A PROJECT PROPOSE

ON

BUS TERMINAL

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HND/22/ARC/FT/085

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURAL TECHNOLOGY, INSTITUTE OF ENVIRONMENTAL STUDIES, KWARA STATE POLYTECHNIC, ILORIN, KWARA STATE.

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CERTIFICATION

I certify that this Research Project titled "BUS TERMINAL" for Ilorin, Kwara State, was carried out by OLAJUMOKE Ayodeji Elisha with matric number HND/22/ARC/FT/085 under my supervision and has been approved as meeting part of the requirements for the award of HND in Architectural Technology, institute of environmental studies, Kwara State Polytechnic, Ilorin Kwara State.

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DEDICATION

This research project work is dedicated to Almighty God the source of knowledge and to who teaches and guides me throughout the academic pursuit.

ACKNOWLEDGEMENT

I return all the glory, honour, praises and adoration to the master of the universe that has given me the privilege of seeing the end of this program. To Him (God) alone be the glory. My immediate gratitude goes to the Department of Architecture Technology the entire staff and also to my mentor and supervisor Arc. Abdulazeez B. Y. F who has been supportive throughout this project, may God continue to bless and reward you and family abundantly. My sincere gratitude goes to my parents, Mr. and Mrs. Olajumoke, who brought me to this world, and for the role they play in my life right from birth till this present time. I pray Almighty Allah grant them the grace of good health and eat the fruit of their labour.

However, my gratitude also goes for all my beloved brother (Tosin Falade, Erigbemi Olajumoke) and those that have supported me through the words of encouragement.

I can't forget the helps from my friends, course mates and colleagues, may God bless you all (Amen).

ABSTRACT

This thesis explores the Bus Terminal crucial role in advancing architectural education, research, and practice. It examines the comprehensive undergraduate and doctoral academic programs, highlighting their integration of design theory, technical proficiency, and practical experience. Emphasizing critical thinking, creativity, and interdisciplinary collaboration, the curriculum prepares students to address challenges in the contemporary built environment.

Additionally, the thesis highlights the Bus Terminal to community engagement and global outreach. By partnering with industry, government, and non-profit organizations, the Bus Terminal ensures its educational and research efforts have a tangible impact on real-world architectural and urban challenges. International exchange programs, study abroad opportunities and public lectures further enrich the learning experience, fostering a global perspective among students and faculty.

And it ensure the well-being of people moving from one place to another and it serves as a good convenience for people around community.

Travel convenience needs to be supported by the existence of cheap, fast and comfortable public transportation. Jakarta as a Metropolitan City pays close attention to this and plans to improve all existing bus terminals and make them well and planned connected to all existing transportation networks. The transportation network integration system with community facility centers is known as "Transit Oriented Development" or TOD. One of the bus terminals included in this program is the Kampung Rambutan Bus Terminal, which is deemed unsuitable for use. The irregularity of the flow of pass

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CHAPTER ONE

1.0 INTRODUCTION:

The Tern Bus drives from 19th Century Word Omni bus meaning " for all" which is derivate from latin omms, meaning all First Bus dates from the 1823 when Stanislas Baudry Started to offer Transportation Services with horse drawn omnibus. With First Bus vehicle the First Bus Station was found in front of shop named omnibus, where omnibus had it regular stop after Nantes, the bus services were established in Paris and after London in 1929.

Established bus transportation was developing together with services which followed transportation service with development of transportation network expanding routes length and enlargement of passenger' number, requirement for following services from the early beginning the quality of Bus Transportation and accompanying services reflected local community development of Bus Services were influenced by passenger demand and volumes.

In all sphere of human life building are always necessary to satisfy human need. This study mainly focuses on the analysis of an assembly building i.e munipal Bus Terminal Pandalan using Staadpro V81556 and Manual designing.

In this study structural part is analyzed, the bending moment deflection shear force etc are analyzed. A bus Terminal sometimes called a bus station or a bus depot is a place where buses stop to allow passengers to get on and off. Bus Terminal are typically located in Urban Area, near city centre or transit hubs, there may be simple shelters with a few benches and with shops, restaurants, and restroom. Bus terminal are and important part of public transportation system providing a convenient place for people to connect to other mode of transportation, they can also be a hub for community activity with people meeting, chatting and socializing while they wait for their Bus.

1.1 Historical Background

1. The history of Bus terminal goes back to the early day of Public Transportation when horse drawn carriage and street car began to be replaced by motorized Buses in the early 1900, cities began to build centralized location for Bus Services called “Bus Station” or Bus Depot” this were often located in the city center near train station and other transportation hubs.

2. The history of Bus terminal first known company savoy hill depot which opened in 1847 it had capacity for 100 buses and included facilities for cleaning, repairing and housing the horses the first bus terminal in the United State was the Peter Stuyuesan + Station in New York City.

3. The history of the modern bus terminal began in the early 20^{th} century when cities started to expand an develop large scale public transportation system. In the united state cities like new York and Chicago began to build large centralized bus station to serves as the hub, for their growing transportation networks.

4. The Historic bus terminal have retained their original design over time the chery chase and Colorado Avenue bus terminal have been determined eligible for listening in the National register of historic place and the Calvert street terminal is part of the national Karlirama.

1.2 DEFINITION

1. A Bus Terminal is a facility where buses stop to allow passenger to get on and off. It’s also a place where buses are stored and maintained when they are not in use most bus terminal are located in urban area and they may be part of a larger transportation hub that also include train and subway station. Some bus terminals are simple shelter with a few benches while other are larges facilities with restaurant shops

and other amenities regardless of their size Bus Terminal play an important role in the movement of people and goods within cities a bus terminal is a place where buses stop to load and unload passenger. In the real state industry.

2. A Bus Terminal is a building facility that is used to house buses in the legal industry a bus terminal is a place where buses are regulated and monitored in the social science, a Bus Terminal is a place where people come together to interact and exchange idea. In the digital world, a bus terminal virtual place where people connect and share information.

3. In a simplest form a bus terminal is a place where people get on and of buses. But it's so much more than that Bus Terminal can be transit hubs that connect. In some cities Bus Terminal are community gathering place with shop, restaurant and other amenities and for many people watch and even meet friend or family so, a bus terminal is a really a community space as well as a transportation hub.

1.3 The Aim of Bus Terminal

1. Transportation Hub
2. Passenger Convenience
3. Efficient Operation
4. Safety and Security
5. Economic Benefit
6. Easily Connection
7. Proper Waiting Area
8. Routy and Chaotic nature

1.4 OBJECTIVE

The objective of the a bus terminal is to provide a convenient safe and efficient place for people to board and alight from buses in order to achieve this objective, Bus terminal are designed with a number of feature in mind. These include.

1. Efficient traffic flow for buses and other vehicles
2. Ample parking for buses and car's
3. An easy to navigate layout
4. Comfortable waiting area for passenger's
5. Accessiblity for people with disabilities
6. Information displays and signage
7. Secure storage for luggage and other belonging
8. Security ensure such as CCTV and security personal
9. Convenience such as vending

1.5 JUSTIFICATION

1. There are a number of justification for building bus terminal the first is that they provides convenient and safe place. For the people to wait for their bus.
2. Second, they help to reduce traffic congestion by providing a central location for buses to load and unload passenger.
3. Third, they can be a source of job for the local community as they require staff to operate item well overall bus terminal provide a number of benefit that justify their construction and operation.

1.6 RESEARCH METHODOLOGY

Research Questions:

1. How efficient are bus terminal in managing passenger flow
2. What factor's influence passenger satisfaction with bus terminal services
3. How can bus terminal operation be optimized for better performance

- **DATA COLLECTION METHOD:**

1. Survey: Questionnaires for passenger on satisfaction, needs and preferences
2. Observation: Analyzing passenger flow terminal layout and operational efficiency
3. Interview: Discussions with terminal staff, bus operation and passenger for Qualitative insights
4. Performance Metrics: Analyzing data on time departures, passenger volume, and service frequency

- **DATA ANALYSIS**

1. Quantitative Analysis: Statistical analysis of survey data and performance metrics
2. Qualitative Analysis: Thematic analysis of interview and observative data

- **SAMPLING**

1. Random Sampling of passenger for survey
2. Purposive Sampling for interviews with key stakeholders

1.7 LIMITATION AND CONSTRAINT

One of the limitation of bus terminal is its capacity. Bus terminal are only able to accommodate a certain number of buses and passenger at any given time. It the number of buses or passenger exceeds the terminal capacity. It can lead to long wait times crowded condition and even safety Hazard. Another limitation of bus terminal is their location many bus terminal are located in congested area which can make it difficult for buses to access them and for passenger to get to and form the terminal finally some bus terminal, may be limited amenities such as restroom's restaurant and shops. Two major limitation of bus terminal is their tendency to become over crowded during peak hours this can lead to long line delays and missel connections. Another issue is the lack of space for parking which can be especially problematic in large cities.

There are a number of limitation and constraints that must be considered when designing or improving a bus terminal these include:

1. Budget and Funding: Construction and maintenance of Bus terminal can be expensive and funding may be limited.

2. Size and location: Bus terminal are often constrained by the space available and their location may be fixed

3. Accessibility: Bus Terminal must be accessibility to all users including people with disabilities.

4. Safety and Security: Bus terminal must be safe and secure for all user's

Additionally, these are some specific challenges that cam arise when considering the design and operation of bus terminals these include:

1. Bus turnaround time: Buses need to be able to enter and exit the terminal Quickly to avoid congestion.

2. Passenger Flow: The terminal must be designed to accommodate a large number of passenger entering and existing at once

3. Maintenance and cleaning: Bus terminal need to be designed for easy maintenance and cleaning

4. Wealther: The design of the terminal must consider the climate an wealther condition of the area

5. Noise: The noise level in the terminal must be kept to a minimum to avoid disrupting nearby residents

1.8 SCOPE THE STUDY

The Scope of Bus terminal can also include other goal such as:

1. Creating a more pleasant and welcoming environment for passengers

2. Promoting the use of public transportation and reducing the number of cars on the road

3. Encouraging pedestrian-Friendly development in the surrounding area

4. Creating Space for socializing and community building

5. Providing economic opportunities for local business

6. Integrated the bus terminal into the surrounding neighborhood

    - By expanding the scope of Bus terminal to include these goal cities can create vibrant livable space that improve the quality of life.

CHAPTER TWO

2.0 LITERATURE REVIEW

BACKGROUND OF TRANSPORTATION

During the early stages of transportation it begin from the human era and continued to change, over a period of time. The first mean of transportation was the human foot. People used to walk large distance to reach places.

The first improvement made to this kind of transportation was adapting to different surface. For example, people living in areas with snow and ice wore spike-like attachment so that they didn't slip on the ground.

People knew that free and logs float on water and so they dug out the middle portion of logs to form a kind of seating. This helped people use water bodies as a means of transport Around **3500 BC,** the first wheeled vehicle were used. As a means of transporting small load, wheels were attached to carts and chariots. Around the same time constituting to transportation history, people developed simple logs into controllable river boats with oars to direct the vehicle.

3. From here people went on to tame animals like horse as a mean of transportation. Domesticating animals to use them as a mean of transporting people and small goods then started following a trend till this present moment.

- **TRANSPORTATION IN DEVELOPED COUNTRIES**

In the advanced countries, the problem of co-ordination and integrated development of a unified system of transportation has been developed into. In order to tacke these problems effectively they were carefully, dentified with much emphasis given to urban transportation problem, which is the big bottle neck's in many of these countries, they are as follows;

- The inter-relatinship between the development level of industries and transportation

- The relationship between various modes in the general transportation system
- Investigation of cost effectivences of capital investment in transport development from the view point of the national economy
- The classification of transport routes
- The principle of the formation and development of an integrated transport system including terminals.

- **TRANSPORTATION IN UNDERDEVELOPED COUNTRIES**

The issues with this continent is near to that of other parts of the developing countries or world. One of the cause of inadequate and shortage of facilities is lack of finance for rapid growth in development of infrastructures and not having a recognizable continuous system of either railway or highway network, the fact that adjacent systems are frequently of difficult track gauge, which makers interconnection more difficult and costly. Never the less in parts like North and South Africa, railways and road system have been greatly developed

- **URBAN TRANSPORTATION**

Urban transport system are major emitters of greenhouse gases (GHGS) and are essential to developing resilience to climate impacts. At the same time, cities need to move forward quickly to adopt a new paradiqm that ensure access to clean safe, and affordable mobility for all.

Though the variety of urban services required, indicate that source of urban issue go beyond inadequate transport facilities. One of these and the most obvious is shiffing population. There had been outward migration in developing countries. The new friends in either case have cause many domestic. Unemployment congestion

➢ QUALITIES OF TRANSPORT SERVICES

Individual nation requires a comprehensive and efficient transport system to move goods and people within its national boundaries for the transport of good, the services should have the qualities of speed safely adequacy frequency requlanity responsibility and acceptable cost. For the transport of people. The additional quality of compart is required. All these qualities are important to the user in determing what form or way of transportation in the transport of goods speed in transit has the following are that;

- People who suffer by long confinement have the time under stress reduced
- In business travels, the time saved reduced business cost
- In travel for pleasure, a greater amount of ground can be convined within the time available
- Proper ability to adapt to changing circumstances, such as traffic or weather condition to ensure smooth operation.

The transport facility must be Adhering to schedules and timelines, ensuring passengers and goods arrive at their destinations on time, and the movement at such time require a quantueen of facilities that required to handle traffic at other time of the year.

2.1 CASE STUDY

A case study in architecture is a architectural project to understand its design, construction, functionality, or contextual importance.

The specific architectural Qualities examined are to serve as inspiration or as a precedent for your architectural project.

A case study is a methodological research approach used to generate an in depth understanding of a contemporary issue or phenomenon in a bounded system. Case study research require in-depth investigation conducted into an individual, group or event to gain an understanding of a real life phenomenon. It is often used in the social science and humanities to explore complex issues and to provide insight into specific phenomena or situation.

A case study may involve multiple source of data such as interviews observation or document, the goal of case study research is to gain detailed and nuanced understanding of the case subject and generate new theories or insight.

A case study is one of the widely used and accepted mean of qualitative research methods in the social science (Bloomberg and Volpe, 2022).

TYPES OF CASE STUDIES

Case studies are typically defined by the intent of the case analysis;

1. (Single) Instrumental Case Study
2. Collective (Multiple) Case Study
3. Intrinsic Case Study

2.2 CASE STUDY ONE

- **Historical Background**: Ilorin was founded by the Yoruba Ilorin City Traditional Emirate throughout the 19th Century Ilorin served as a major trade centre between the Hausa 17 is classified as North- Central State due as of the 2006 Census. It had a population of 777667 making tit the 7th largest city by population in Nigeria.

- **Location:** YOUNG LEGACY A PLOT 122 UNITY ROAD ILORIN KWARA STATE NIGERIAN

- **Description:** it describes from Ilorin bases which link from Challenges around about link to Unity that is where the location is along the main road and it has been there for long term. Which is along Taiwo Road

- **Critics:** it not been design well but it well function which is regulatory use but to the structure is a low design of building.

- **The space unit include;**

    1. Entrance
    2. Reception
    3. Booking Area
    4. Secretary Office
    5. Chairman Office
    6. Parking Space
    7. Car Wash
    8. Vulcanizing Area
    9. Eatery

- **Merit**
    - It is well safe
    - Comfortable seat
    - More on less of capital
    - Serve as shelter

- **Demerit**
    - It is over crowding
    - Limited flexibility
    - It is not well clean
    - Lack of landscaping
    - Lack of enough toilet

2.3 CASE STUDY TWO

-Historical Background: Ojoo Bus Terminal located in Ibadan, Nigeria is a large bus Terminal that terminal that consist of a number of different Unit.

-Location: Ojoo Bus Terminal Ibadan, Oyo State.

-Bus Parking Area: The Terminal has multiple counter where passenger can purchase tickets for their journey.

-Passenger: waiting areas: the terminal has a number of different waiting area for passengers including seating area and food and beverage outlets

-Information desk: A staffed information desk is available

- **MERIT**

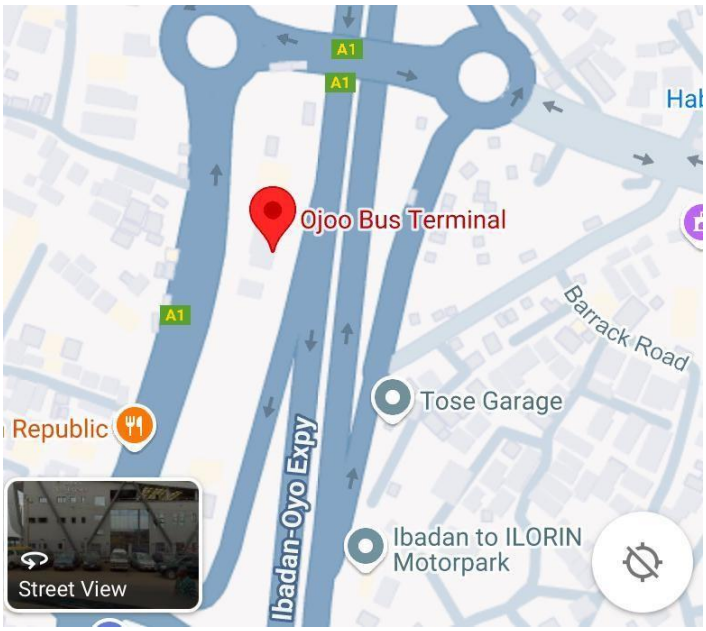
- It is comfortable
- Environment Sustainability
- Efficient transport
- It is complementary facilities
- Privacy

- **DEMERITS**

- Over Crowding
- It has poor sanitation
- Unreliable Schedule
- Conjuction
- Lack of adequate parking


Ojoo
Bus Terminal


Ojoo
Bus Terminal


A1
A1
Ojoo Bus Terminal
A1
Barrack Road
Tose Garage
Republic
Ibadan-Oyo Expy
Ibadan to ILORIN
Motorpark
Street View

2.4 CASE STUDY THREE

HISTORICAL BACKGROUND

Oshodi Lagos State is founded by the different language of set of people which is known as two throughout 19th Century lagos served as a major trade centre. Between the different language it is 24th largest city by population in Nigeria..

LOCATION: Oshodi Lagos State Nigeria the oshodi bus terminal in lagos Nigeria has several unit to provides for the need of travelers these include

- **Ticketing area:** This is where passenger can purchase ticket for the journey
- **Waiting area:** This is where passenger can wait for their bus the waiting area has seating and food and drink of luggage
- **Parking:** There is a parking area for buses and taxis
- **Information desk**
- **Security:** The terminal has security personnel to ensure the safety of passengers

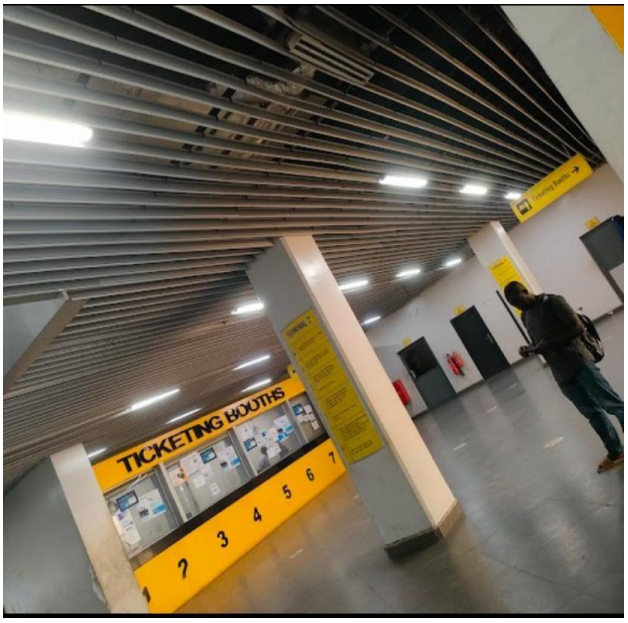
❖ **MERIT**

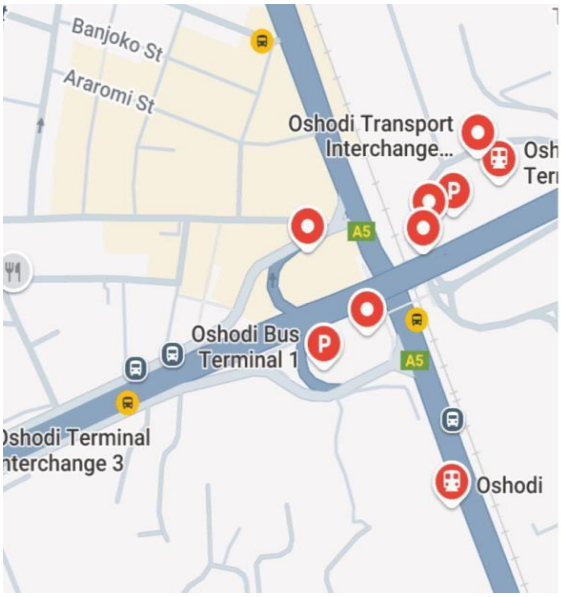
- It is convenience
- Varieties
- Comfort
- Safety
- Information

❖ **DEMERIT**

- Over Crowing
- Limited Parking
- Delay
- Unsanitary Condition
- Poor Signage


Terminal 3


TICKETING BOOTHS
7
3
4
5
6
7


Banjoko St
Araromi St
Oshodi Transport
Interchange...
A5
Oshodi Bus
Terminal 1
A5
Oshodi

2.5 ONLINE CASE STUDY FOUR

LOCATION UNION STATION BUS TERMINAL IN UNITED STATE

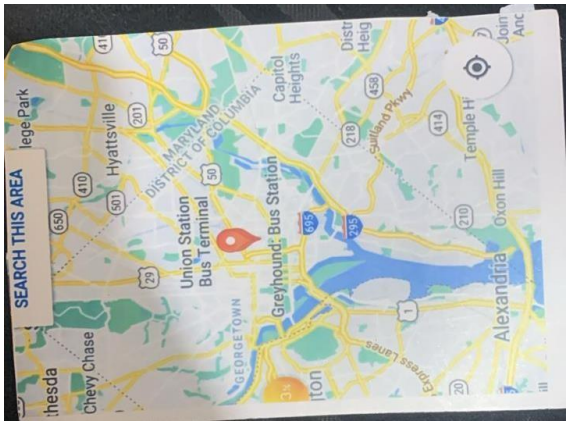
HISTORICAL BACKGROUND

GRETHOUND: Bus Station Owned by TSRTC Plat For's 150

The Bus Station was built during the Nizamera and was owned by the union station granted state railway and known as the central bus station it was built in the shape of a bus and was named Greyhound it is a southern part of Hyderabad of (US) it is unofficially known as the linlibun island on the monster and is Owned by the United State (Union Station) it is the third largest bus station in United State bus station in term of area occupying 20 acres (81,000m2) Followed after CHENNAI and Dechi

SERVICES

MGBS, mainly serves the telangana and ardhra Pradesh it also serves other neighboring state like clihattisgarsh Pradesh, Maharashtra and tamilnadu and arrive at this bus station daily.



2.6 GENERAL DEDUCTION

The General deduction provision generally allow you to deduct from your assessable income any loss or outgoing incurred in ganning or producing your assessable income or carrying on a business.

- Under the general deduction provision of Section 8-1 of the income Tax Assessment Act 1997 (ITAA 1997) or for eligible companies under the R&D, Provision in Section 355-450 (earlier year associate R&D expenditive) of the ITAA 1997)
- A private or domestic nature or
- Incurred in ganing exempt income

CHAPTER THREE

3.1 INTRODUCTION OF STUDY AREA

A Bus terminal site requires planning for significant bus and other veticular circulation within the terminal the requires development of a veticular in fracture in form of carriage ways driveways parking and bays (for different purpose) within the terminal complex

The Site is a existing site located at central part of the city in iloin: it is the property of the kwara state government located at the central part of ilorin city at post office with a satisfactory access for intra city buses the access to the site is on the road leading to “Challenge” and “Offa garage” on ward. It’s bound by a street on the other site

3.2 SITE LOCATION AND DESCRIPTION

The site is located in the central part of the city ilorin at post office Kwara State with two access road to the site. The site has some few existing structure in which some are functional and some are functional and some are not. It is easily accessible from the urban centres which enable an easy and smooth interchange from intercity the existing motor park has already generated a lot of business interest in the area that needs to be harnessed

3.3 SITE ANALYSIS AND SITE INVENTORY

SITE ANALYSIS

Sun rise in the east and set on the west the building unit that follows in that direction will be shaded from the sun to pass through the use of shading service

SOUTH WEST WIND

It occur from May to September the wind is warm excessive rainfall often turns dangerous in the junction there will be no building on the part on the site for comfort.\

NORTH EAST WIND

A cool and dry North east wind occur's from November to February less rain and humidity is low the sunshine is less threatening infrastructure will be more position on the part of the building

EXISTING BUILDING

Most of the existing building will be demolish while some like convinence (Toilet) will be retain

CAR PARKS

The car park will be turned into Bus Park and it will be rearrange for easy park and movement within the site.

ACCESS ROAD

"The access road will still be retained one of it will be used as major road and the other as exist road

SITE INVENTORY

EXISTING BUILDING

"There is presence of some building which include the admin, convenience, waiting Area pavilion, shops e.t.c On Site

CAR PARKS

Cars are also on the site for passenger to board

ACCESS ROAD

"They are two access road to the site to control the traffic within the terminal one of the road serve as major road while the other serve as escape.

ELECTRIC POLE

There is presence of electronic pole which helps to distribute light to the terminal

3.4 GEOGRAPHICAL & CLIMATIC DATA

- **Geography and Climate**

It has long been assumed that climate is largely controlled by location or geography in the sixth century be the Greek philosopher.

Pythagoras and the dominance variation of faith and the latitude in explaining climate variation (Sanderson 1999) Two centuries later. Aristotle expanded on Pythagoras foundation and introduced five climate zone ranging from tropical to northern rigid it is not coincidental that in the early 20th century German Scientist Keoppen also used 5 climate zone in his classification identified with the letter A-Z

i. Hemisphere- Which lead to warmer condition or in the tropies (23-55-235N) To wetter condition in either January (south or July (north)

ii. Latitude which affect

   a. The annual mean temperature

   b. The annual range

   c. The annual total rain fall (which is least around

iii. Elevation which affect

   d. The annual mean temperature

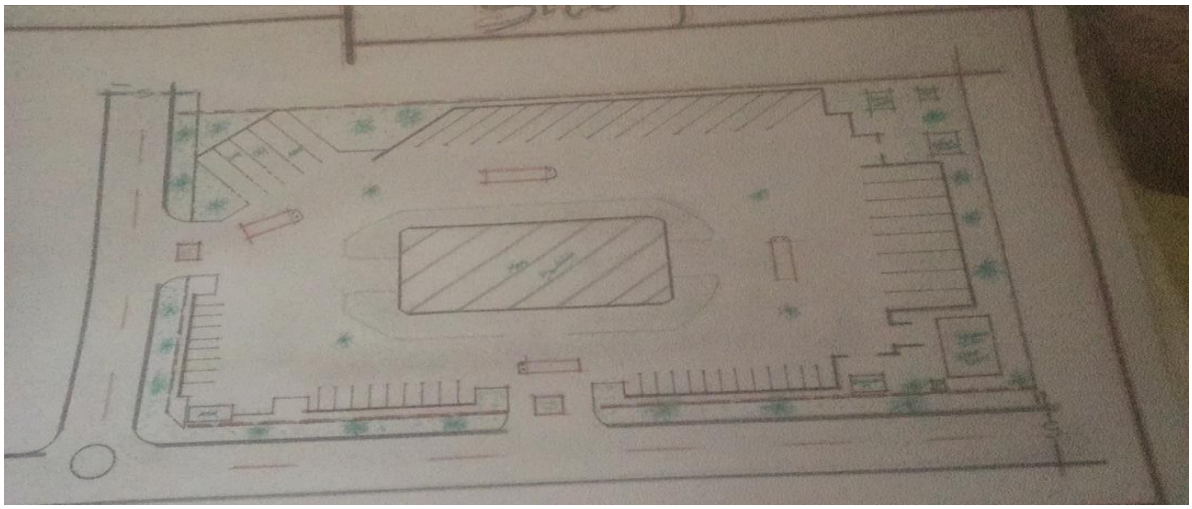
   e. Precipitation and

   f. The annual temperature

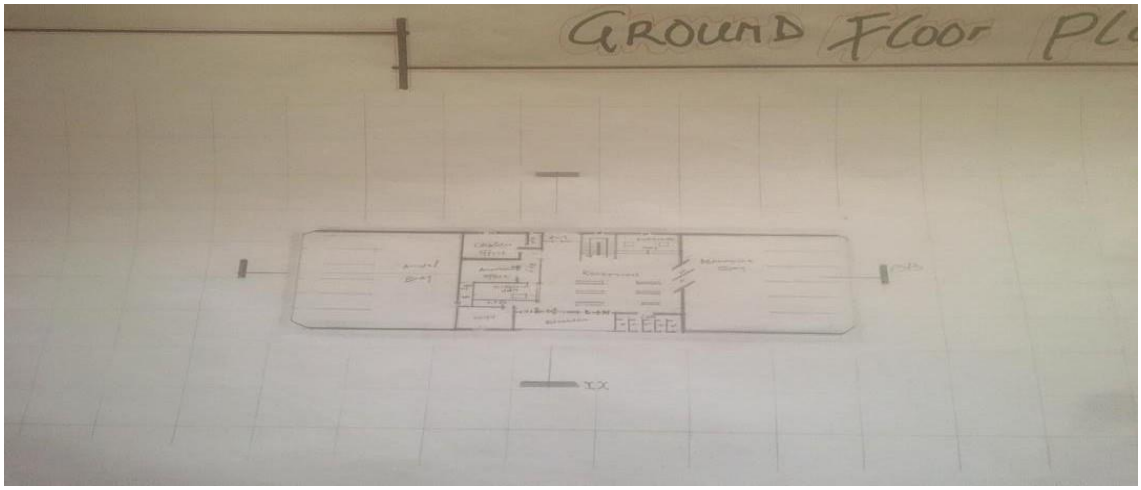
iv. Distance inland: the annual temperature range increase with the distance downwind of the coast and at all latitude but the equatorial belt

v. Upwind the Topography: an upwind mountain chain impliedrier conditions but also colder winter because of easy advection o polar air masses along the mountain chain.

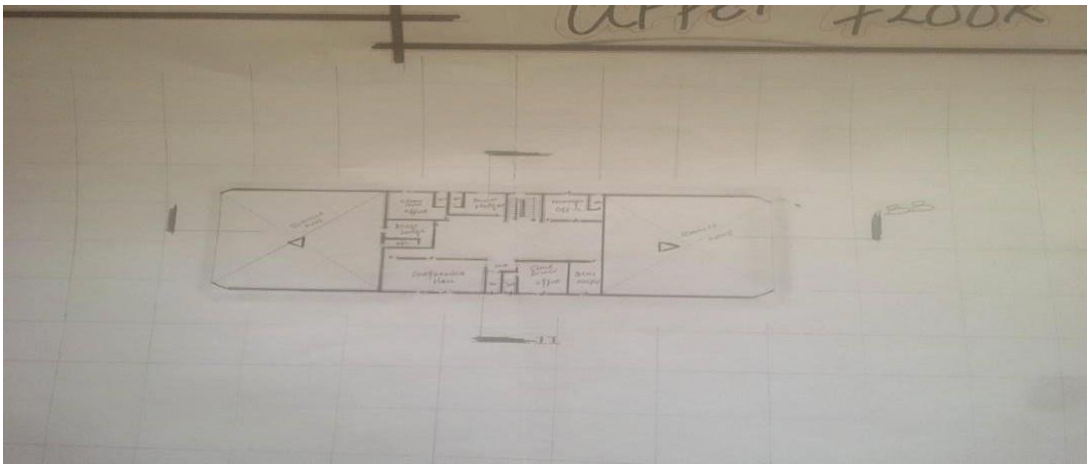
The annual mean temperature is given approximately by the average temperature of the maxim and minima for the warmest and coldest month i.e an average of four number.



SITE PLAN



GROUND FLOOR PLAN



FIRST FLOOR PLAN

CHAPTER FOUR

4.0 DESIGN CONSIDERATION/DESIGN CRITERIA

- **LOCATION**

The site is located at the central of the city with two roads in which one will serve a major road and the other as scape route

- **ACCESSIBILITY**

It's easily accessible from the urban center which evatizer an easy and smooth interchange from intercity to intercity

- **TOPOGRAPH**

The site scope gently toward the near and has a good bearing capacity for construction

- **SUSTAINABILITY**

The design will create a large term solution and help society to ensure the well being of their people and harmony with the environment

4.1 BRIEF ANALYSIS OF THE PROJECT

- the 3D model of the terminal must be prepared

- the model is prepared as per the plan and other details

- the elevation of model STAAD

- The study mainly focuses on the analysis of an assembly building i.e municipal Bus terminal.

- The document outline the design problem of designing a new bus terminal near Asa Dam River Water.

The brief analysis;

- Booking Area
- Site
- Plan
- Elevation
- Entrance
- Reception
- Tielentting
- Loading Bay
- Drop off
- Convinioуse
- Storage
- Driver lounge
- Manager's office
- Accountant room
- Chef driver office
- IT room

4.2 SCOPE ANALYSIS

The volume bus terminal facilities and the scope, with the aim of mastering the scope and extent of the impact accurately, the article firstly modified the bus station network and the bus.

- analyzing the efficiency of bases
- enough of parking space for people
- enough of seating area
- ticking are must be available

SCOPE OF PROJECT

- ticking area

- store

- manager office

- conference room

- CCTV

- changing room

- chairman office

- departure Bay

- Arrival bay

- Identifying project objectives

- defining project scope

- establishing boundaries

- identifying stakeholders

- breaking down structure

- defining project requirement

4.3 DESIGN CONSIDERATION

The key design considering for the building include the spacing location and design of Bus stop as well as the capacity of the platform and the availability of temporary parking or buses.

- Bus Stop

- Shelter need

- Parking Space

- Dispatch office

- Signage and Pole

- Available seating

- Integrating Universal design

- Future expansion

- Integration with natural

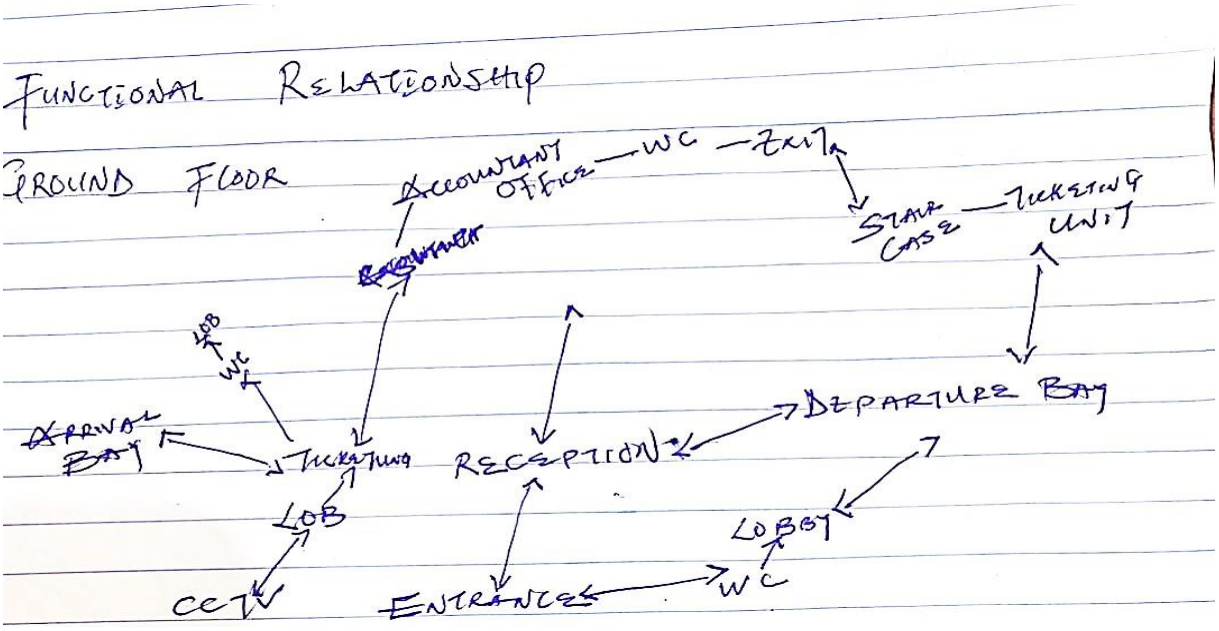
- Sustainability

4.4 SPATIAL ALLOCATION/SCHEDULE OF ACCOMMODATION

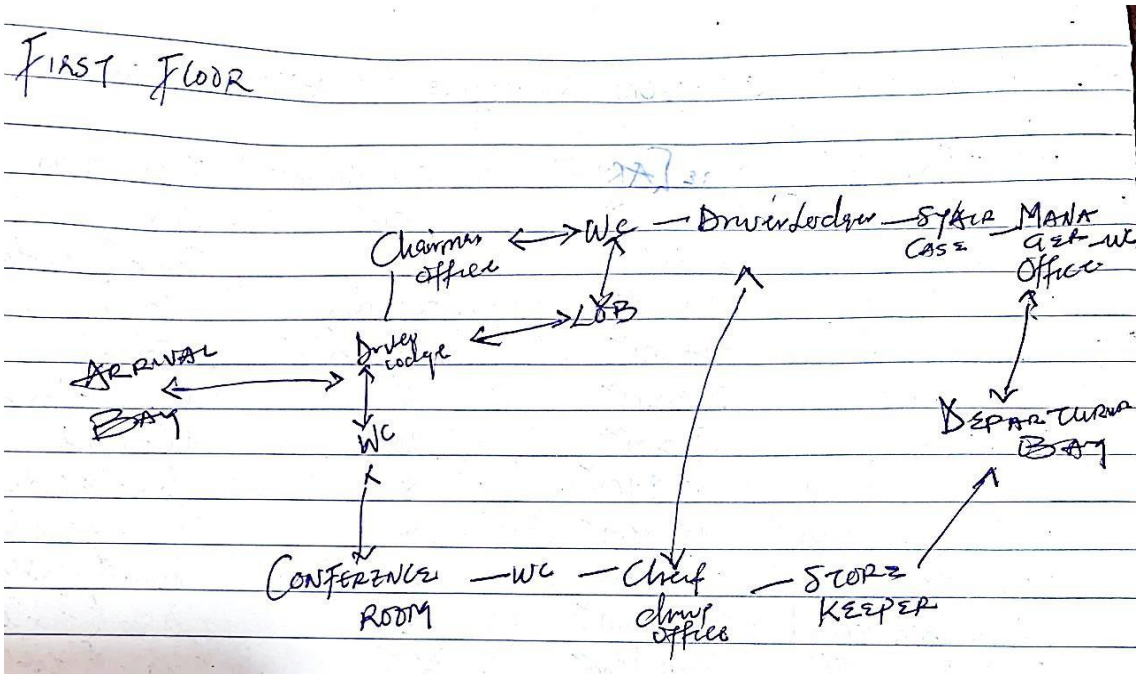
UNIT (SPACE)	SIZE (AREA)	NO OF OCCUPANT	FURNITURE
Reception	132.0m^2	20	Chairs
Ticketing	6.3m^2	3	Chairs & Table
Loading Bay	144.0m^2	3 Buses	Buses
Drop off	144.0m^2	3 Buses	Buses
Convenience	2.52m^2	6	WC, WH Base
Storage	9.2m^2	20	Wardrobe
Driver's Lounge	10.89m^2	8	Chairs & Table
Manager Office	10.8m^2	3	Chairs & Table
Accountant Office	11.8m^2	3	Chairs & Table
Conference Room	21.6m^2	12	Chairs & Table
Chief Driver Office	11.16m^2	3	Chairs & Table
IT Room	10.89m^2	3	Chairs & Table

4.5 FUNCTIONAL RELATIONSHIP

GROUND FLOOR



FIRST FLOOR



4.6 SPACE CALCULATION

SPACE	SIZE	AREA	COMMENT
Entrance	7 x 4m	=28m^2	raiser – 150m x thread 300
Reception	6.8 x 10m	=68m^2	Approx 40 Seater
Ticketing Unit	2.8m x 4.2m	=11.8m^2	
Lobby	900 x 2.1m	=1,890m^2	
CCTV	3m x 4m	=12m^2	
Accountant Office	3.9 x 4.8m	=18.7m^2	
Cashier Office	3.8m x 4.5m	=17.1m^2	
Stair Case	3.8m x 2.8m	=10.6m^2	
Driver Lounge	3.8m x 3.8m	=14m^2	
Conference Hall	4.5m x 7.5m	=33.7m^2	Left wing
Chairman Office	4.5m x 4.7m	=21.1m^2	
Manager Office	4.5m x 4.0m	=18m^2	
WC	1.2m x 1.5m	=1.8m^2	
Store Keeper	4.5m x 2.8m	=12.6m^2	
Departure Bay	12.9m x 13m	=16.8m^2	8 Buses Park
Arrival Bay	12.9m x 13m	=16.8m^2	8 Buses Park

Total Estimated Area = 219/m^2

4.7 SPACE ANALYSIS

Space (Unit) and the Equipment (Furniture) and Sizes

- **ENTRANCE**

- Decorative Shelve (0.6m x 2.1m)
- Flower Vase (1m x 1m)

- **DRIVER LOUNGE**

- Chair (0.6m x 1.8m)
- Table (1.2m x 1.2m)
- Flower Vase (1m x 1m)
- Decorative Shelve (0.6m x 2.1m)

- **CHANGING ROOM**

- Locker (0.6 x 0.75m)
- Table (0.6 x 1.5m)

- **TICKETING UNIT**

- Chair (0.6 x 0.75m)
- Table (1.2m x 1.5m)

- **CONVENIENCE**

- Water closet washing hand base
- Urine bow

- **RECEPTION (WAITING AREA)**

- Chair (0.6m x 2.4m)

- **MANAGER OFFICE**

- Chair (0.6 x 0.75m)
- Table (1.2 x 1.5m)
- Flower Vase (1m x 1m)
- Air Conditional (1.2m x 1m)

- **CHAIRMAN OFFICE**

- Chair (0.6 x 0.75m)
- Table (1.2 x 1.5m)
- Flower Vase (1m x 1m)
- Air Conditional (1.2m x 1m)

- **CONFERENCE HALL**

- Chair (0.6 x 0.75m)
- Table (1.2 x 2.5m)
- Flower Vase (1m x 1m)
- Air Conditional (1.2m x 1m)

- **ACCOUNTANT OFFICE**

- Chair (0.6 x 0.75m)
- Table (1.2 x 1.8m)
- Flower Vase (1m x 1m)
- Decorative Shelve (0.6m x 1.2m)
- Air Conditional (1.2m x 1m)

- **CASHIER OFFICE**

- Chair (0.6 x 0.75m)
- Table (1.2 x 1.8m)
- Flower Vase (1m x 1m)
- Decorative Shelve (0.6m x 1.2m)
- Air Conditional (1.2m x 1m)

- **CCTV ROOM**

- Chair (0.6 x 0.75m)
- Table (0.75m x 1.8m)
- Flower Vase (1m x 1m)
- Standing Fan (1.8m x 1.5m)

- **CHIEF DRIVER' OFFICE**

- Chair (0.6 x 0.75m)
- Table (1.2 x 1.8m)
- Flower Vase (1m x 1m)
- Decorative Shelve (0.6m x 1.2m)

CHAPTER FIVE

5.0 APPRAISAL OF PROPOSE SCHEME

Bus Terminal accessibility is very essential for a successful transportation system. It analysis the space of the bus terminal to determine the physical accessibility considering their connecting roads surrounding the bus stop.

I was able to control the traffic within the terminal through my design the space analysis connect bus stop accessibility and data of transport route bus stop coordinate bus stop.

Spacing and physical characteristics of bus stop the study concluded that before siting bus stop (loading bay) and (drop off) surrounding road network need to be considerate in order to make them accessible.

5.2 CONSTRUCTION METHOD AND MATERIALS

CONSTRUCTION METHOD

Bus Terminal are mega structure designed to hand l.e large volume of buses and passenger traffic the study analyzed the construction of bus terminal requirement a sizable plot of land in a prime location since and re-modifying and existing.

TEMPORARY WORK

All of all temporary work are responsibility of the contractor program of all temporary work should be submitted to and approved by is relevant agencies provided to commencement of actual implementation of the temporary works on site.

TEMPORARY FACILITIES

- Construction of access road
- Contractor’s office

- Testing room and equipment
- Utility service for construction which includes water supply electrical supply, telecommunication, toilet and sewerage.

TRAFFIC CONTROL MEASURES

In general the contractor should not hinder the existing traffic flows both vehicle and pedestrian by the construction activities without introducing any alternative flow.

FOUNDATION WORKS

It is assured that the foundation work will be time considering excavation and back filling for the improvement of soil should be studied to avoid the raining season.

SUPPER STRUCTURE WORKS

This has to do with laying of block and working out the window, doors, and other opening up to the other floors.

ROOF WORKS

The materials to be used for the roof are steel and poly carbonate sheet for covering to give a modern look to the terminal.

FINISHES, RENDERING AND PANEL

After the roof coverage the walls both the interior and exterior well be under and panel.

MATERIALS

Firstly the building structure of Bus Terminal is usually composite of metal and concrete in order to withstand the high weather condition of wind and rain they usually have fixed foundation structure such as square or circular frame which are made of stool and concrete.

EXTERIOR MATERIALS

The materials finishes for the exterior will be polystune for the window hood and door hood which gives an aesthetic finish look and also the exterior will be cladded using plastic cladding materials.

INTERIOR MATERIALS

The floor will be tile using a torrazo tile of different size for suffuse unit in the building the wall will be screed before painting and some plastic decoration and artifact will be included in the building to spark more about the design.

5.3 SERVICES

Building service are the system installed in the building to make them comfortable functional efficient and safe

FIRE SAFETY AND PRECAUTIONAL

Fire safety detection and protection building needs to be designed to provide an acceptable level of fire safety and minimize the risk from heat and smoke building service can pustuct a major lgn.tion risk

OPTICAL SMOKE ALARMS IONISATIONAL SMOKE ALARMS MULTISENOK ALARMS.

HEATING VENTILATIONAL AND ARE CONDITION (HVAC)

Maintaining internal air quality regulate internal temperature regulate internal humidity HVAC system can be centralized in a building or local to the space they are serving or a combination of both (for example local air handling units supplied by centrally generated cooling) they may also be connected to a wider district heating or cooling network

LIGHTING PROTECTION SYSTEM

A lighting protection system can protect a structure from damage caused by being struck by highting by providing a low resistance path ground for the lighting to follow and dispose.

WATER DRAINAGE AND PLUMBING

Drainage is the removal of surface and subsurface water sustainable urban drainage system are system designed to efficiently manage of surface water in the urban environment

5.4 PLUMBING SERVICES

Plumbing refer's to any systems that allows the movement of fluids typically involving pipes values plumbing fixtures tanks and other apparatus.

Plumbing system might to used for

- Heating and cooling
- Washier Removal
- Potable cold and hot water supply
- Water recovery and treatment system

5.5 FIRE PRECAUTION

ELECTRICAL SERVICES

This has to do with the electrical design and installation the legend the load chart/balancing and fuse arrangement the types of working system describe by this project is the concealed conduct system which employ P.V.C pipes and it accessories of various size P.V.C cables of various size and electrical fitting of various.

Types of the following and electrical installation of a building

- Lighting Point
- Switches
- Socket Outlet
- Hot water Heater
- P.V.C cable of required size
- Earthing system
- Accessories of the required types
- Distribution board of the required types
- Charge Over Switch
- Main control Gear Switch

The list above is just to give and idea of some basis electrical installation requirement for a building this requirement can be used for surface concealed conduct on truck wiring.

5.6 Building Requirement

A building construction requires the development and provision of a project including it technical civil and legal requirement they are classified according to the following:

- Their functionality
- Safety
- It habilitability

5.7 CONCLUSION

The major Architectural achievement of this project is the successful arrangement of traveler needs in a simple design arrangement that allows for easy flow of commuters and buses in and out of the building. It also eliminate the harzadous transport system currently experienced in the state caused primarily by lack of planning and organization.

In conclusion through relative analysis of case studies there is used to remodity the bus terminal to accommodate the facilities of the buses to operate effectively and efficiently.

5.8 RECOMMENDATION

As pointed out in the chosen site “THE SOLUDERO CAR PARK” which has been remodify and restructure into “Bus terminal” they should be a terminal authority charged with the day today running of the terminal as well as it maintenance should be constituted by the ministry of transport to oversee their operation.

The terminal facility will be used by all those that engage in intercity luxury” bus transportation in the state commuter’s (Passenger) should by given based on the schedule displayed in the terminal departure lounge the individual carner’s will also have their respretive office within the terminal building (driver lounge): it is also important to note that the designer of this project be involve by the government driving consideration to ensure construction as designed.

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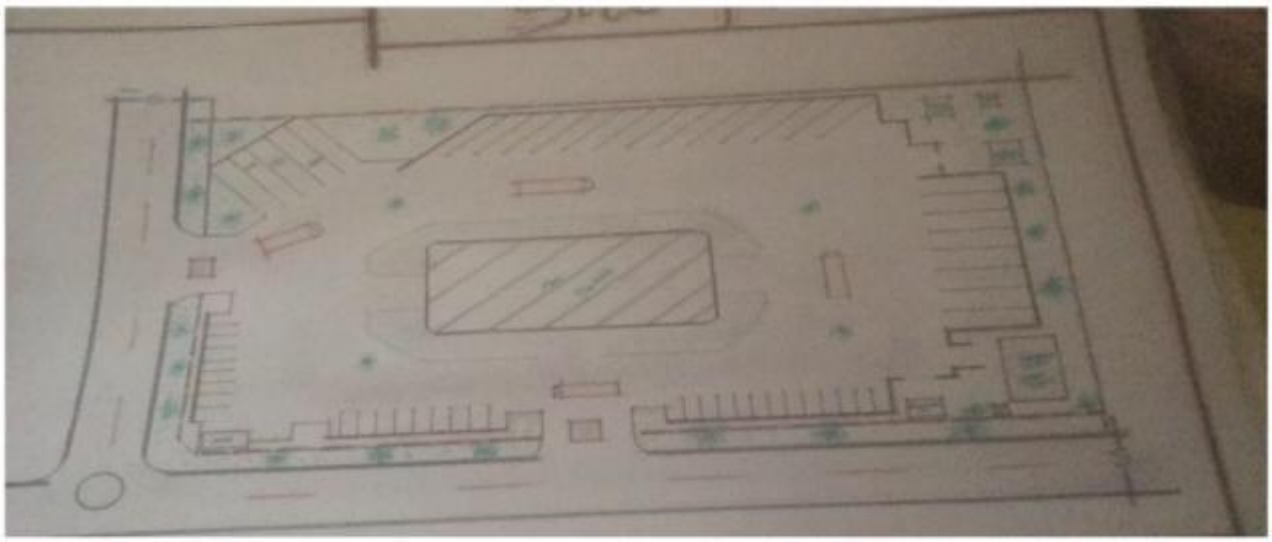
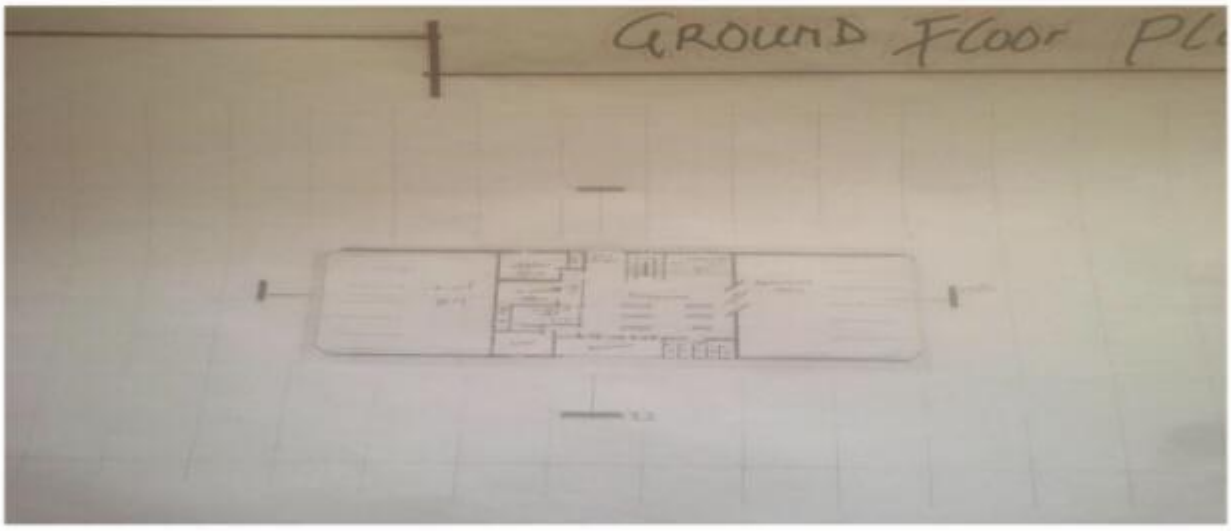


SITE PLAN



GROUND FLOOR PLAN