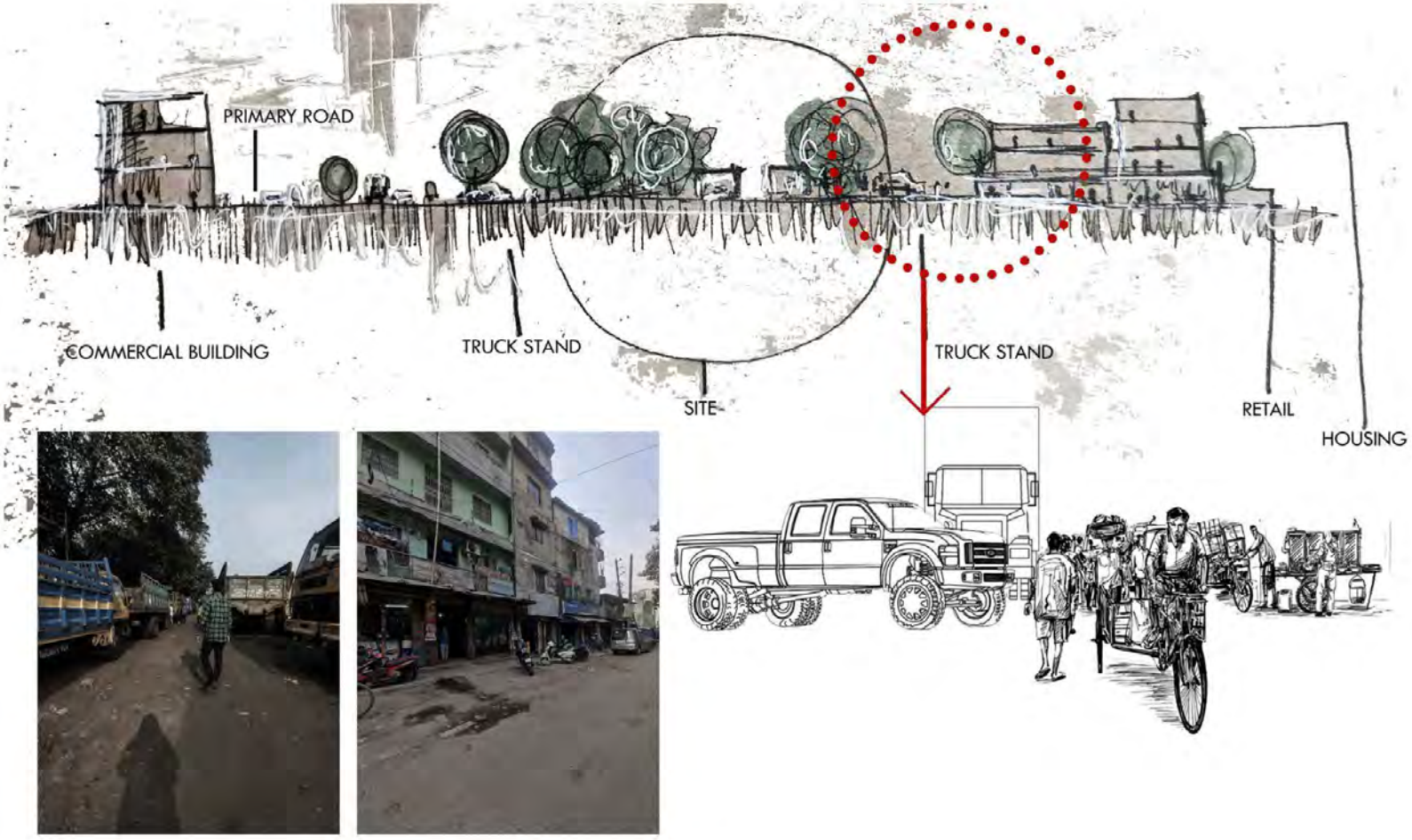


Fig 3.9.3: Conceptual diagram of existing site surrounding

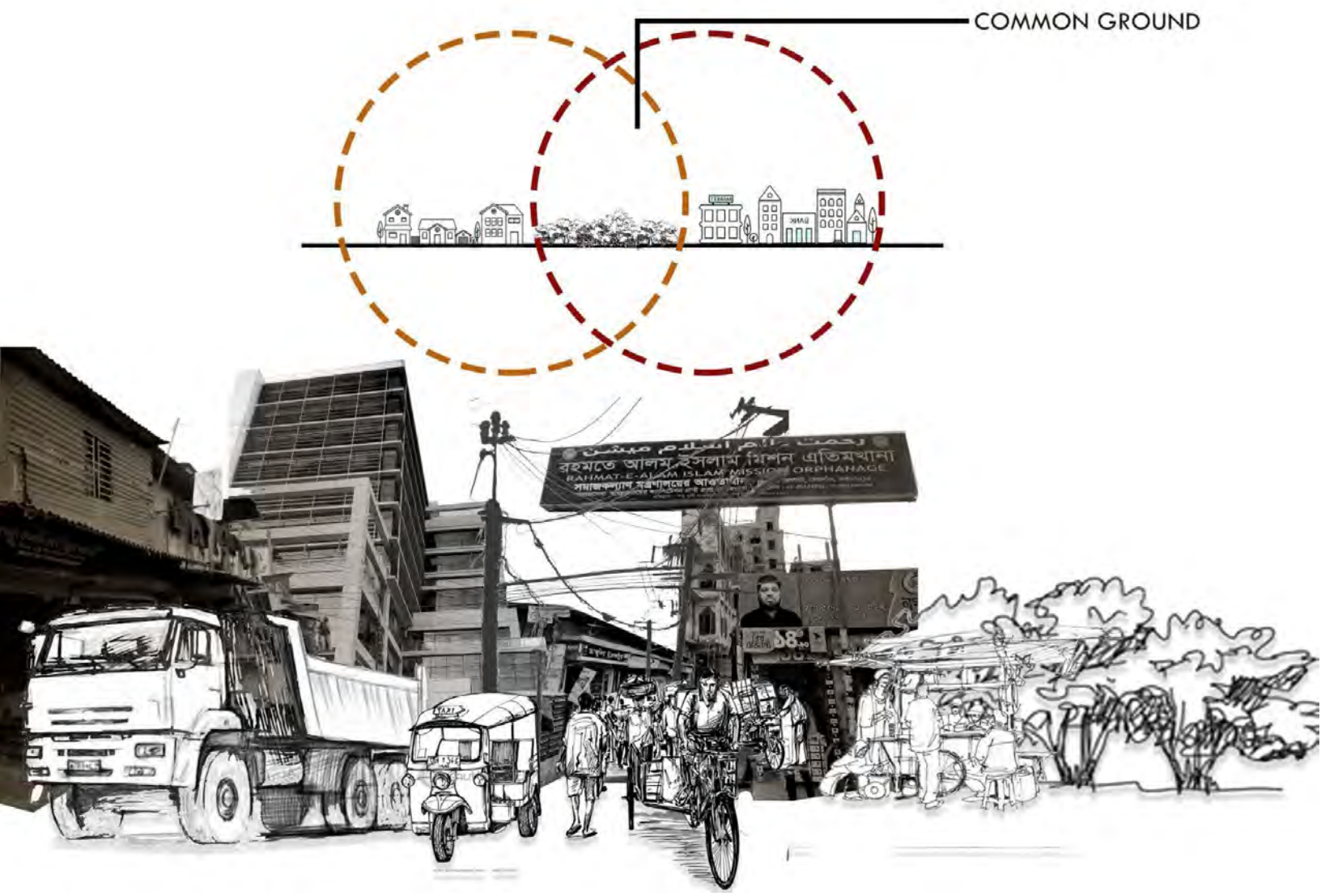


Fig 3.9.4: Conceptual diagram of existing site surrounding

Chapter 4: CASE STUDY APPRAISAL

For the purpose of studying and analyzing the spatial arrangement of programs, function, structure, and other factors, two distinct projects—one national and one international—have been selected. Each and every project is associated with the office complex. Each case study begins with a brief introduction to the project, the designer, and the client.

4.1 CAT Telecom Headquarters

Location: Chaengwattana, Bangkok
Client: CAT Telecom Public Company Limited
Site Area: 18.5 acres (8,05,860sft)
Design Team/ Firm: Plan Architects

The offices, auditorium, and parking are the three main functional parts of the structure, while a central green common area links them all together. The usage of natural light in the area may be maximized by using the green space between buildings to stop sunlight from radiating into the structure. A portion of the shared green area can be utilized for additional outdoor parking. The auditorium is intended to serve as the building's front face and be accessible to the general public. To reduce the size of the building, the gymnasium and fitness center are located on top of the parking structure. A nice working atmosphere is created by the office building's strategic orientation. Conceptually connecting the roofs of the buildings to form a continuous rising roof shape is how the buildings' roofs are built.

Fig 4.1.1: Form & function and structural analysis of CAT Telecom Headquarters (Lv 01 & 06)

Fig 4.1.2: CAT Telecom Headquarters

Fig 4.1.3: CAT Telecom Headquarters

4.2 Grameen House

Location: Bashundhara R/A, Dhaka, Bangladesh
Client: Grameenphone (Telenor)
Site Area: 1.85 acres (80,586 sq ft)
Total Built Area: 4,86,528 sqft
Living Area:Circulation Area= 2,36,913 sq ft: 68,781 sqft
Parking Area : 1,26,583 sqft
Landscaped Area : 43,055 sqft (including Terrace Gardens)
Design Team/ Firm: Vistaraa

The location of Grameenphone's corporate headquarters is nearly rectilinear in form. Two roads run along the south and north sides of the land.

The proposal consists of two complementing office wings that are joined by a central community courtyard with link-bridges, elevators, and staircases. One of the office wings is aligned with the eastern border, the other with the western boundary. Each wing has a corresponding functional program. A formal plaza serves as the site's entry zone, leading to an informal zone of a traditional "courtyard" with a water body symbolizing the presence of "ponds" in traditional settlements. A garden at the south plaza adds the "soul" or spiritual zone, along with the help of building wings, shifting axis, internalized landscape, open stairways, views, and vistas. While allowing uninterrupted use of the sub-zero levels for parking by corporate employees' vehicles, both the raised and the sunken plaza are reserved for pedestrian traffic made up of both Grameenphone employees and visitors.

Fig 4.2.1: Form and functional analysis of Grameenphone House (Lv 01)

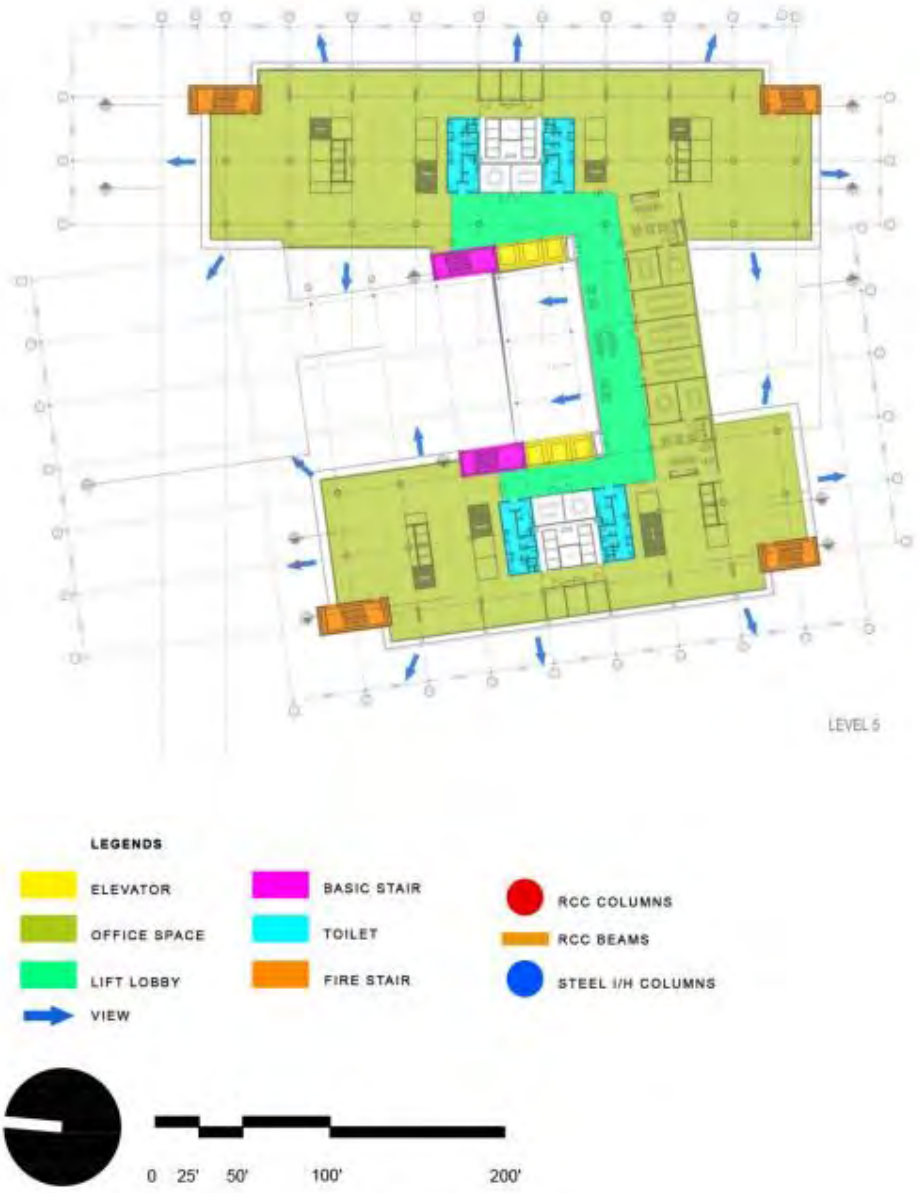


Fig 4.2.2: Form and functional analysis of Grameenphone House (Lv 05)

Fig 4.2.3: Structural analysis of Grameenphone House (Lv 05)

The findings from the study show that the level 1 is mostly utilized for more public and circulation functions, while the level 5 is primarily used as office space for employees to

work in. There are two main vertical circulation cores, each of which serves a section of the building's east and west wings as well as the central space. Four emergency/fire entrances are located at the building's corners. At the connecting point of the two East and West blocks, the majority of the structural system is based on a square grid of RCC columns and a few components of steel column construction.

Fig.4.2.4: Grameenphone House

Chapter 5: PROGRAM APPRAISAL

An extensive description of the project's programs is provided in the program appraisal. The client, BTCL, provided the fundamental programs, which were then examined and assessed to meet their size and space needs as well as those of other required programs or spaces to service the basic programs.
Sizes of rooms and spaces are given in square feet (sqft) based on study results from Time Savers Standard, Neufert, and case studies.

Program list for BTCL Headquarter

	Functional space	Number of Units	Number of Users	Area per Unit (in sft)	Total Area (in sft)
A	**Administrative facilities**				**88200**
A.1	Managing Director's Office				
1	Managing Director's Room	1	1	500	500
2	Private Secretary	1	1	200	200
3	Assistant Secretary	1	1	150	150
4	Lobby/Lounge/Waiting	1		250	250
5	Toilet	1		100	100
6	Pantry	1		100	100
7	Storage	1		100	100
				Subtotal	1400
A.2	Board of Director's Office				
1	Board of Directors	9	9	350	3150
2	PA to Director	9	9	100	900
3	Conference Room	1		1000	1000
4	Lobby/Lounge/Waiting	1		500	500
5	Toilet	1		300	300
6	Pantry	1		100	100
7	Storage	1		100	100
8	Restroom/Lounge	1		200	200
				Subtotal	6250
A.3	Department of Administration & HR				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	8950
A.4	Department of System Operation				
1	General Manager (GM)	1		300	300

2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

A.5	**Dept. of Planning & Implementation**				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

A.6	**Department of Finance & Accounting**				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

A.7	**Department of Sales & Distribution**				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800

4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

A.8	**Department of Procurement**				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

A.9	**Department of IT & Billing**				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

A.9	**Department of Marketing & VAS**				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500

6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

A.10	**Department of 3G/4G Project**				
1	General Manager (GM)	1		300	300
2	Deputy General Manager (DGM)	3		250	750
3	Manager	4		200	800
4	Deputy Manager (DM)	8		150	1200
5	Assistant Manager (AM)	15		100	1500
6	Senior Executive (SE)	20		80	1600
7	Junior Executive (JE)	30		50	1500
8	Meeting room	1		600	600
9	Toilet	1		300	300
10	Pantry	1		100	100
11	Storage	1		100	100
12	Restroom/Lounge	1		200	200
				Subtotal	**8950**

B	**Customer Service Facilities**	**6550**

B.1	**Customer Care**				
1	Counter	20		30	600
2	Waiting Lounge	50		15	750
3	Storage	1		100	100
4	Toilet	1		500	500
5	Restroom/Lounge	1		300	300
6	Pantry	1		100	100
				Subtotal	**2350**

B.2	**Call Centre**				
1	Work Station	100		30	3000
2	Storage	1		100	100
3	Toilet	1		500	500
4	Restroom/Lounge	1		500	500
5	Pantry	1		100	100
				Subtotal	**4200**

C	**Training & Meeting Facilities**	**11900**

C.1	**Auditorium**				
1	Seating Area	300		15	4500

2	Lobby/Lounge	1		500	500
3	Toilet	1		1000	1000
4	Storage	1		200	200
				Subtotal	**6200**

C.2	**Multipurpose Hall**				
1	Hall	1		4000	4000
2	Lobby/Lounge	1		500	500
3	Toilet	1		1000	1000
4	Storage	1		200	200
				Subtotal	**5700**

D	**Recreational & Anciliary Facilities**	**19360**

D.1	**Health Club & Indoor Sports**				
1	Gym	1		2000	2000
2	Table Tennis	1		500	500
3	Pool/Snooker	1		500	500
4	Squash	1		500	500
5	Badmintion	1		1000	1000
6	Swimming Pool	1		1500	1500
7	Changing Room, Shower & Locker	1		500	500
8	Toilet	1		500	500
9	Storage	2		100	200
				Subtotal	**7200**

D.2	**Restaurant**				
1	Seating Space	300		15	4500
2	Kitchen			0.3	1350
3	Toilet & Handwash	1		1000	1000
4	Storage	1		350	350
				Subtotal	**7200**

D.3	**Library & Study**				
1	Study Space	1		800	800
2	Shelf Space	1		500	500
3	Librarian Office	1		100	100
4	Storage	1		100	100
				Subtotal	**1500**

D.4	**Café**				
1	Café	2		600	1200
				Subtotal	**1200**

D.5	**Day Care**				
1	Day Care Centre	1		1000	1000
2	Storage	1		100	100

3	Toilet	1		200	200
				Subtotal	**1300**

D.6	**Prayer Space**				
1	Hall	70		8	560
2	Ablution Space	1		200	200
3	Toilet	1		200	200
				Subtotal	**960**

E	**Security & Maintenance Facilities**	**5800**

E.1	**Security & Control**				
1	WorkStation Room	1		500	500
2	Changing Room	1		200	200
3	Toilet	1		100	100
4	Storage	1		100	100
5	Pantry	1		100	100
				Subtotal	**1000**

E.2	**Electro-Mechanical Services**				
1	Fire Protection Equipment Room	1		500	500
2	Service & Maintenance Room	1		500	500
3	Generator Room	1		2000	2000
4	Sub-Station (Power) Room	1		1500	1500
5	Pump Room	1		300	300
				Subtotal	**4800**

Total	**131810**

E.3	**Accomodation**	**Subtotal**	**45000**

E.2	**Parking Facilities**				**30500**
1	Car/Covered Van	200		128	25600
2	Motorbike	100		24	2400
3	Bicycle	100		20	2000
4	Driver's Lounge	1		500	500
				Subtotal	**30500**

Gross Total	**207310**

Circulation	30%	62193

Net Total	**269503**

CHAPTER 6: DESIGN CONSIDERATIONS

The BTCL Headquarter project can be condensed down to 3 major design considerations after taking into account all the previous chapters of the Literature Review, Site Appraisal, Case Studies, Program Appraisal, as well as the verbal demands of the client, BTCL, and my personal development. These considerations would help guide the whole design process from top to bottom and inside-out in terms of its physical stature to the spatial organization and connectivity between spaces.

The following design factors are taken into account:

- Iconic landmark: To increase the company's perceived worth and highlight its significant physical presence in the national and international industry.

- Sustainable structure: Buildings with minimal energy usage and modern, cutting-edge technologies that can last a lengthy lifespan.

- An efficient and interactive workplace improve the business on a bigger scale, an interactive and efficient workspace is needed to boost employee productivity and pleasure.

CHAPTER 7: DESIGN SUGGESTIONS

The design has been done by keeping the future in mind which will adapt to the changes and needs of the future of the whole neighborhood.

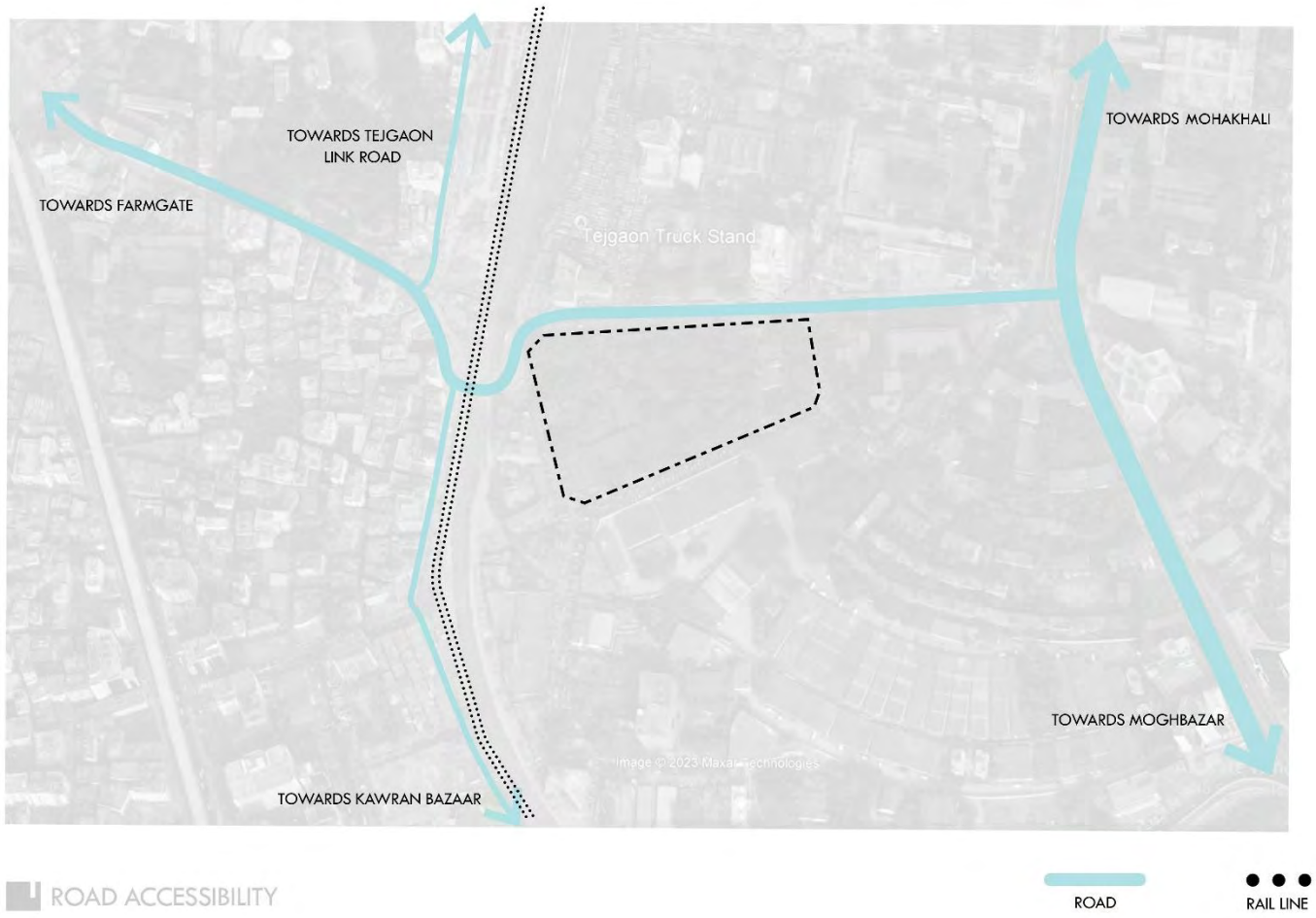


Fig 7.1: Road accessibility map

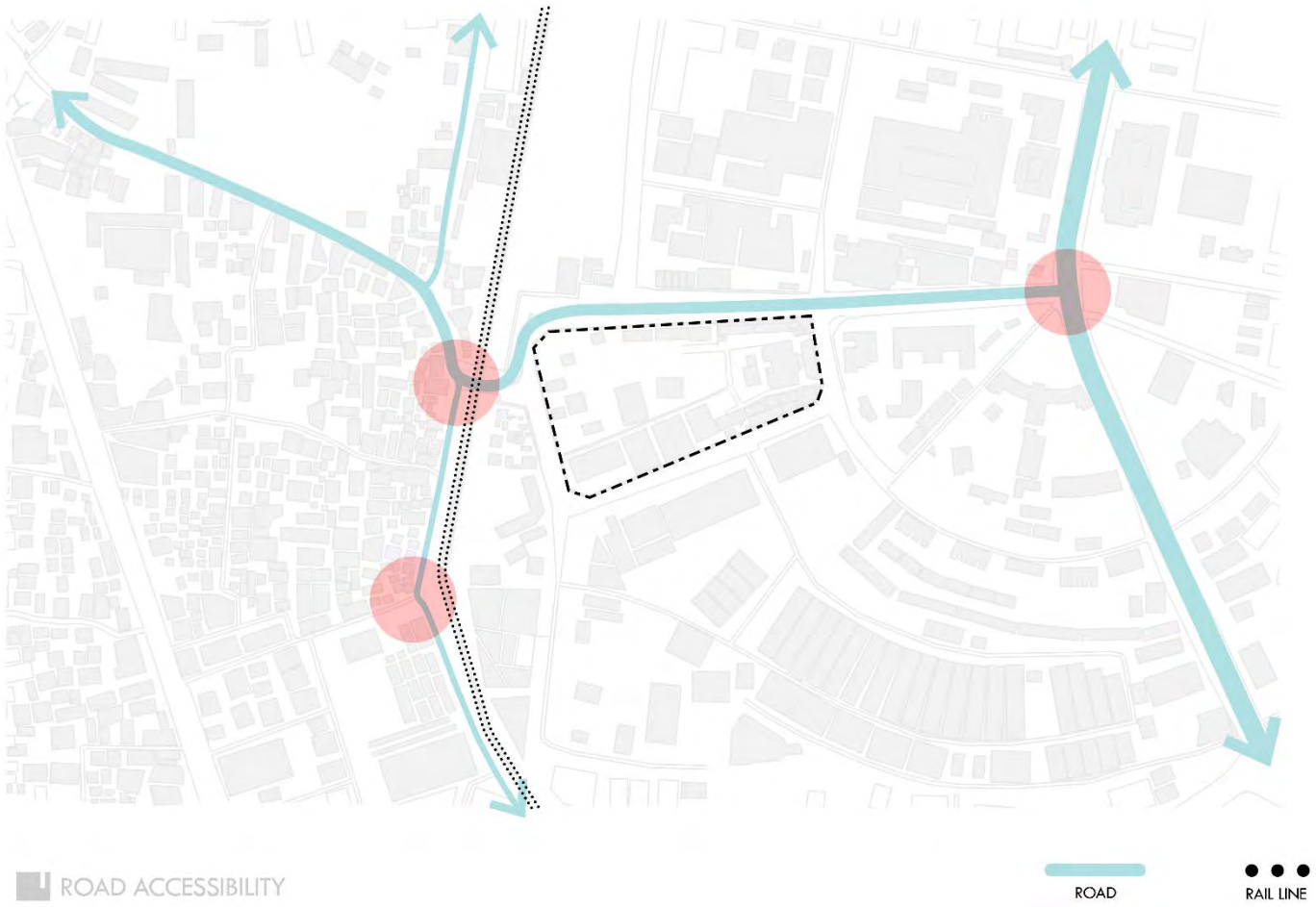


Fig 7.2: Road accessibility map (with important nodes)

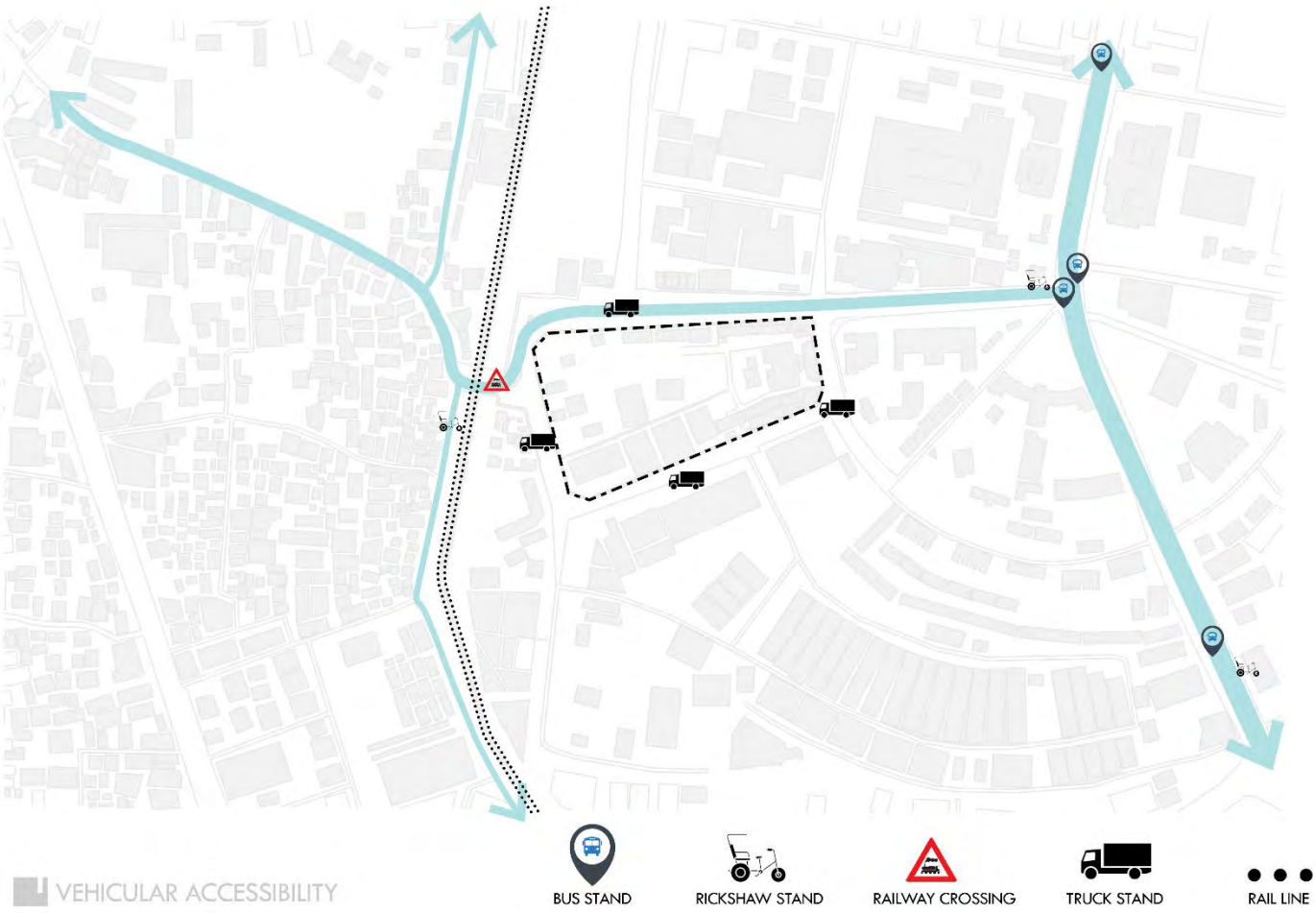


Fig 7.3: Vehicular accessibility map

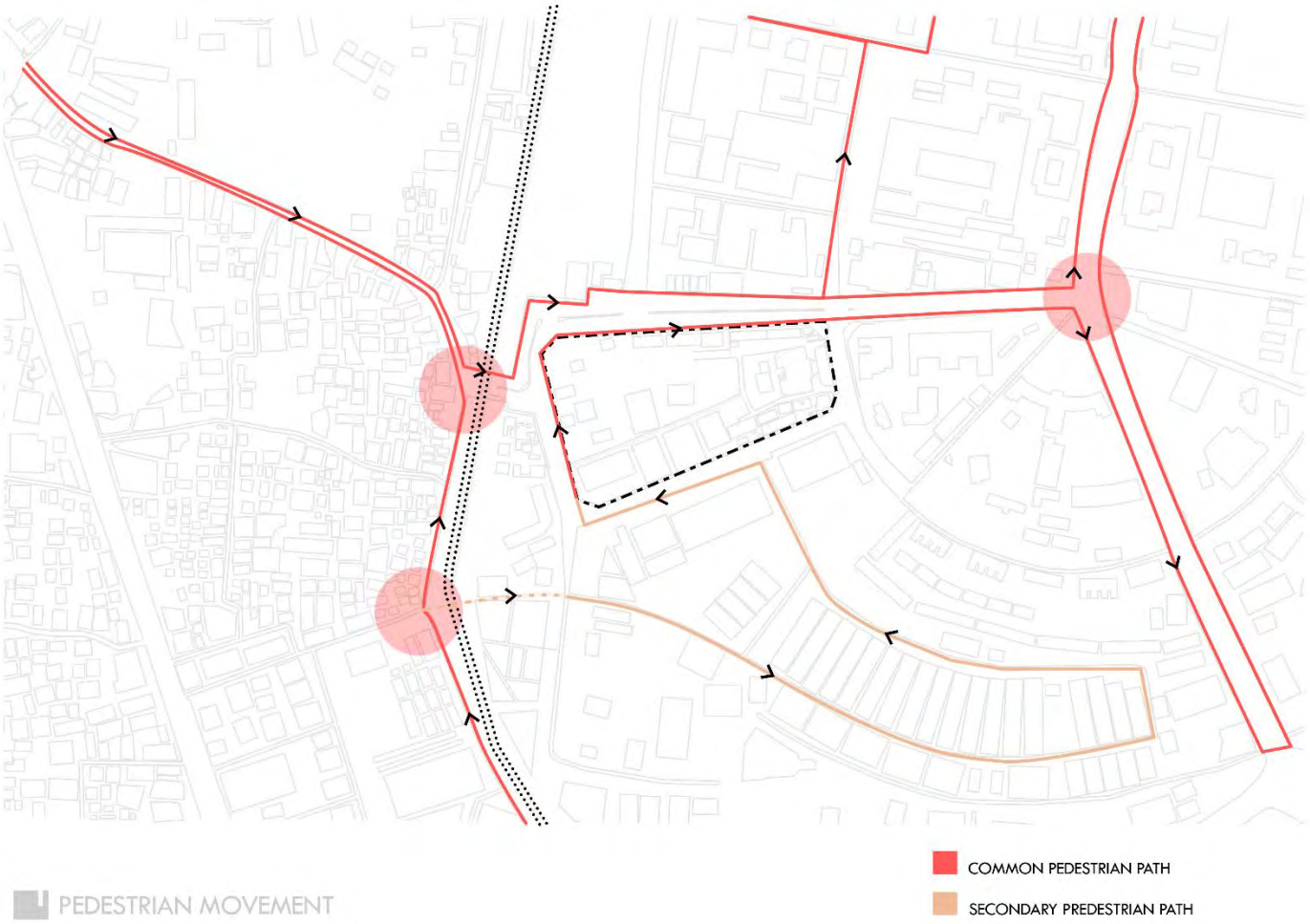


Fig 7.4: Pedestrian movement map

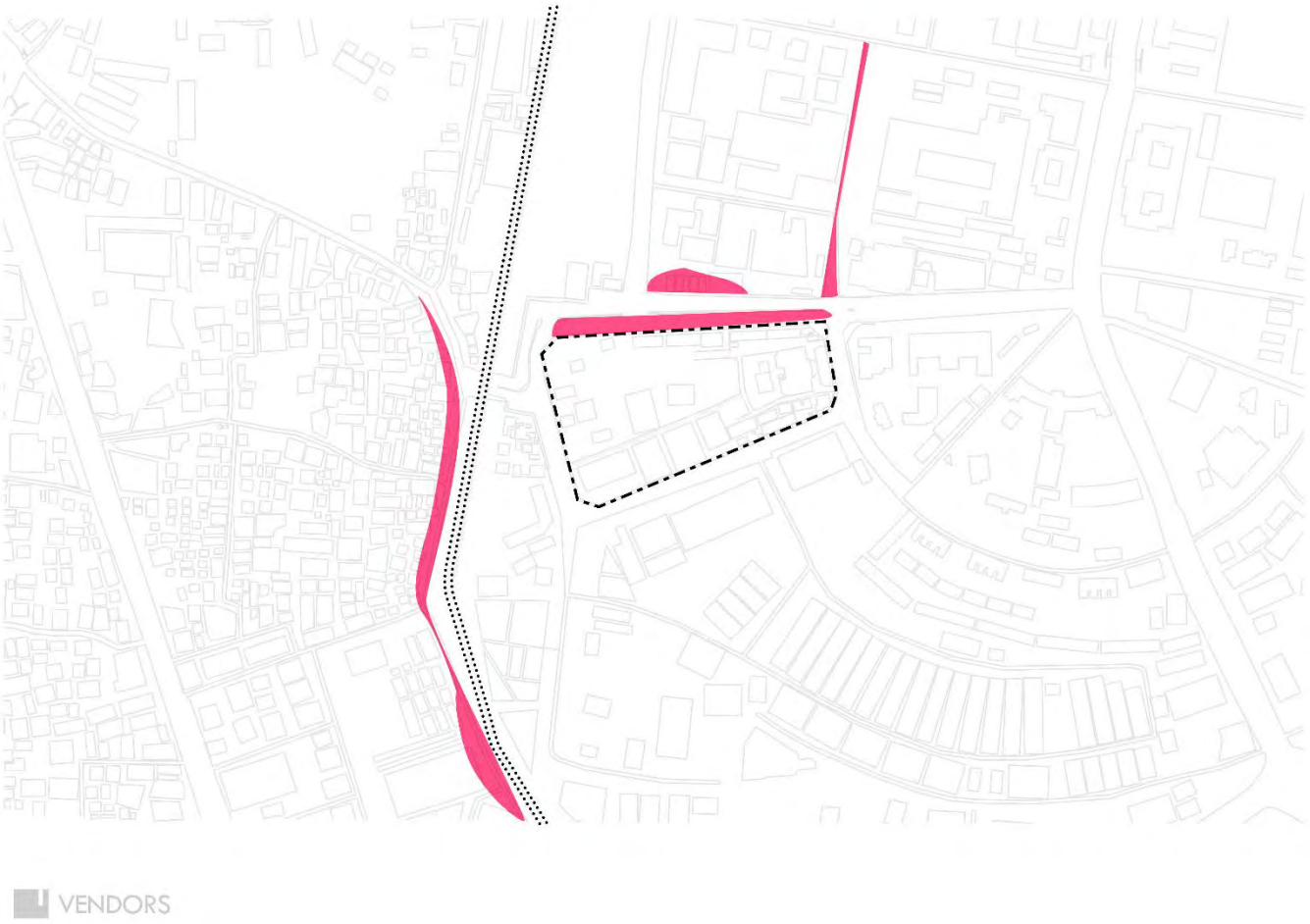


Fig 7.5: Vendor activity map

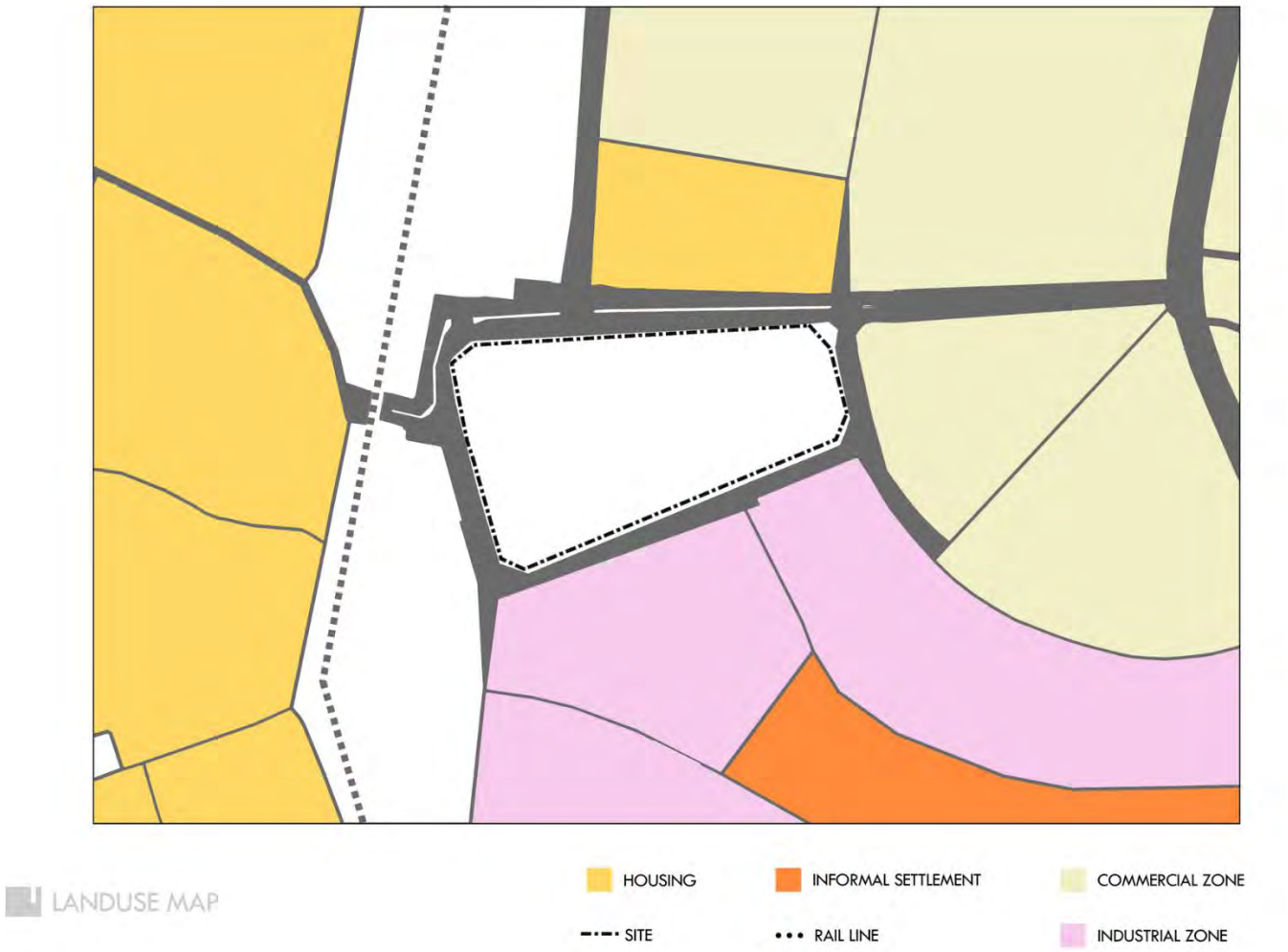


Fig 7.6: Land use diagram

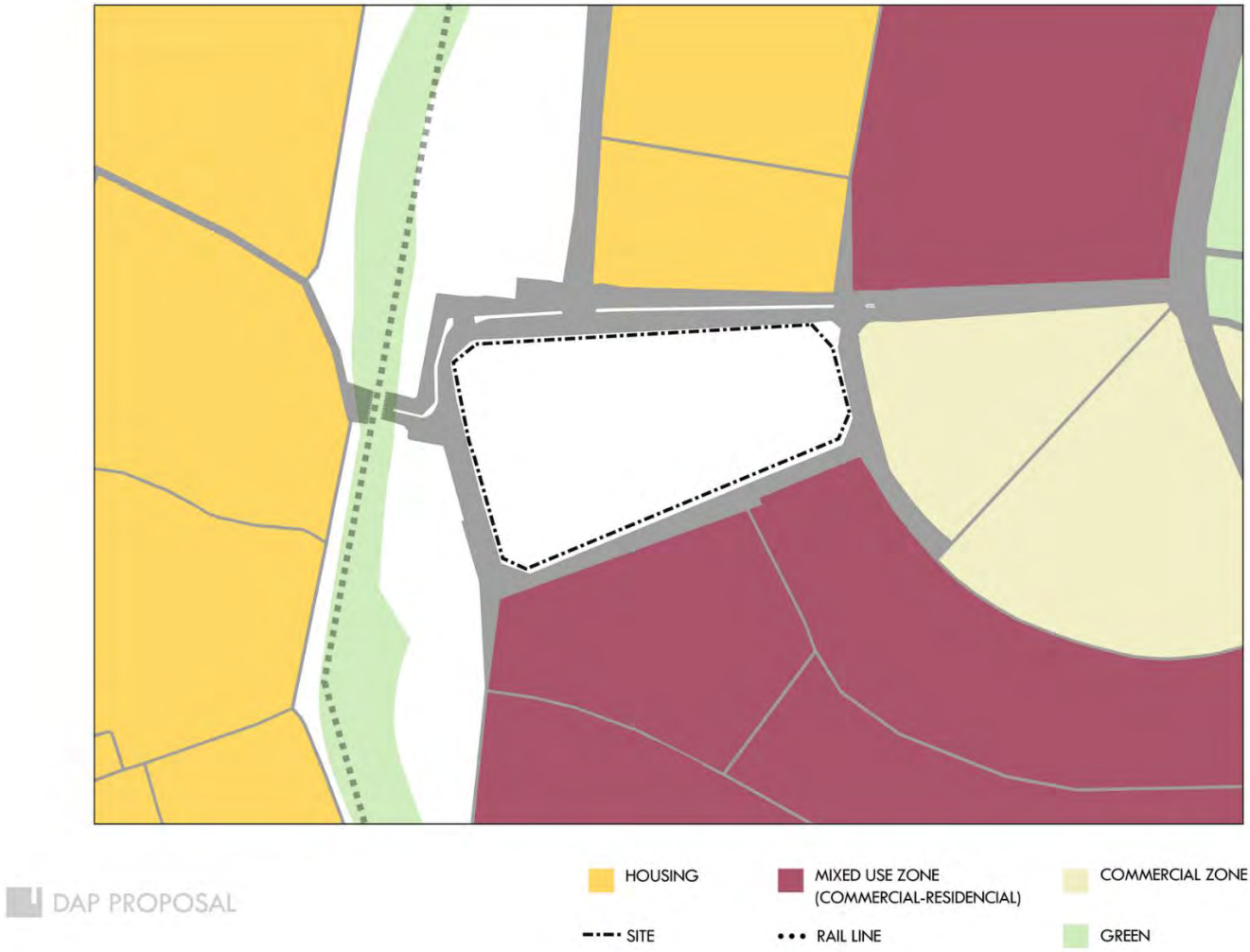


Fig 7.7: DAP Proposal diagram

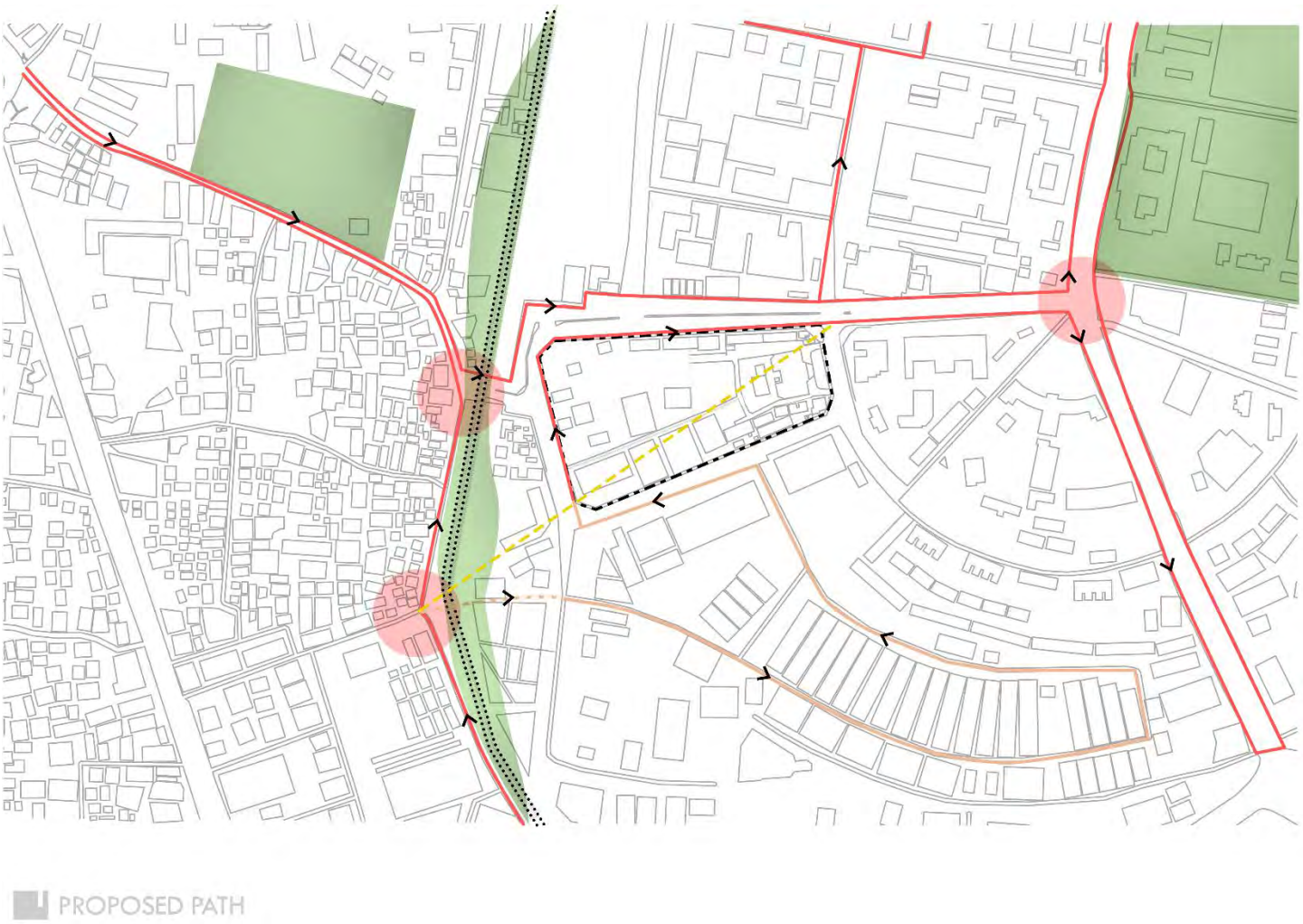


Fig 7.8: Design proposal

The whole project is designed in such a way that there are multiple entrances on different levels in the project that connect to the main path which is designed to ensure accessibility of the common public along with the office-going people. There exists a total of 17 floors including two basements wherein one basement has public functions along with parking and the other basement serves the purpose of parking only.

The whole building complex has been designed in a single circulation which makes it easier for the people to have a proper sense of direction.

The ground floor has been designed in such a way that there are basic functions that can be enjoyed by the neighborhood as well as the office-going people. These public spaces can be rented by other people as well as per their need. An accommodation has been designed which came by analyzing the present scenario of the site. Starting from the first floor of the accommodation block has been designed in such a way that it serves the purpose of serving the people living there. In the office block, from the first floor, it has been designed to serve the people working there.

7.1 Design Concept & Form Generation

Fig 7.1.1: Design concept

The main concept of the project is to celebrate the changes of the whole neighborhood that it will undergo in the next 20 years by connecting the whole neighborhood.

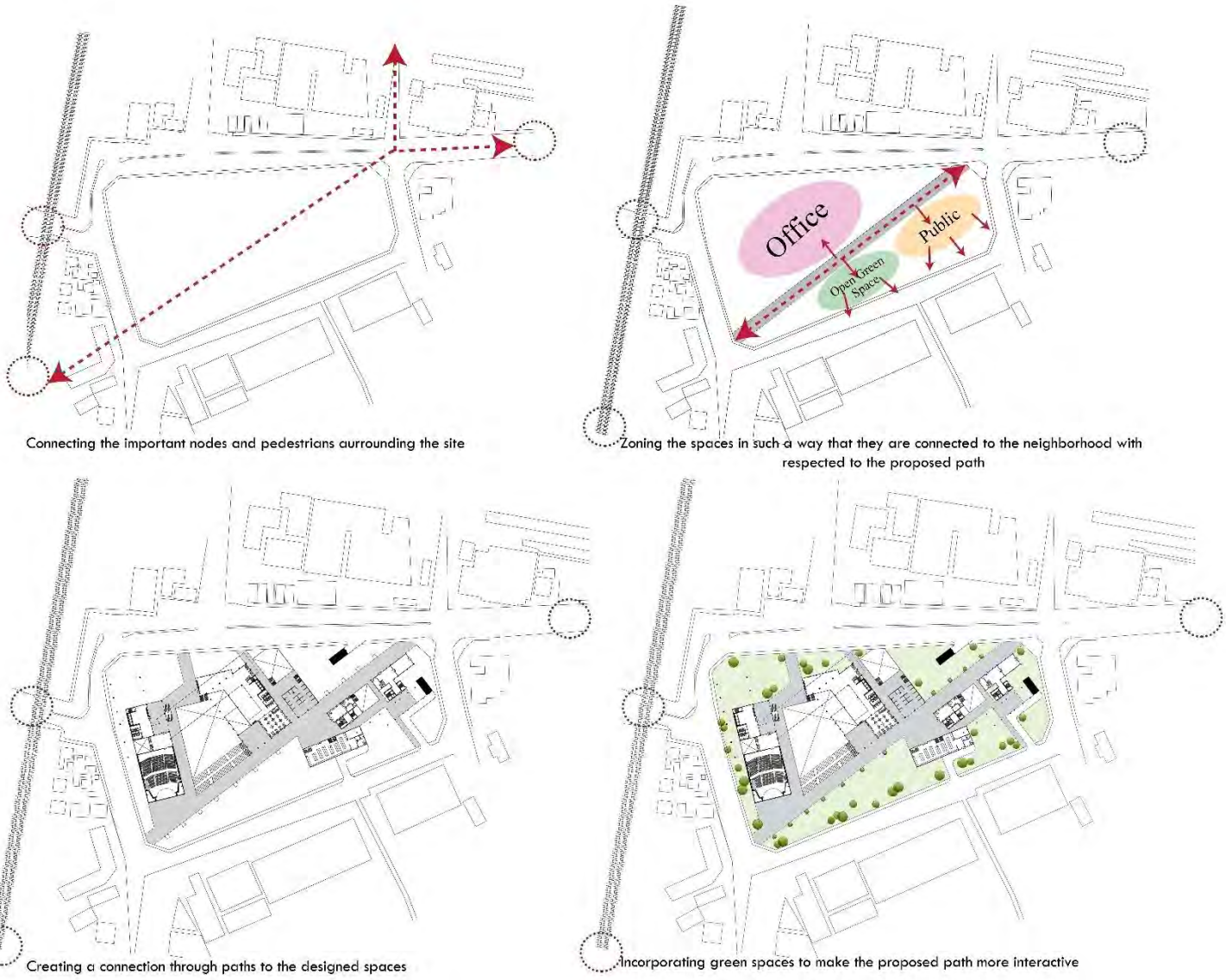


Fig 7.1.2: Form generation

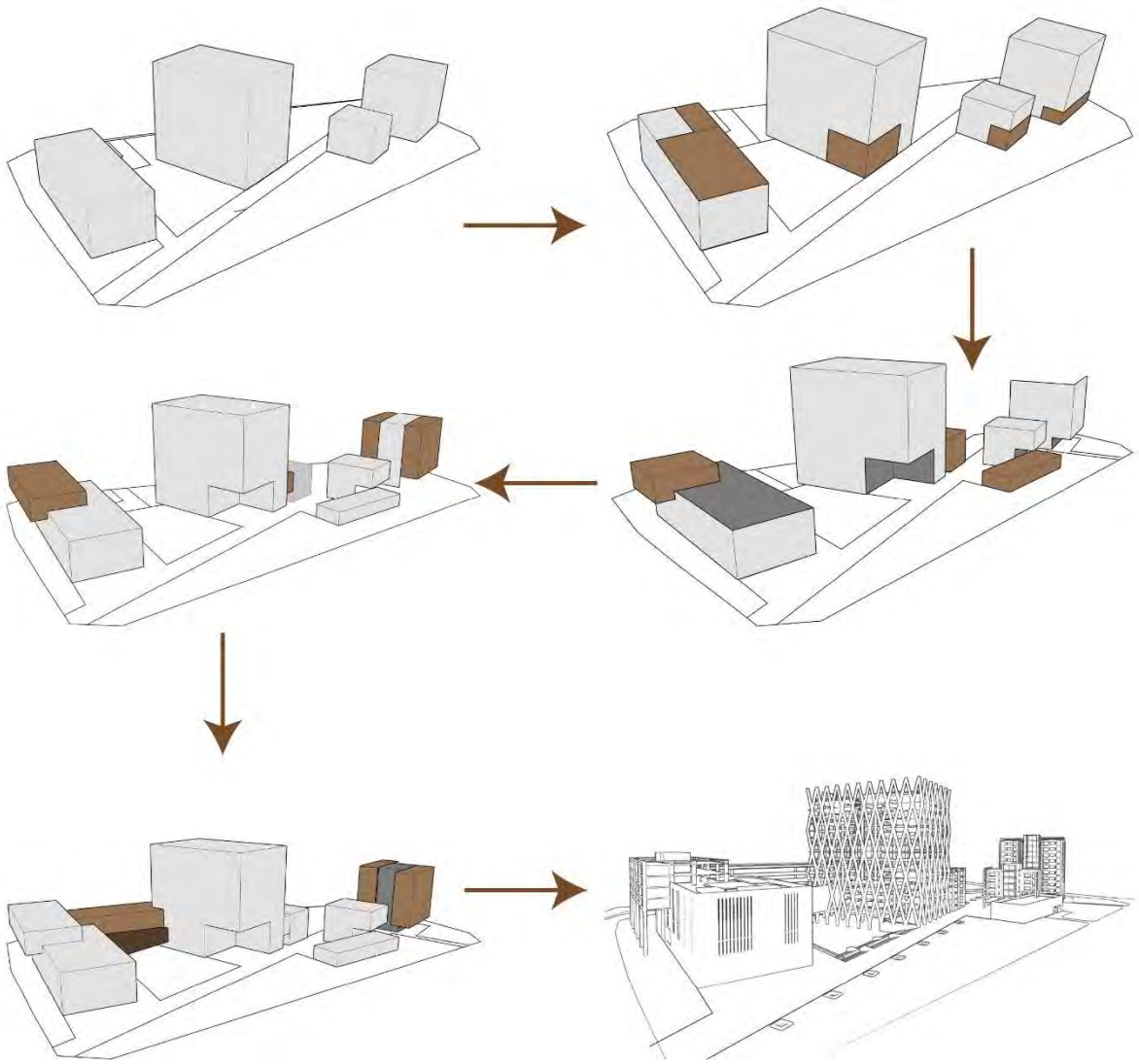


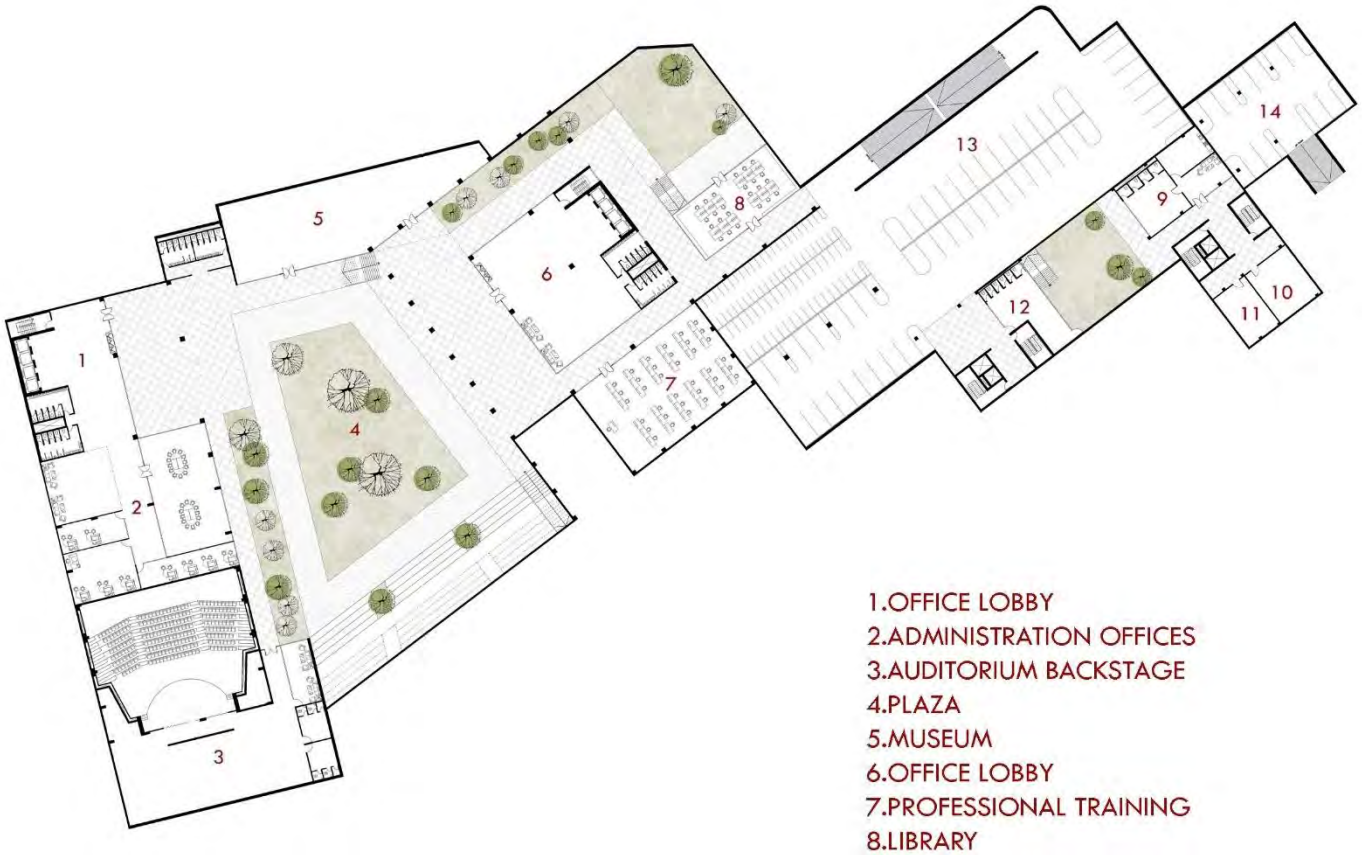
Fig 7.1.3: Form generation

The form has been generated in such a way that different forms interconnects with each other with respect to the designed path.

7.2 Plans

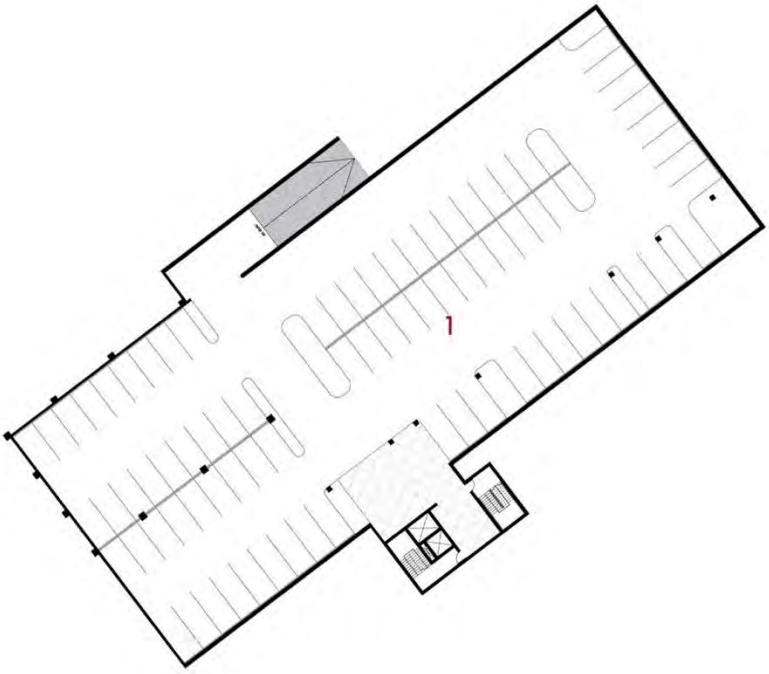
GROUND FLOOR PLAN

1.OFFICE LOBBY
2.AUDITORIUM LOBBY
3.AUDITORIUM
4.OFFICE LOBBY
5.ATM
6.COFFEE SHOP
7.RETAIL
8.SUPERSHOP
9.PHARMACY
10.ACCOMMODATION LOBBY
11.PET SHELTER
12.EXHIBITION SPACE
13.MELA



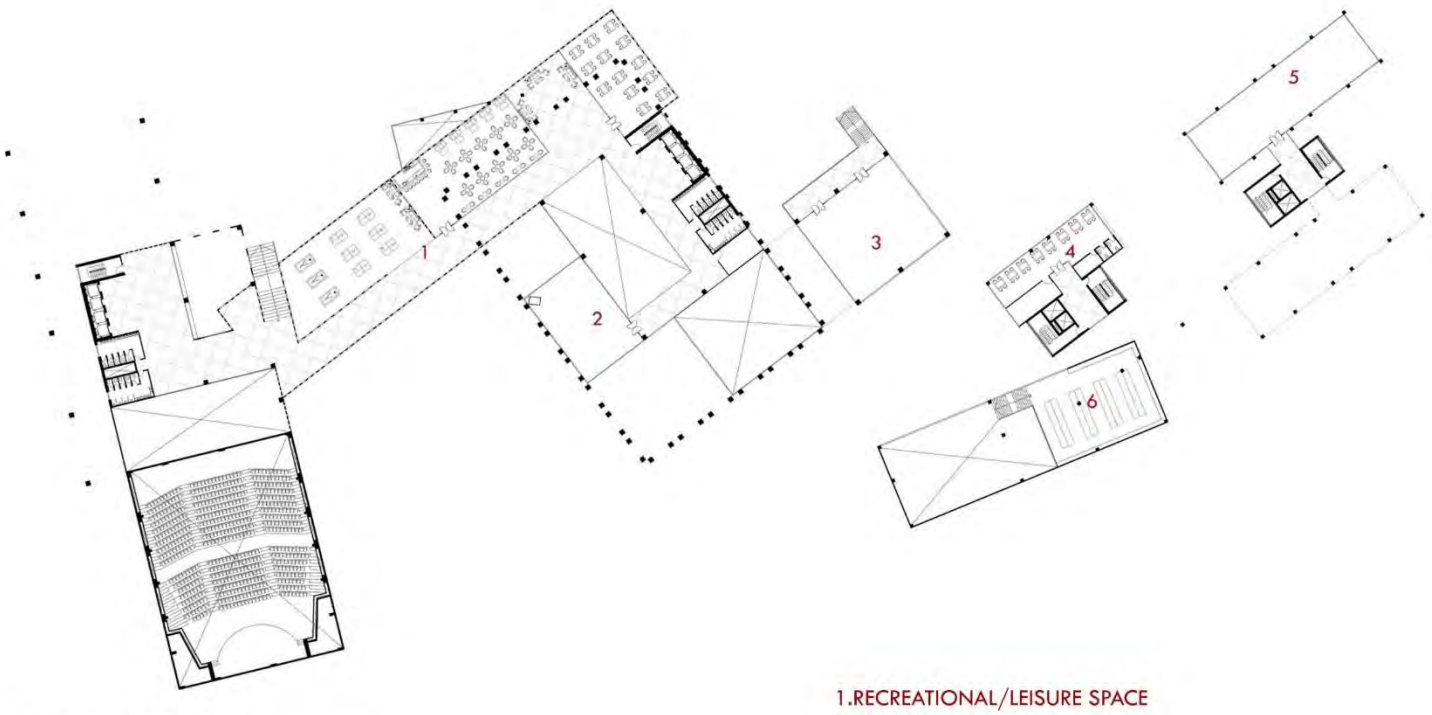
BASEMENT PLAN

1.OFFICE LOBBY
2.ADMINISTRATION OFFICES
3.AUDITORIUM BACKSTAGE
4.PLAZA
5.MUSEUM
6.OFFICE LOBBY
7.PROFESSIONAL TRAINING
8.LIBRARY
9.SECURITY GUARD'S ACCOMMODATION SPACE
10.MECHANICAL ROOM
11. WATER RESERVOIR
12.CHAUFFEUR'S REST ROOM
13.OFFICE PARKING
14.ACCOMMODATION PARKING



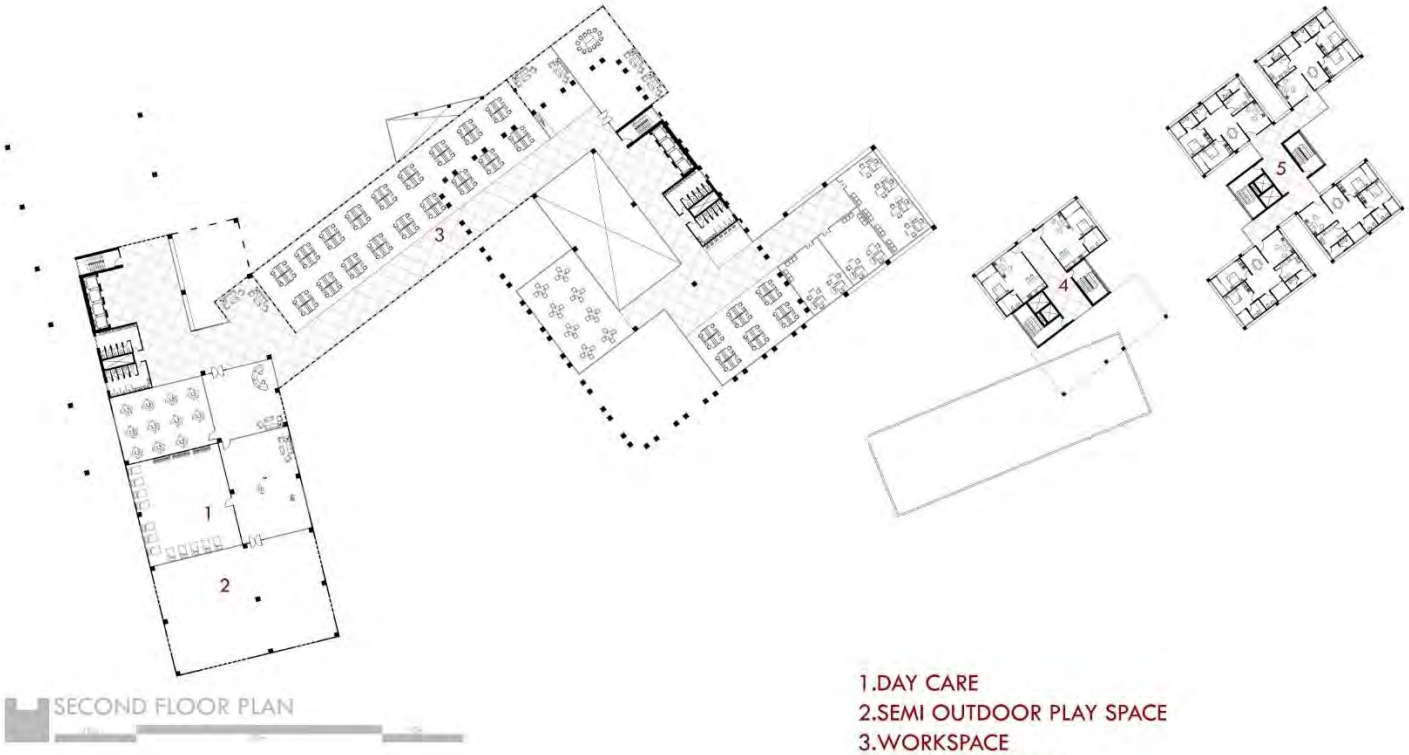
BASEMENT TWO PLAN

1.PARKING



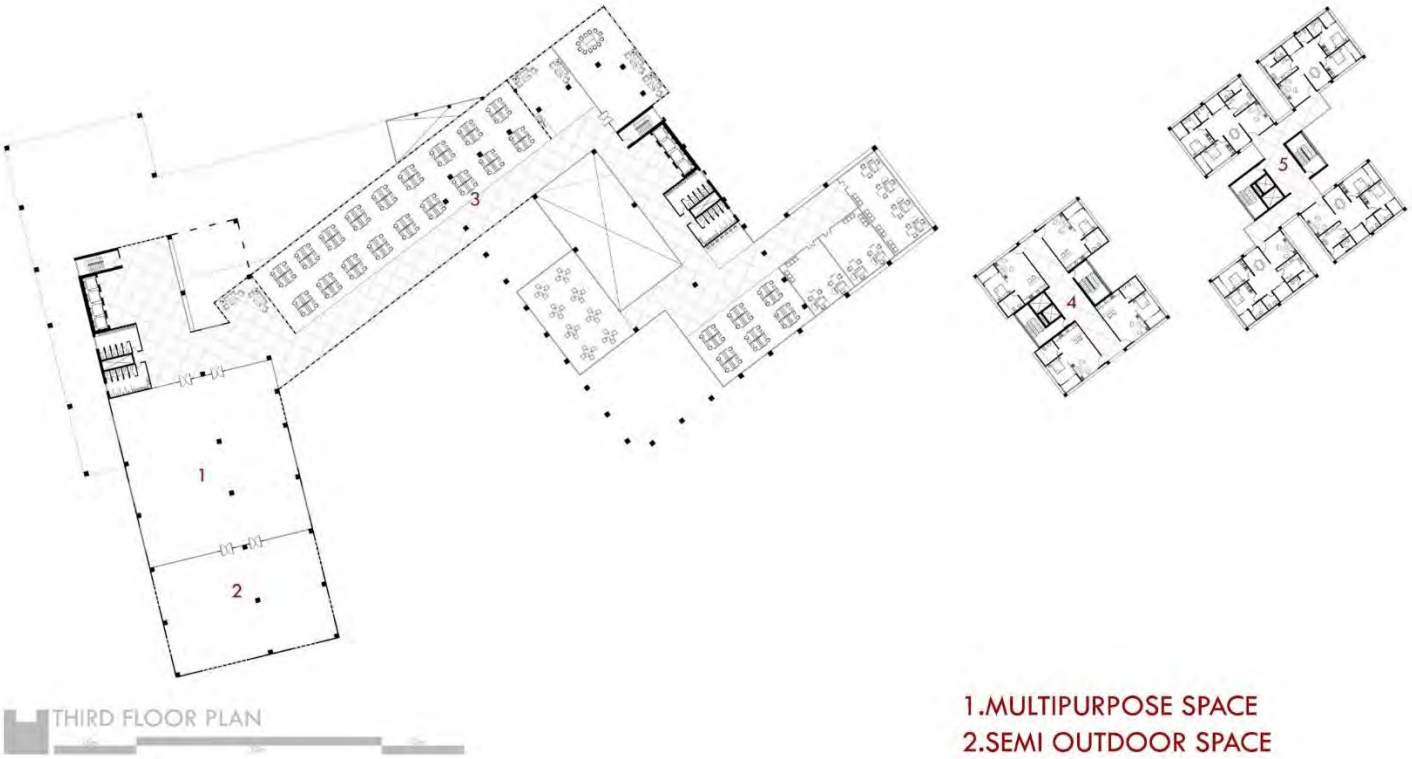
FIRST FLOOR PLAN

1.RECREATIONAL/LEISURE SPACE
2.PRAYER SPACE
3.RENTABLE MULTIPURPOSE SPACE
4.DINING SPACE
5.MULTIPURPOSE SPACE
6.SUPERSHOP



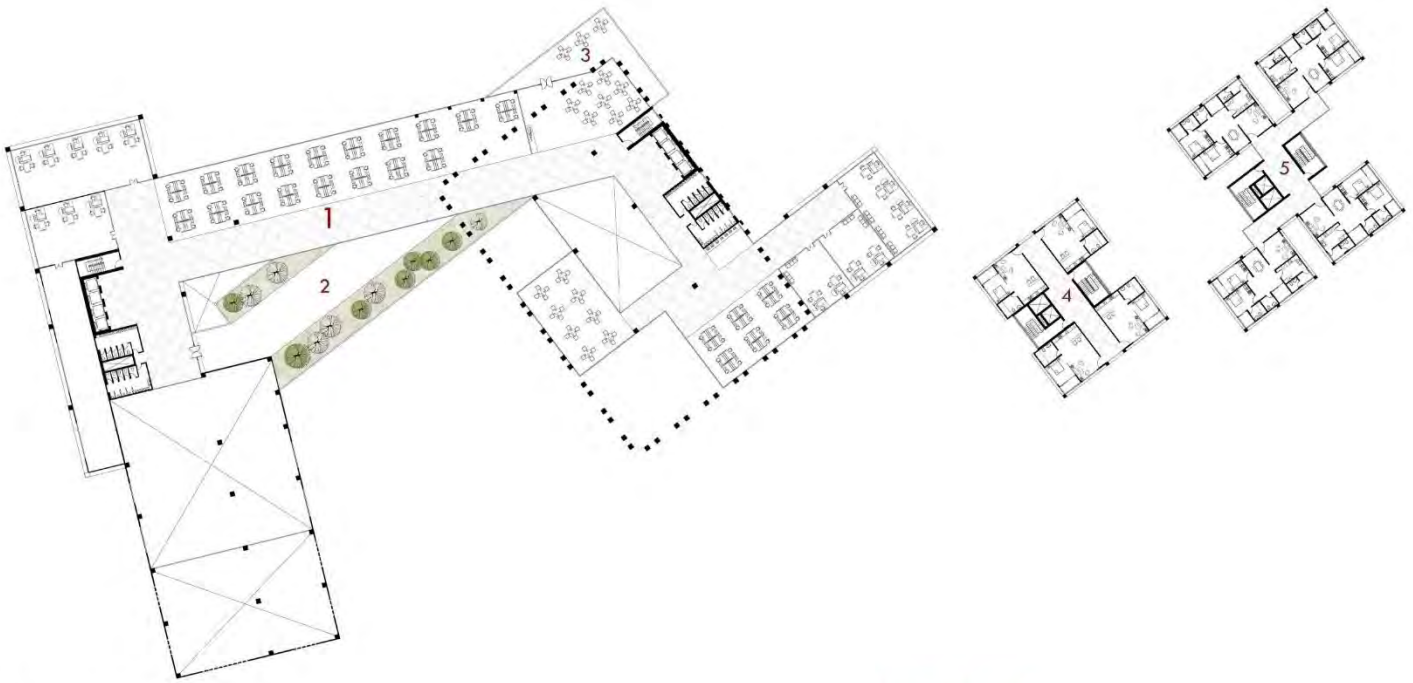
SECOND FLOOR PLAN

1.DAY CARE
2.SEMI OUTDOOR PLAY SPACE
3.WORKSPACE
4.STUDIO APARTMENT
5.STAFF ACCOMMODATION



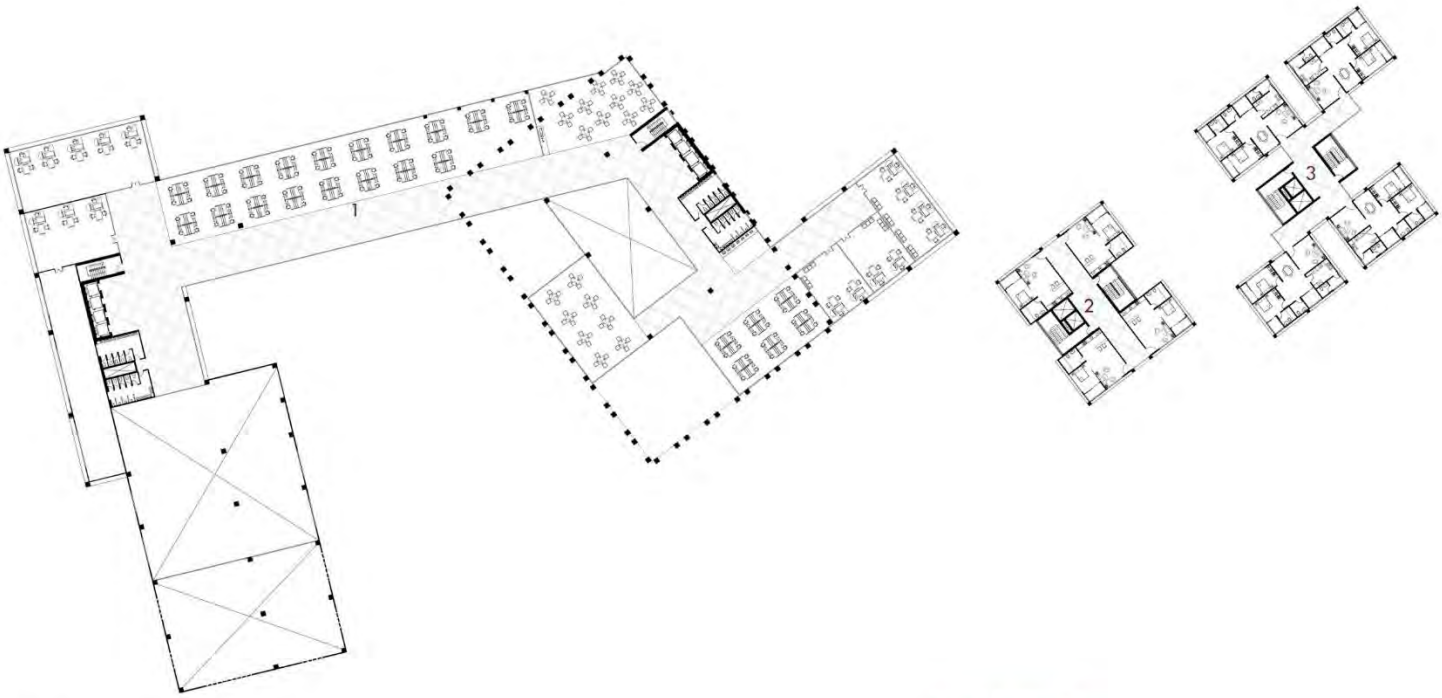
THIRD FLOOR PLAN

1.MULTIPURPOSE SPACE
2.SEMI OUTDOOR SPACE
3.WORKSPACE
4.STUDIO APARTMENT
5.STAFF ACCOMMODATION



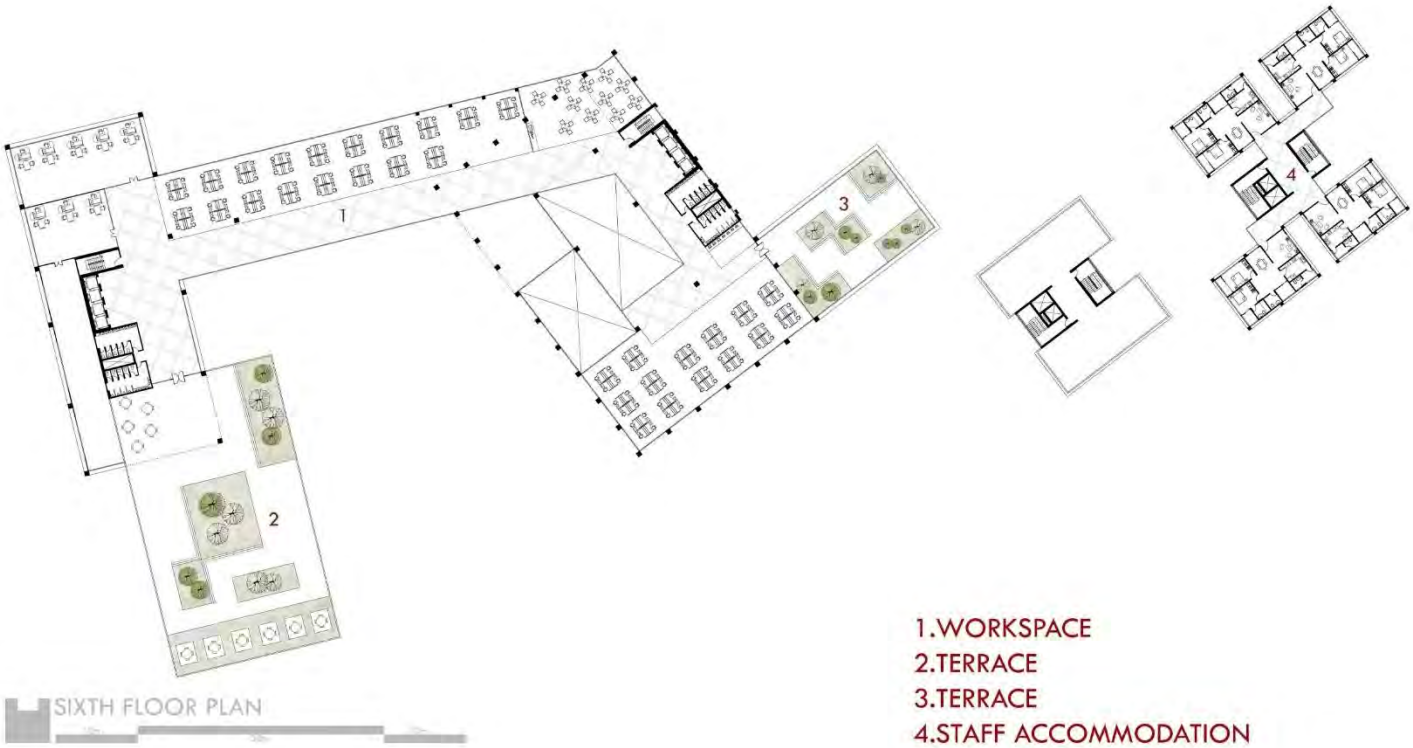
FOURTH FLOOR PLAN

1.WORKSPACE
2.TERRACE
3.TERRACE
4.STUDIO APARTMENT
5.STAFF ACCOMMODATION



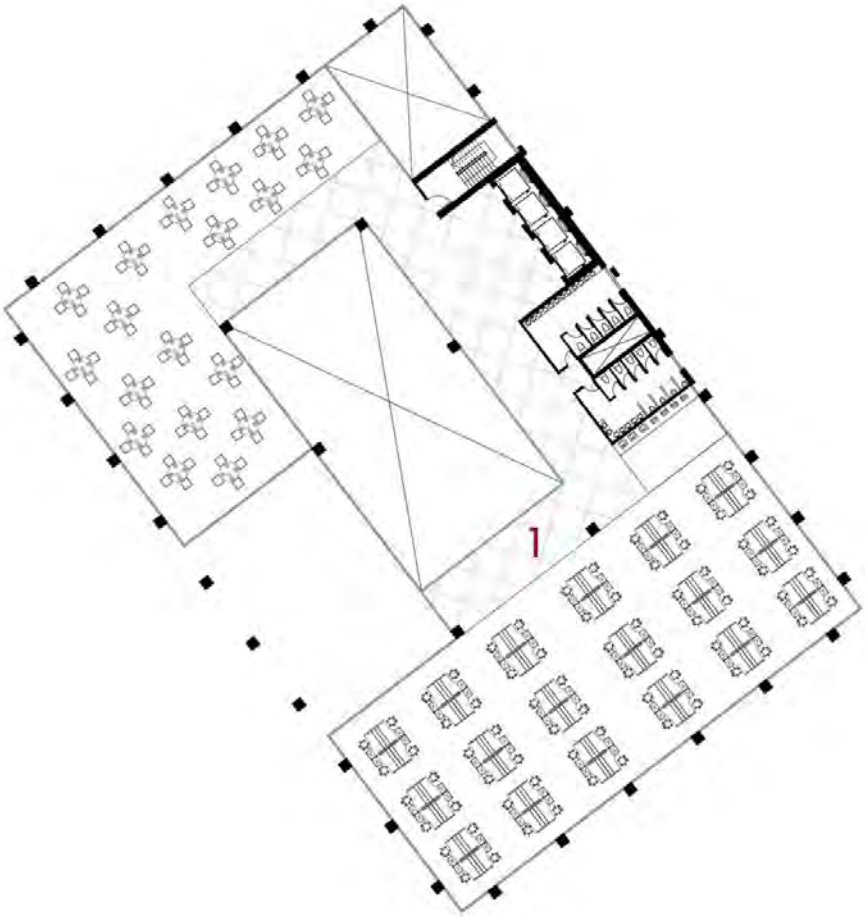
FIFTH FLOOR PLAN

1.WORKSPACE
2.STUDIO APARTMENT
3.STAFF ACCOMMODATION



SIXTH FLOOR PLAN

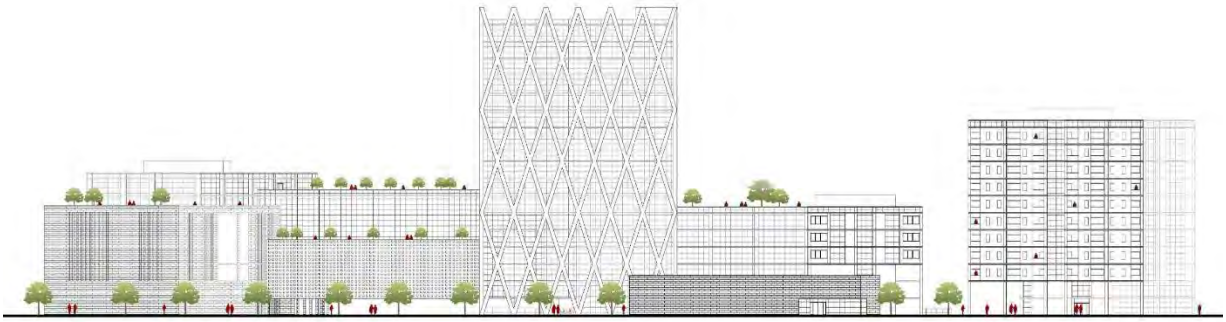
1.WORKSPACE
2.TERRACE
3.TERRACE
4.STAFF ACCOMMODATION



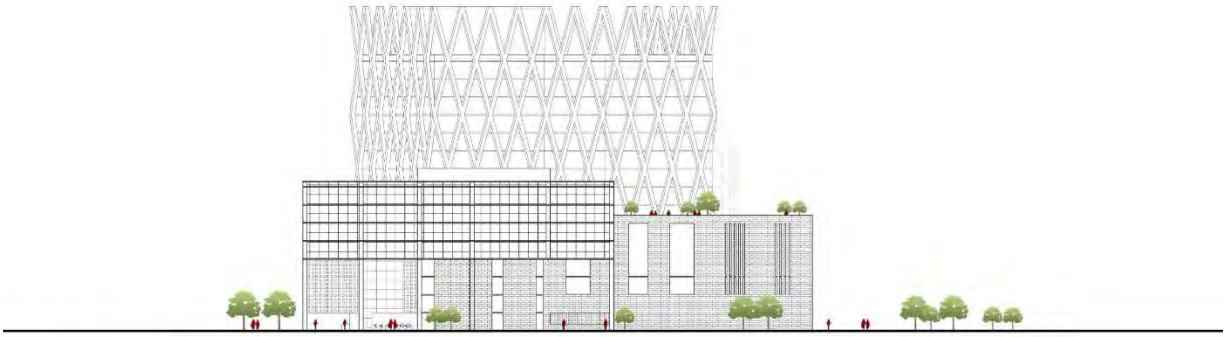
1.WORKSPACE

TYPICAL FLOOR PLAN

7.3 Elevations

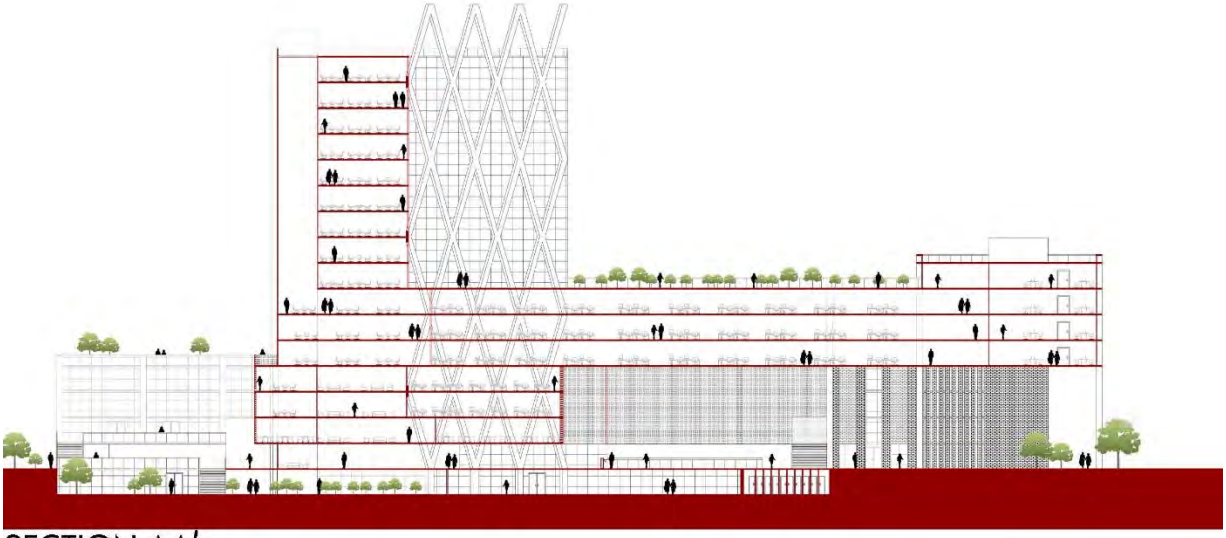


SOUTH EAST ELEVATION

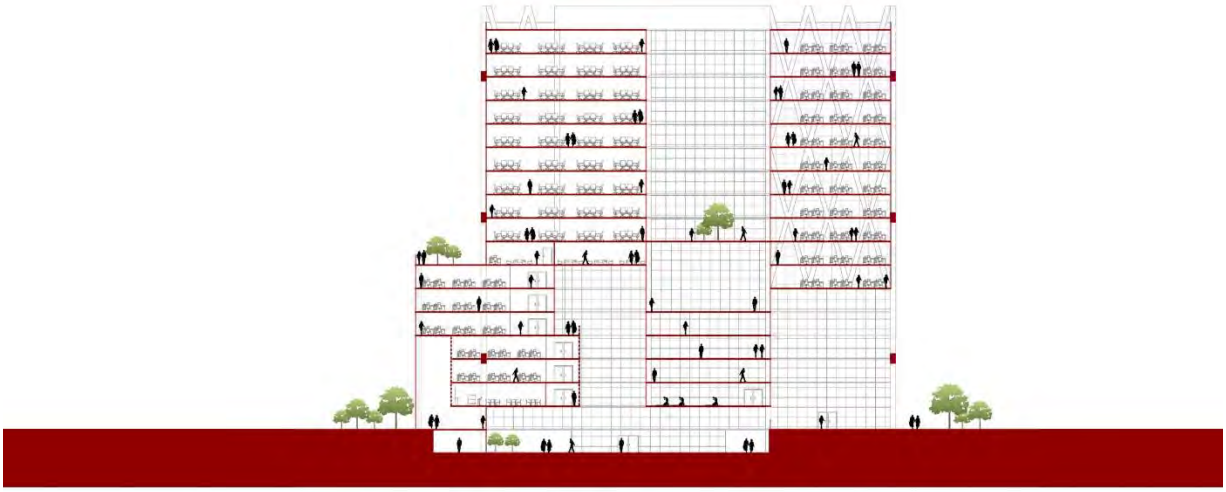


NORTH WEST ELEVATION

7.4 Sections



SECTION AA'



SECTION BB'

7.5 3D Rendered Images

Fig 7.5.1: Axonometric view of the project

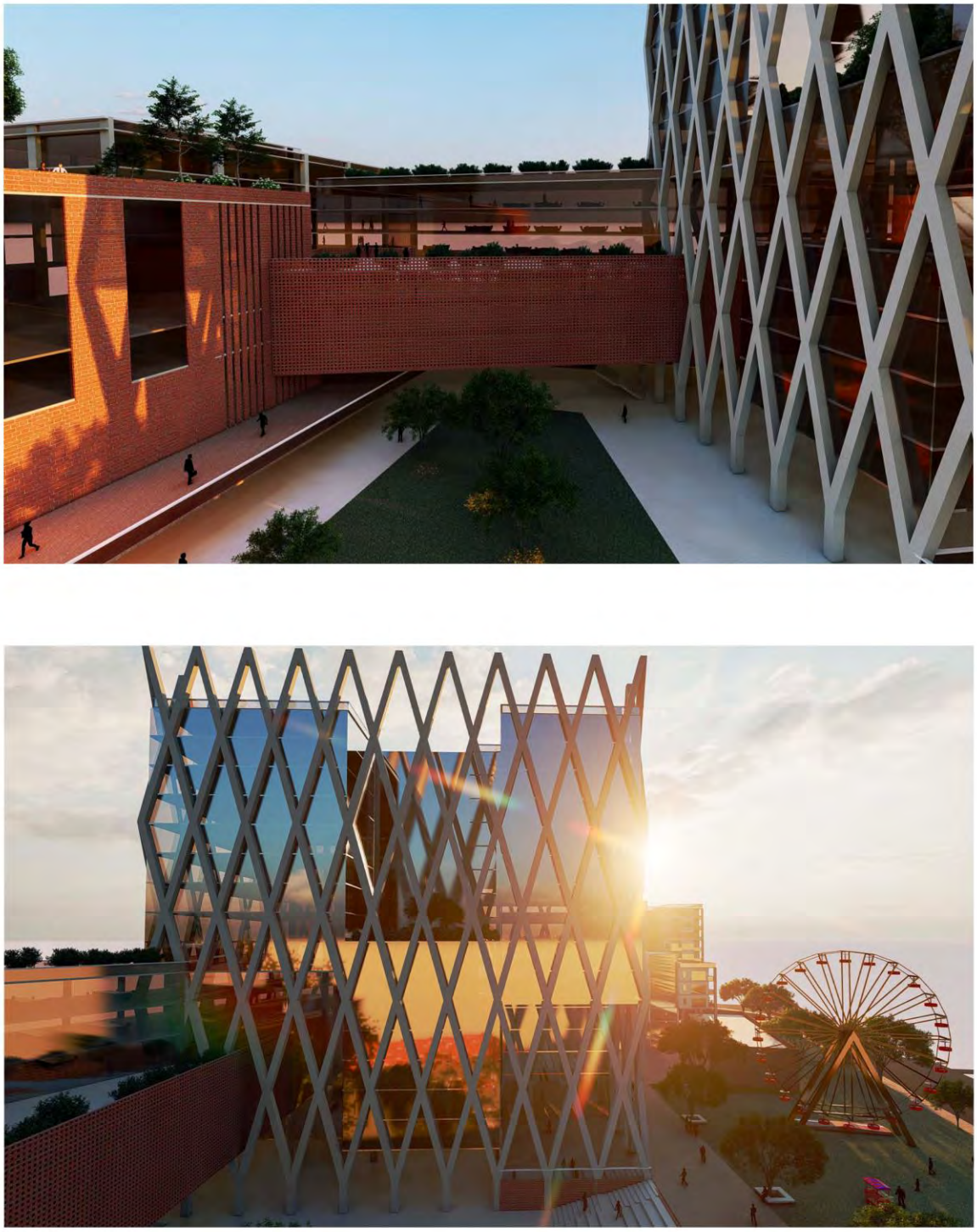


Fig 7.5.2: Visual connectivity on different level of the project

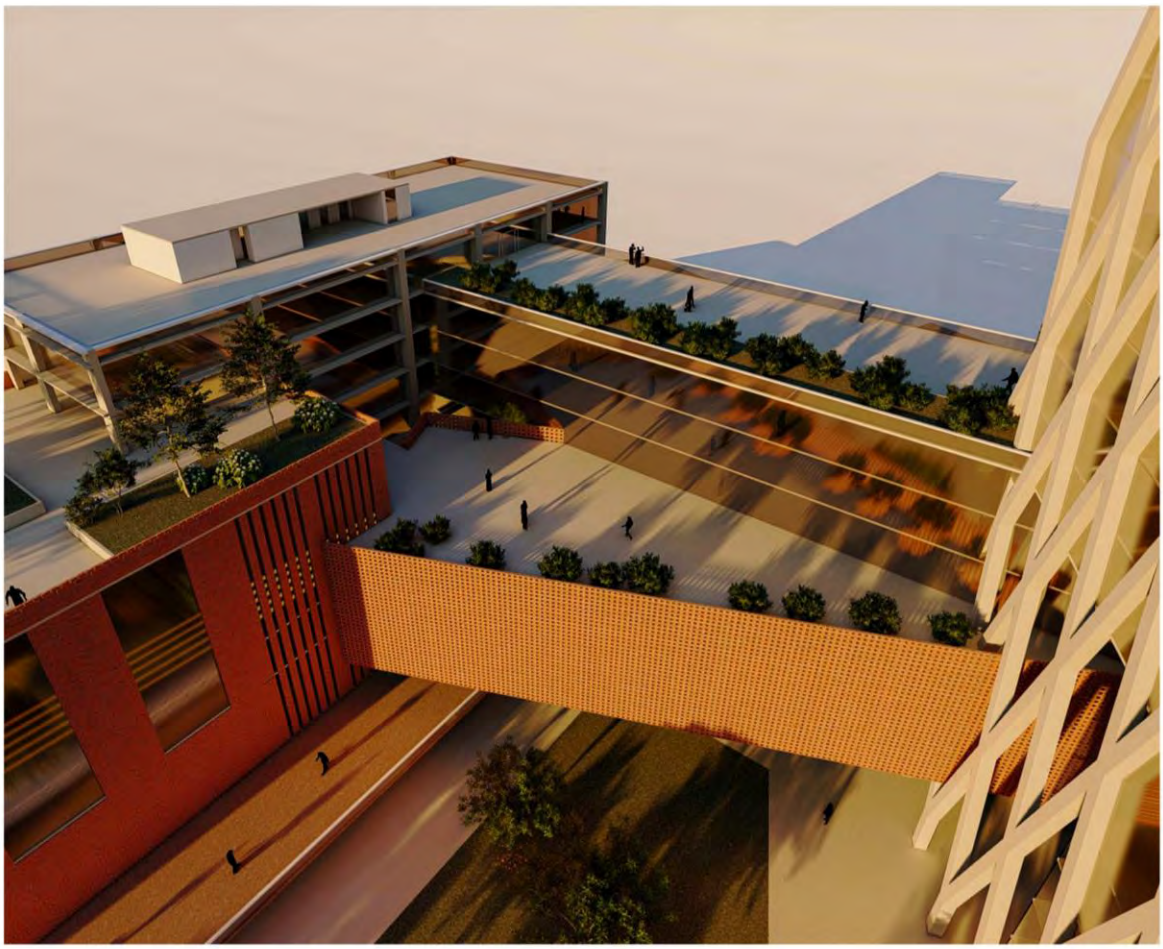
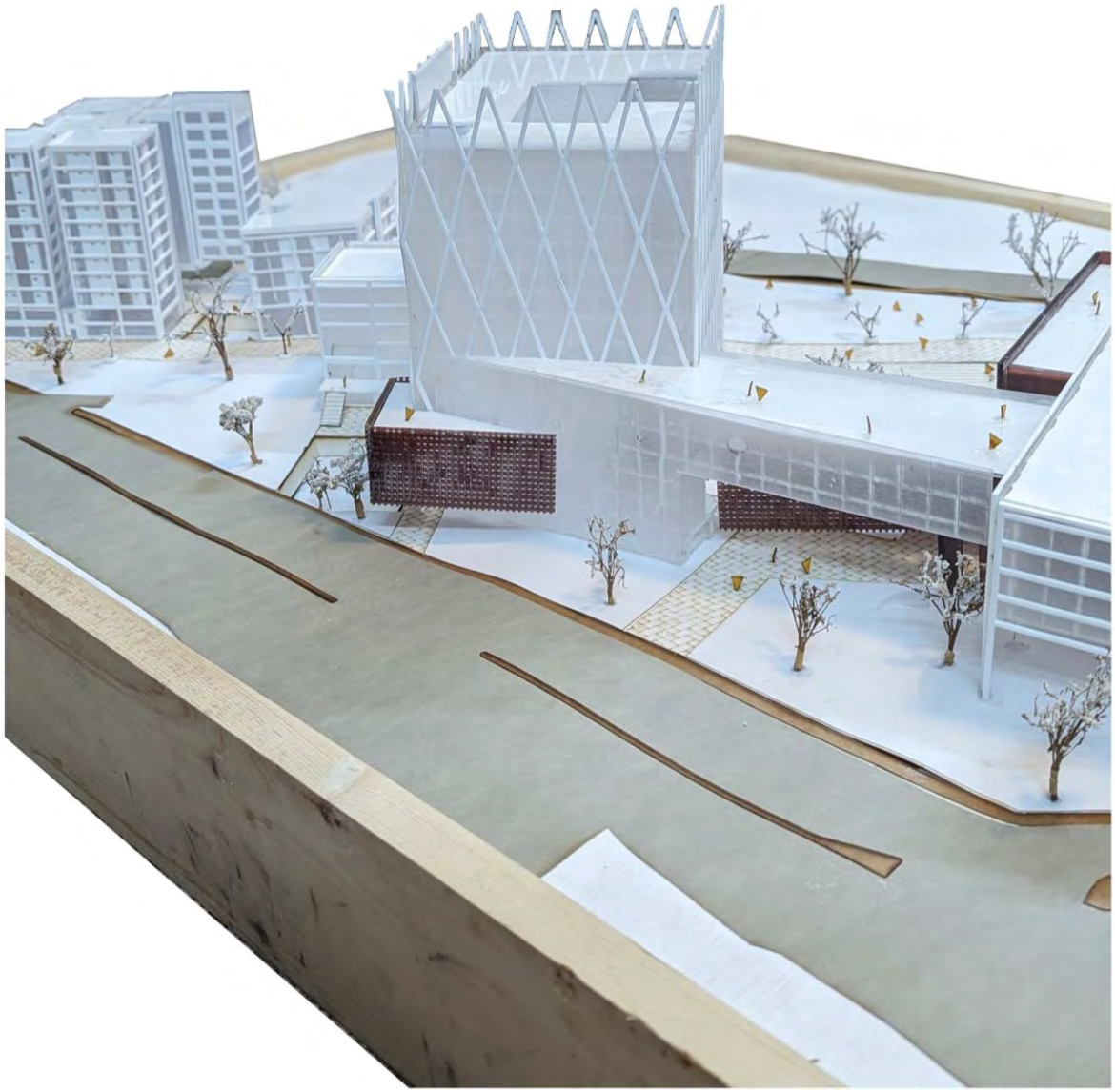
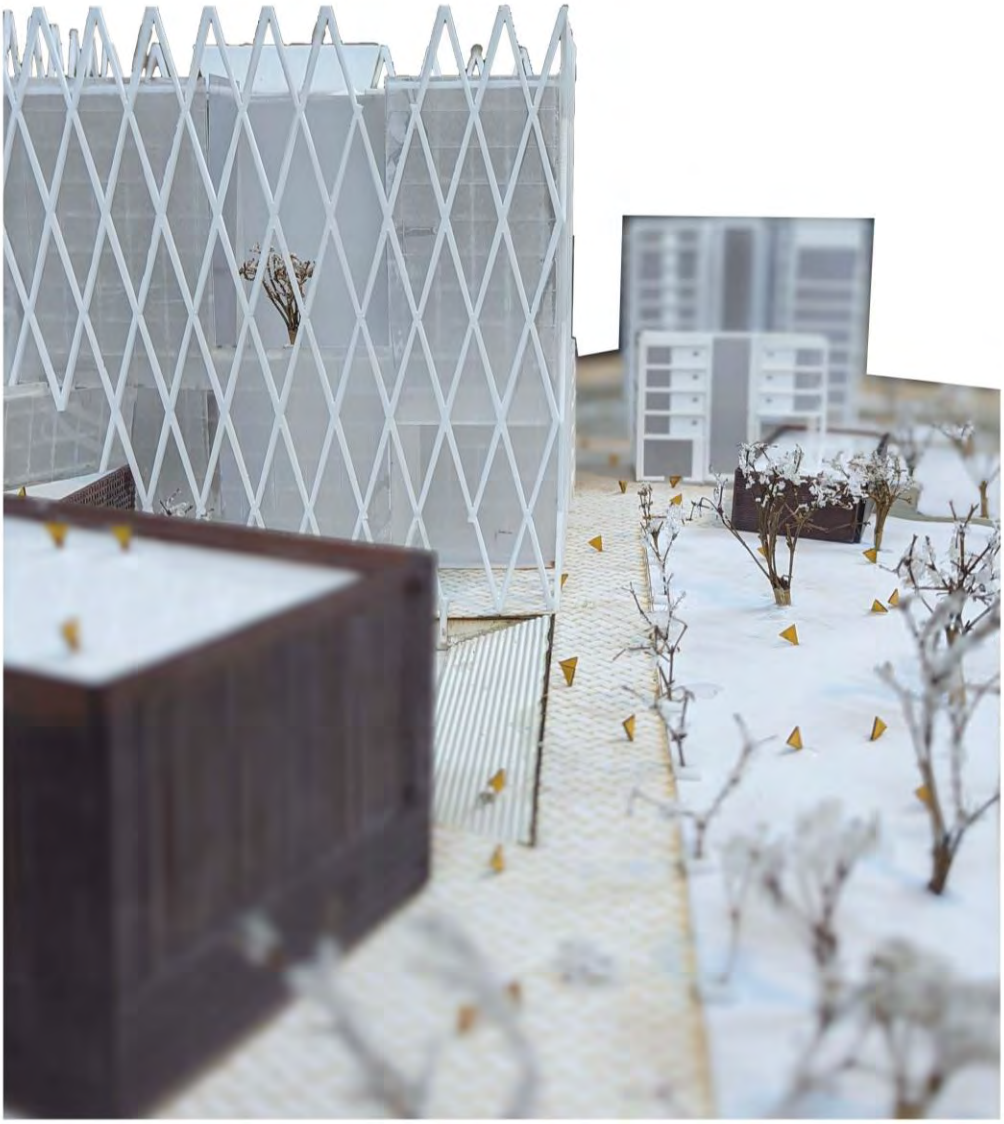


Fig 7.5.3: Green connection

Fig 7.5.4: Entrance and connectivity on different levels

7.6 Physical Model Images





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