A PROJECT REPORT

ON

PROPOSED POULTRY FARM

FOR

ILORIN SOUTH LOCAL GOVERNMENT

AT

ZONE 'C' AYELABOWO OKOLOWO ILORIN, KWARA STATE

BY

ABDULGANEEY SULYMAN

ND/23/ARC/PT/0005

BEING A PROJECT SUBMITTED TO:
THE DEPARTMENT OF ARCHITECTURAL TECHNOLOGY
INSTITUTE OF ENVIRONMENTAL STUDIES
KWARA STATE POLYTECHNIC, ILORIN

IN PARTIAL FULFILMENTS OF THE REQUIREMENTS FOR AWARD OF NATIONAL DIPLOMA (ND) IN ARCHITECTURAL TECHNOLOGY

JULY, 2025

CERTIFICATION

I certify that this design project entitled POULTRY FARM was carried out by ABDULGANEEY SULYMAN under my supervisor and has been approved as meeting the requirements for the award of National Diploma (ND) in Architectural Technology Institute of environmental studies Kwara State Polytechnic Ilorin.

ARC. J.M TOMORI
PROJEECT SUPERVISOR — SIGNATURE AND DATE

ARC. OLAREWAJU F.A
PROJEECT COODINATOR — SIGNATURE AND DATE

ARC. J.M TOMORI
HEAD OF DEPARTMENT — SIGNATURE AND DATE

.....
EXTERNAL EXAMINER — .....
SIGNATURE AND DATE

DECLARATION

I **ABDULGANEEY SULYMAN** with matric no **ND/23/ARC/PT/0005** declare that this design project is a project of my personal efforts. It has not been presented for the award of any ND in any Polytechnic. The ideas, observations, comments, suggestions here in represent my own convictions, except quotations, which have been acknowledged in accordance with conventional academic traditions.

NAME: ABDULGANEEY SULYMAN **SIGNATURE_____**
MATRIC: ND/23/ARC/PT/0005 **DATE:_____**

This project is dedicated to the ALMIGHTY ALLAH for seeing me through the duration of this course, and to my Dear parents who at my early age create a deep desire in my heart to be educated.

ACKNOWLEDGEMENT

I give all praises to Almighty Allah for granting me the knowledge, wisdom and understanding, which I used in carrying out this design project and making it a successful

I want to thank my project supervisor in person of Arc J.M TOMORI, for her full support and knowledge impacted in me during my entire course of study. And my gratitude also goes to all our lecturers in ARCHITECTURAL DEPARTMENT for the countless support they rendered on the course of carrying out this design project and project report, May God bless you all abundantly (Amen).

My profound gratitude goes to my dear parents for their financial and moral support in making this project a success. I cannot but mention the effort of my amiable, humble and generous gently man, you deserve to be called a brother, I recognize the efforts of my course mate in person of SANUSI OLAMILEKAN, M.M, SAN and others thanks for your contribution towards the success of this project.

I salute the courage and support of amiable friends, mentors who stood by my side at time of challenges of this work, may ALLAHS bless you all.

TABLE OF CONTENT

CHAPTER FOUR

CHAPTER FIVE

LIST OF TABLES

LIST OF FIGURES

LIST OF PLATES

LIST OF APPENDICES

ABSTRACT

The main purpose of this project work is to design a standard and aesthetic poultry farm. This study investigated the Economic Profitability of Poultry Production in Kwara State. To analyses this, an econometric method of multiple regression model was adopted, data were collected Kwara State based on the hypothesis formulated for this design. From the result of the work, I found that Economic Profitability of Poultry Production in Kwara State is concerned with the presentation of standard and the interpretation of data collected during the case study of the project. The major problems of Economic Profitability of Poultry Production in Kwara State is the wide spread hunger and malnutrition are evident in the country. Poultry meat and egg offer considerable potential for bridging the nutritional gap in view of the fact that high yielding exotic poultry are easily adaptable to our environment and the technology of production is relatively simple with returns on investment appreciably high. Animal scientists, economists and policy makers are of the opinion that the development of the livestock industry is the only option for bridging the protein deficiency gap in Nigeria's diets.

CHAPTER ONE

1.0 INTRODUCTION

1.1 HISTORICAL BACKGROUND

Poultry is a sub-sector in the livestock industry constituting a major component of the agricultural economy. The sector provides animal protein to the populace as well as employment for a considerable percentage of the population. According to FAO Report (2010) poultry comes fourth among sources of animal proteins for human consumption in Nigeria and contributes about 10% of the national meat production. Poultry business is attractive because birds are able to adapt easily, have high economic value - rapid generation time and - a high rate of productivity that can result in the production of meat within eight weeks and first egg within eighteen weeks of the first chick being hatched.

One of the major challenges facing most developing countries is the satisfaction of the ever increasing demand for calories and protein. Most African diets [Nigeria inclusive] are deficient in animal protein which result in poor and stunted growth as well as increase in spread of diseases and consequently death (Yusuf and Malomo 2007)

Animal protein sources include fish, egg, poultry meat, beef, milk, beacon, pork and mutton. They are delicious but not readily affordable. The common sources accessible to Nigeria populace are frozen fish, beef and poultry products [egg and meet]. Most farmers produce poultry especially in Kwara state Nigeria, however, the level of the productivity still remain local and small- scale.

Okoli et al., (2004) revealed that 85% of rural families keep small ruminants and local fowls primarily as an investment and sources of manure or meat at home or for use during festivals. In spite of this, livestock production is still not keeping pace with the protein requirements of the rapidly increasing Nigeria population. Demand is more than supply. Since the responsibility of any civilized government is to provide adequate food and assure an atmosphere free from hunger and malnutrition, the Federal Government of Nigeria placed a ban on importation of frozen chicken and turkey parts to encourage massive poultry production locally [Agricultural Transformation Agenda 2012]. This policy has encouraged many investments in poultry

production in Nigeria. It has therefore, becomes a full time job for many and is considered to be a commercially viable enterprise considering poultry production as a commercially viable business, the knowledge of farm management demands economic measurement of profitability of such venture with the utmost aim of guiding the farmers in the appropriate use of resources/combination to maximize profit and encourage potential entrants to increase output and bridge the gap between national demand and supply of animal protein. This study is therefore analyzing the economics of poultry production in Kwara state

1.2 PROJECT DEFINITION

The term "poultry" in agriculture generally applies to a wide variety of birds of several species including chicken, guinea fowls, pigeons, ducks, geese, turkey, swans, peafowl, ostriches, pheasants, quails and other game birds kept for eggs or meat production (Alders, Robyn).

1.3 STATEMENT OF THE DESIGN PROBLEM

In Nigeria, livestock production has not been able to keep pace with the animal protein demand. Nigeria is presently unable to meet this requirement. The animal protein consumption in Nigeria is15gm per person per day (Tijjani et al., 2012) which is a far cry from the FAO recommendation. As a result of the above, wide spread hunger and malnutrition are evident in the country. Poultry meat and egg offer considerable potential for bridging the nutritional gap in view of the fact that high yielding exotic poultry are easily adaptable to our environment and the technology of production is relatively simple with returns on investment appreciably high. Animal scientists, economists and policy makers are of the opinion that the development of the livestock industry is the only option for bridging the protein deficiency gap in Nigeria's diets. The need to meet animal protein requirements from domestic sources demands intensification of production of meat and eggs derived from prolific animals like poultry birds. Apart from been a major source of protein in the country, poultry production has also been recognized as one of the quickest ways for a rapid generation of income.

1.4 AIM AND OBJECTIVES

1.4.1 AIM

The aim of this project is to design a well-balanced and functional poultry farm for ilorin west local government that will enhance by providing poultry production which will be affordable for all classes of earners.

1.4.2 OBJECTIVES

1. Proper orientation of the structures would be addressed to achieve maximum comfort for the users.
2. Effective site planning would be enhanced such that traffic flows to ease activities within the poultry farm.
3. Provision of amenities and facilities, essential services that are vital in poultry farm would be considered.
4. identify the factor contributing to poultry production in the study area

1.5 JUSTIFICATION

Poultry farm is commonly practiced on most farms but the profitability of such venture is questionable. This study is out to investigate the cost and returns to poultry production to enable farmer to see the advantages that poultry offers as a means of making money.

This research also aims to encourage anyone who is interested in poultry production. It result will not only show the lines likely to be most profitable, It will also point out those branches of the business not likely to be remunerative, except under special conditions.

Poverty reduction is one of the Nigeria's policy challenges inhibiting the overall development of the country's economy. Intensification of poultry production which has been recognized as one of the quickest ways for a rapid generation of income will go a long way to solve the problem.

1.6 SCOPE OF THE STUDY

Scope can be defined as the range of observation. The scope of this study project will encompass the use of design strategies to plan a poultry farm.

1. **Admin block**
2. **Poultry cage**
3. **Hatching room**

4. **Feed mill**
5. **Feed mill store**
6. **Egg store**
7. **Parking space**
8. **Security post**
9. **Mosque**

1.7 LIMITATION OF THE STUDY

During the course of the research, many challenges are faced the major problem encountered was in the collection of data from target population due to the rumor of bird fluid disease the respondents were reluctant and do not want to be visited in their farm. The farmers do not allow farm visit which would have made the collection of data to be easy, methods like distribution of questionnaire to respondents and waiting for many days for reply was employ and also distribution through corporative society etc.

1.8 RESEARCH METHODOLOGY

As a way of achieving the objectives of the research, different to the method used for the research these are;

ORAL INTERVIEW: Individual interview was carried out randomly with member of the poultry farm

CASE STUDY: As the name implies involves a study of an existing structure that are similar to the proposed project.

LITERATURE REVIEW: Relevant textbooks, lecture notes, magazines, journals and pdf notes.

SITE VISITATION: In the research all the mentioned above would not have meaning if the site were not visited so the site visitation confirmed all that is necessary to be adopted in the design.

CHAPTER TWO

2.0 LITERATURE REVIEW

(Beutler, A. 2007), defined poultry production as an aspect of agriculture that generally deals with rearing of birds for meat and egg production; Turkeys, Chickens, Geese, Pigeons, Ostrich etc are different kinds of poultry. But Nigerian local poultry farmers are mostly interested in chicken. This aspect of agriculture is an attractive business which provides huge income throughout the year and generates quick and continues return.

Poultry production plays a major role in food security for the rapidly growing human population. It is a high economic activity in Nigeria′s moral communities.

(Dolberg, F. 2008) refereed to poultry production as all species that render economics service to man.This service includes: provision of poultry meat, eggs and feathers Narahari (2002) said that modern fowl probably originated from four wild species namely: Gallus gallous; Gallus lafayeter; Gallus sonnerati; Gallus various and their origin is tropical and this account for the comparative ease with which modern breed can be introduced or transferred to any tropical country.

2.1 REVIEW OF RELEVANT LITERATURE ON BUILDING TYPE

The term “poultry” in agriculture generally applies to a wide variety of birds of several species including chicken, guinea fowls, pigeons, ducks, geese, turkey, swans, peafowl, ostriches, pheasants, quails and other game birds kept for eggs or meat production (Alders, Robyn). Chicken (Gallus domesticus) is the most common poultry dominating the small holder poultry production systems of Africa hence, it is sometimes considered synonymous with poultry. The domestic fowls (chickens) belong to the order “Galli” it originated in the tropical countries of the world, therefore birds from any country in the world can be easily introduced to the tropics with little difficulty of adaptation (Mgbakor Miriam Ngozi and E. Nzeadachie Chinonso 2013).

Commercial hybrids (layers and broilers) all over the world are being propagated for production of eggs and meat. The hybrid layers usually start laying, at about 20 weeks of age and peak egg production is attained during the first production cycle. The average production rate of commercial layers usually remains very close to 0.9 eggs per day (Ashagidigbi et al., (2011)).

However, as the age increases, their egg production decreases. This situation is further

aggravated during the second production cycle. Appetitive behaviour of hens is also affected during the later stage of production age. The climatic conditions have also been known to affect the production behaviour of the laying hens (Ashagidigbi, W.M, S.A. Sulaiman and A. Adesiyan (2011)). In areas where climate is hot and humid, commercial hybrids produce an average of 180 200 eggs per year, while in more temperate climate, birds can produce between 250 and 300 eggs per year. The production cycle of eggs may also be influenced by many other factors such as breed, mortality rate, body weight, laying house lightening schedule, feed and culling (Spielman, D.J. & Pandya-Lorch, R. 2009.).

After one year of production, layers are culled and used for meat purpose without exploiting their full inherent potential, which can be exploited up to second production cycle (Spielman, D.J. & Pandya-Lorch, R. 2009). The factors like diseases and market rates usually reflect a miserable picture of annual flock replacement while rearing new pullets for profitable egg production.

Moreover, keeping aged hens as such is uneconomical because of gradual decline in egg production with more erratic clutch cycles and poor feed efficiency in the relatively heavy layers. Therefore, pullets and spent layers must be managed effectively and efficiently in order to get maximum output and profitability (Beutler, 2007). However, very little research work has been conducted under local climatic conditions in Pakistan to exploit the production potential of spent layers. Over the years there have however been human interventions on the natural habitat through domestication and research which have resulted with different management systems. This manipulation on the natural habitat is simply as a result of rise in the standard of living of Nigerians, which consequently makes the call for high demand for eggs and poultry-meat become substantial because most people cannot raise their own poultry. Essentially there are three (3) main prevailing management systems in Nigeria. The term “poultry” in agriculture generally applies to a wide variety of birds of several species including chicken, guinea fowls, pigeons, ducks, geese, turkey, swans, peafowl, ostriches, pheasants, quails and other game birds kept for eggs or meat production (Binuomote et al., (2008).

2.2 REVIEW OF LITERATURE ON THE SUB-TOPIC OF THE THESIS POULTRY FARM; AN EFFECTIVE DEVELOPMENT TOOL, POULTRY MANAGEMENT

HOUSING MANAGEMENT

Improvements to poultry housing systems in developing countries have focused on providing an environment that satisfies the birds' thermal requirements. Newly hatched birds have a poor ability to control body temperature, and require some form of supplementary heating, particularly in the first few days after hatch. Many developing countries are located in tropical areas where minimal heating is required. Indeed, the emphasis in these countries – particularly for meat chickens – is on keeping the birds cool. (Bell and Weaver, 2001)

HEALTH MANAGEMENT

Health programmes are planned and implemented with an emphasis on preventive measures in accordance with veterinary recommendations, and it may include but is not limited to vaccination, parasite control, medication, vermin control, hygiene, health status sampling, and bio security. Health problem are diagnosed with reference to all symptoms and signs, and checked against specialist advice where doubt exists. (Bell and Weaver, 2001) Litter materials and management Broiler litter is the material used as bedding in poultry houses to absorb faucal waste from birds and to make the floor of the house easy to manage. Common litter materials are wood-shavings, chopped straw, sawdust, shredded paper and rice hulls, and a wide range of other materials are used in different regions around the world. Litter should be light, friable, non-compressible, absorbent, quick to dry, of low thermal conductivity and – very important – cheap. After use, the litter comprises poultry manure, the original litter material, feathers and spilled feed. The litter quality in a shed is determined by the type of diet, the temperature and the humidity. The recommended depth for litter is between 10 and 20 cm. Sawdust can result in high dust levels and respiratory problems. Dust particles in the litter capable of causing health problems in the birds are derived from dried fasces, feathers, skin and litter; their adverse effects arise because they carry or incorporate bacteria, fungi and gases. (Bell and Weaver, 2001)

MANAGEMENT OF LIGHTING

Poultry have seasonal and daily biological rhythms, both of which are mediated by light, particularly day length. For day length to exert its controlling effect, there needs to be a dark phase (night) when light levels should be less than 0.5 lux. Day length and light intensity

during the breeder bird's life have an important role in development of the reproductive system. The difference in day lengths and light intensities between the rearing and the laying phases is the principal factor responsible for controlling and stimulating ovarian and testicular development (Lewis and Morris, 2006). The response to increases in day length and lighting intensity depends on the body weight profile during rearing, which in turn depend on the nutritional regime. The effects of light are predominantly on the rate of sexual maturation and egg production.

The two types of artificial lighting commonly provided are incandescent and fluorescent. Incandescent globes are cheaper to install, but have lower light efficiency and a shorter life. Fluorescent lights are three to four times as efficient and last about ten times as long, but have variable performance in cold weather. The colour of the light rays has an effect on chickens' productivity. For example, green and blue lights improve growth, and lower age at sexual maturity, while red, orange and yellow lights increase age at sexual maturity, and red and orange lights stimulate egg production. Birds are calmer in blue light, so blue lights are recommended for use during depopulation in commercial operations. (Lewis and Morris, 2006)

Lighting programmes for broilers: Lighting programmes for commercial broiler operations vary widely from company to company, and depend on the strain of bird used, the housing type (naturally ventilated versus controlled-environment), the geographical location and the season. Where light can be excluded from sheds, birds are typically reared under low-intensity (5 to 10 lux) lighting, to keep them calm and to prevent feather pecking. During early brooding, 25 lux is used to stimulate feeding. (Lewis and Morris, 2006)

Lighting programmes for layers and breeders: Light is critical for the onset and maintenance of egg production. Increasing day length (from winter to summer) during the rearing period stimulates the onset of sexual maturity, whereas shortening day length (from summer to winter) has the opposite effect. Early onset of lay may not be beneficial as it may predispose to reproductive problems. Where artificial lighting is possible, a constant day length (of between 12 to 16 hours per day) during the rearing period has been shown to result in a delayed onset of lay, and is the preferred rearing treatment. Shortening day length or too little light will discourage egg production, and must be avoided once the birds are in lay. (Lewis and Morris,

2006)

VENTILATION MANAGEMENT

All poultry houses need some form of ventilation to ensure an adequate supply of oxygen, while removing carbon dioxide, other waste gases and dust. In commercial operations, minimum ventilation is often practised in colder climates, but not generally in tropical ones (Glatz and Bolla, 2004). In large-scale automated operations, correct air distribution can be achieved using a negative pressure ventilation system. When chicks are very young, or in colder climates, the air from the inlets should be directed towards the roof, to mix with the warm air there and circulate throughout the shed. With older birds and in warmer temperatures, the incoming air is directed down towards the birds, and helps to keep them cool. Evaporative cooling pads can be placed in the air inlets to keep birds cool in hot weather. Tunnel ventilation is the most effective ventilation system for large houses in hot weather. Tunnel ventilation: These systems are popular in hot climates. Exhaust fans are placed at one end of the house or in the middle of the shed, and air is drawn through the length of the house, removing heat, moisture and dust. Evaporative cooling pads are located at the air inlets. The energy released during evaporation reduces the air temperature, and the resulting airflow creates a cooling effect, which can reduce the shed temperature by 10 °C or more, depending on humidity. Maximum evaporation is achieved when water pumps are set to provide enough pad moisture to ensure optimum water evaporation. If too much water is added to the pads, it is likely to lead to higher relative humidity and temperatures in the shed.

Poultry production represents a very large and diverse. There are many facets of production, and hence many areas that are potential concern for the welfare of the animals involved. These areas may include, among others, housing of laying hens, beak trimming, toe clipping, spent hen disposal, molting of laying hens, feed restriction, lighting programs, growth rates and resulting effects of chicken and turkey broilers, transportation, pre-slaughter management, slaughter, and handling (Ismat et al., (2009)). While research is actively being conducted in methods to improve welfare in most if not all of these areas, recommendations for present management schemes is to have producers ensure they are making the most of the research that has already been completed, using the best management practices that are possible.

2.3.0 PROBLEM FACING POULTRY PRODUCTION AND POSSIBLE SOLUTIONS

2.3.1 SITE EFFECTS ON POULTRY PRODUCTION

The type and intensity of poultry production and its development opportunities largely depend on site effects. Site effects are expressed through the importance of seasonal differences, the interactions between poultry and crop production, and the access to services and markets. Seasonal factors such as the differences between dry and wet seasons or winter and summer influence the availability of feed resources, the occurrence of diseases and the need for housing. The distance of the producer from market affects the availability of inputs and services for production and the opportunities and ways of selling products. This is expressed in the relative importance accorded to poultry production for either food security or income generation. (Alders, R.G. & Pym, R.A.E. 2009)

CHAPTER THREE

3.0 CASE STUDIES

CASE STUDY ONE: AT, OKE FOMON ILORIN KWARA STATE.

CASE STUDY TWO: AT, ILEMONA OFFA, KWARA STATE.

CASE STUDY THREE: AT, TUNS POULTRY FARM, IKIRUN, OSUN STATE.

3.1 CASE STUDY ONE: AT, OKE FOMON ILORIN, KWARA STATE.

MERITS

It is easily accessible

There is provision for security post

Adequate provision of ventilation

DEMERITS

There is no provision for social amenities

Poor landscaping

Lack drainage facilities.

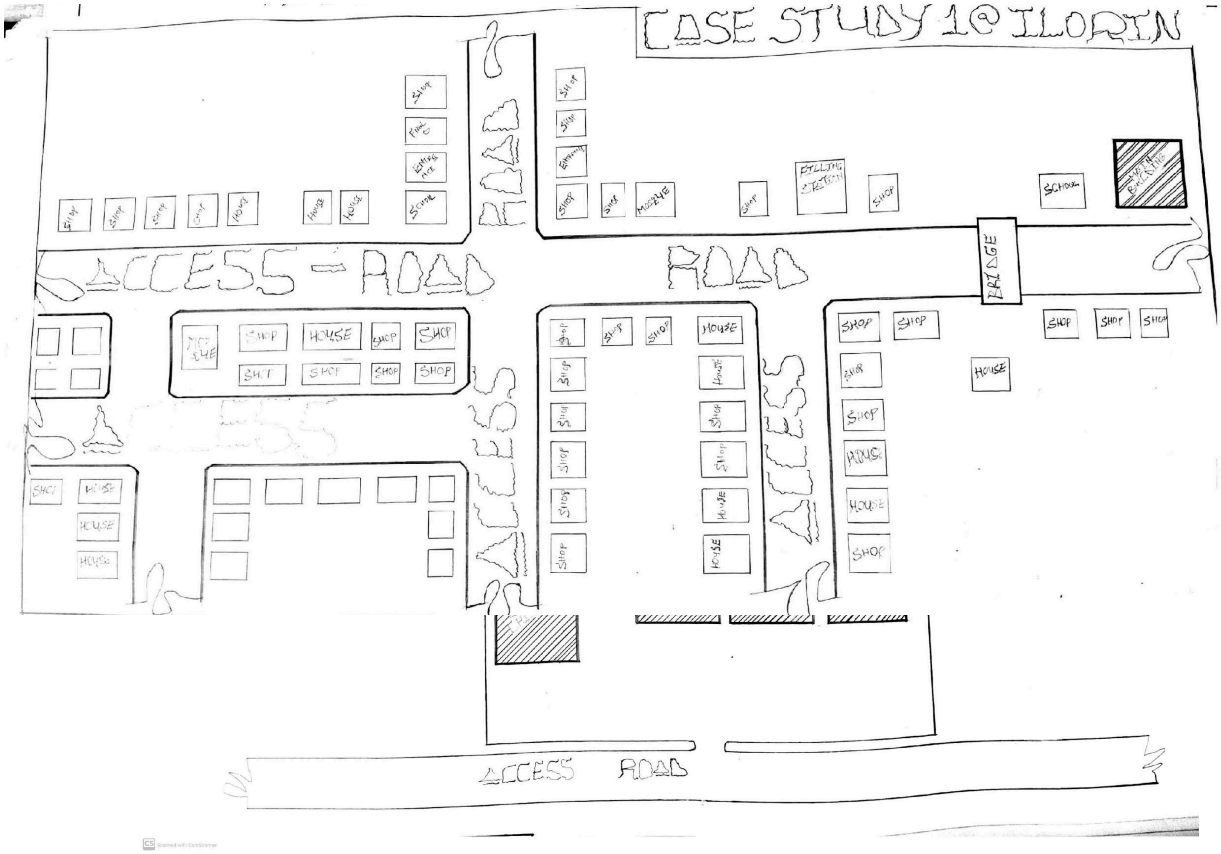


FIG 3.1.2: SHOWING THE SITE PLAN OF CASE STUDY ONE

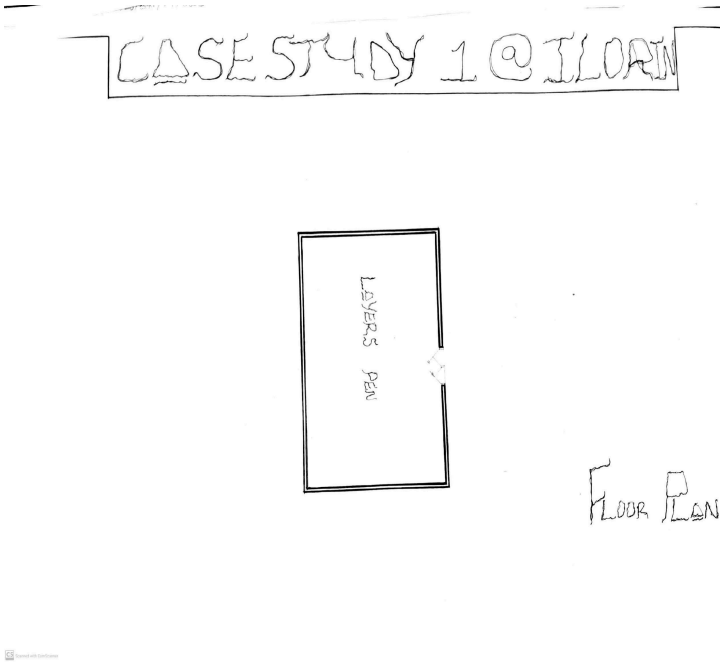


FIG3.1.3: SHOWING THE FLOOR PLAN OF CASE STUDY ONE

PLATE3.1.1: SHOWING APPROACH VIEW OF CASE STUDY ONE

PLATE3.1.2: SHOWING SIDE VIEW OF CASE STUDY ONE

PLATE3.1.3: SHOWING INNER VIEW OF CASE STUDY ONE

3.2. CASE STUDY TWO: AT, ILEMONA, OFFA KWARA STATE

MERITS OF CASE STUDY TWO

- Easily to locate and access
- There is provision of security post
- Provision of security post

DEMERITS OF CASE STUDY TWO

- Lack of social amenities
- No recreational facilities
- It is not aesthetically balanced

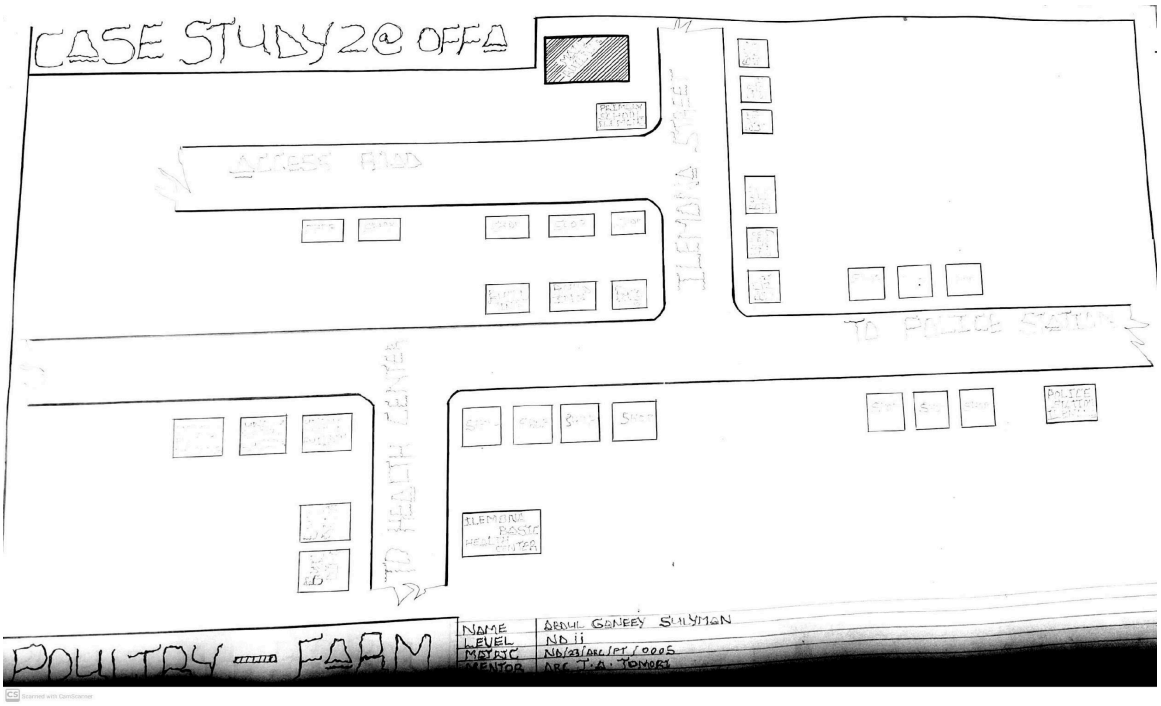


FIG3.2.1: SHOWING THE LOCATION PLAN OF CASE STUDY TWO

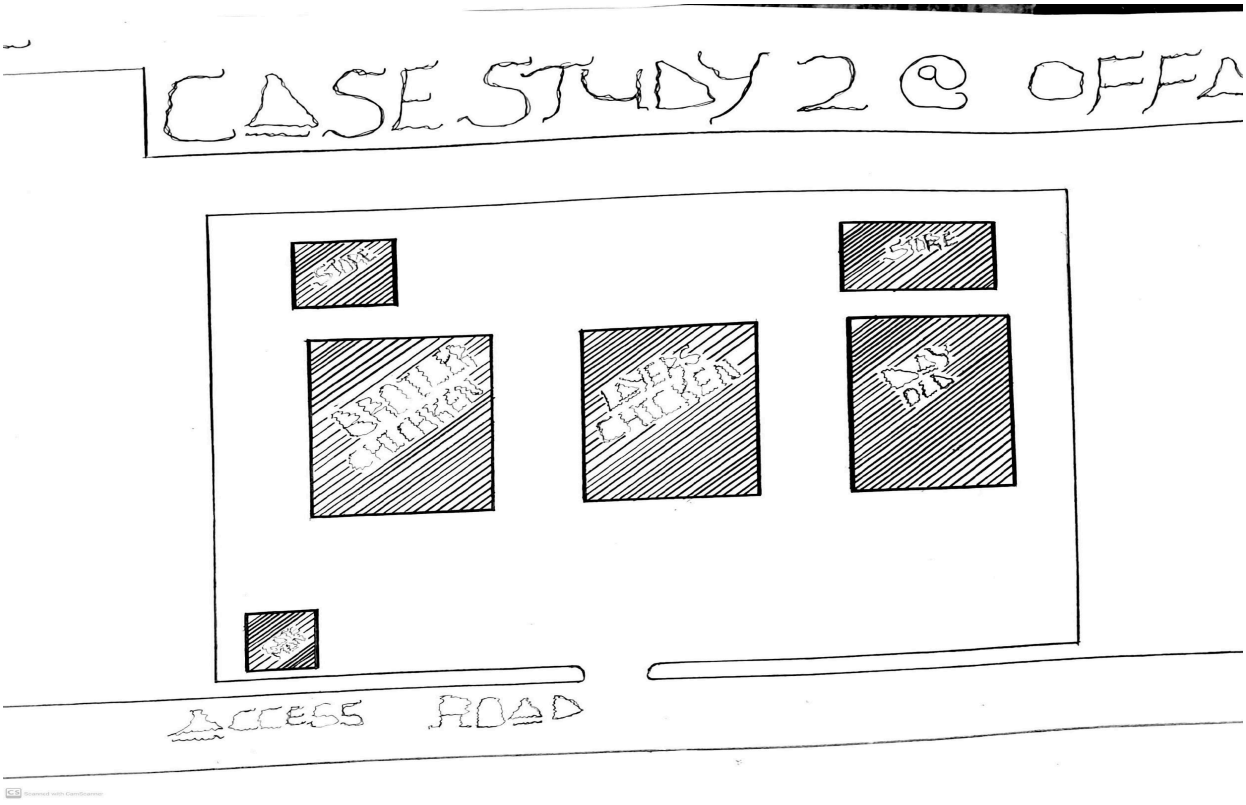
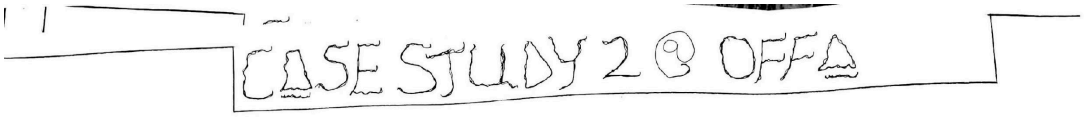


FIG3.2.2: SHOWING THE SITE PLAN OF CASE STUDY TWO



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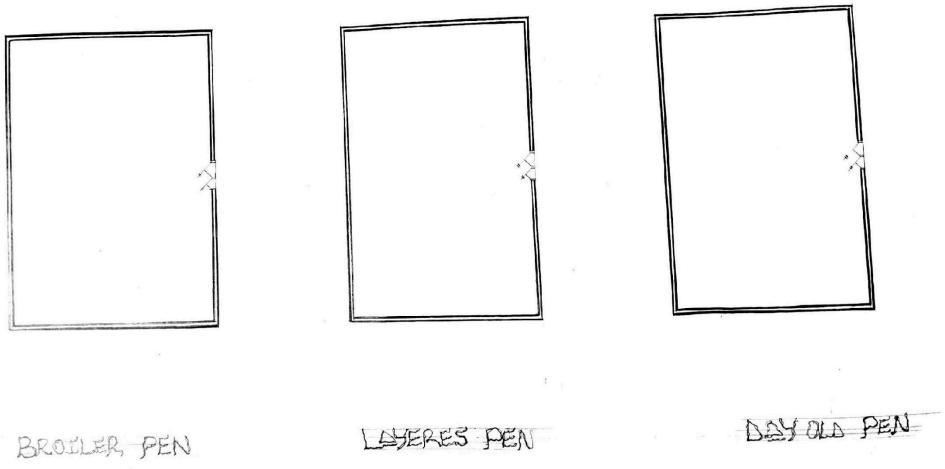


PLATE 3.2.1: SHOWING APPROACH VIEW OF CASE STUDY TWO

PLATE 3.2.2. SHOWING ALEFT VIEW OF CASE STUDY TWO

PLATE3.2.3: SHOWING INTERNAL VIEW OF CASE STUDY TWO

3.3. CASE STUDY THREE: AT, TUNS POULTRY FARM, IKIRUN, OSUN STATE.

MERITS OF CASE STUDY THREE

- It is well built for residential accommodation
- It is well ventilated and oriented
- It is aesthetically balanced
- Availability of drainage facilities

DEMERITS OF CASE STUDY THREE

- Poor landscape
- Lack of some social amenities
- Not easy to locate

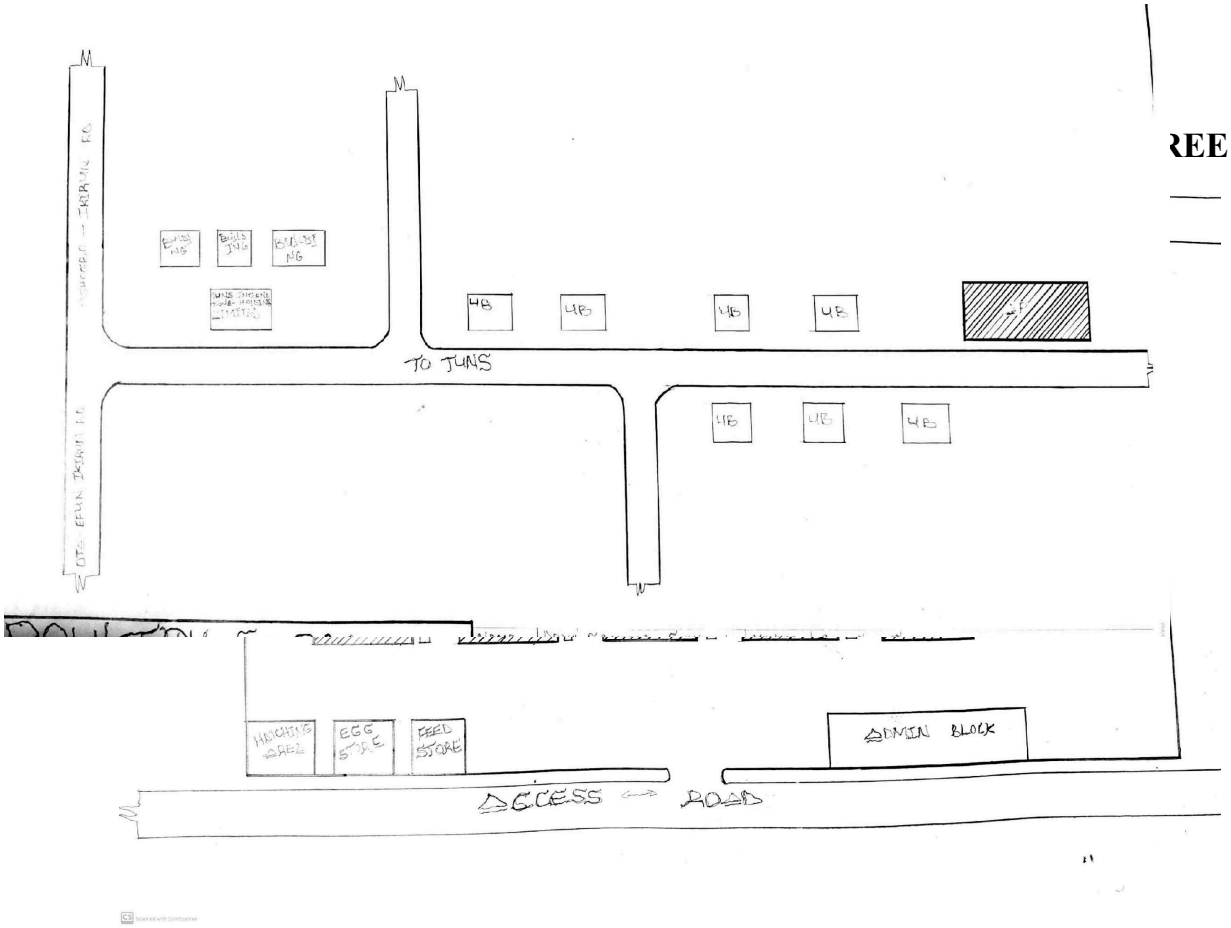


FIG3.3.2: SHOWING THE LOCATION PLAN OF CASE STUDY THREE

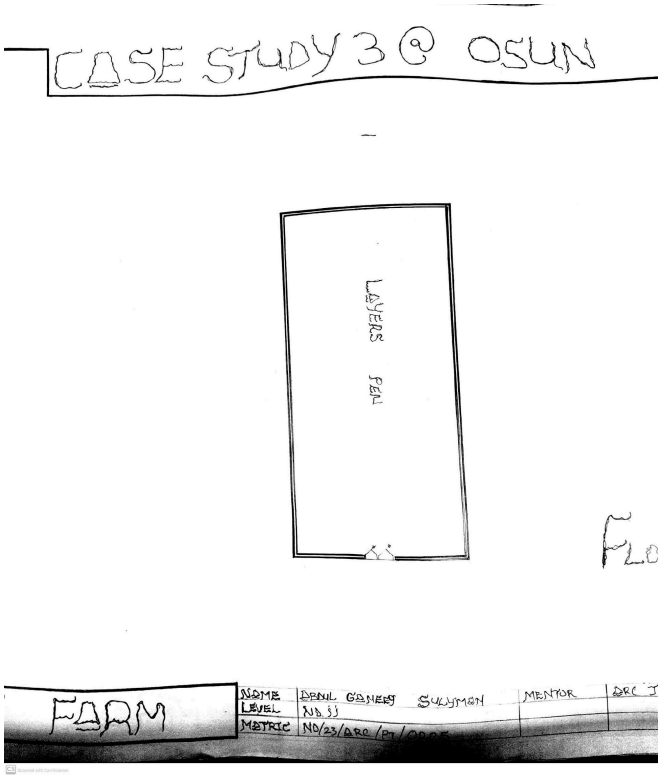


FIG3.3.3: SHOWING THE FLOOR PLAN OF CASE STUDY THREE

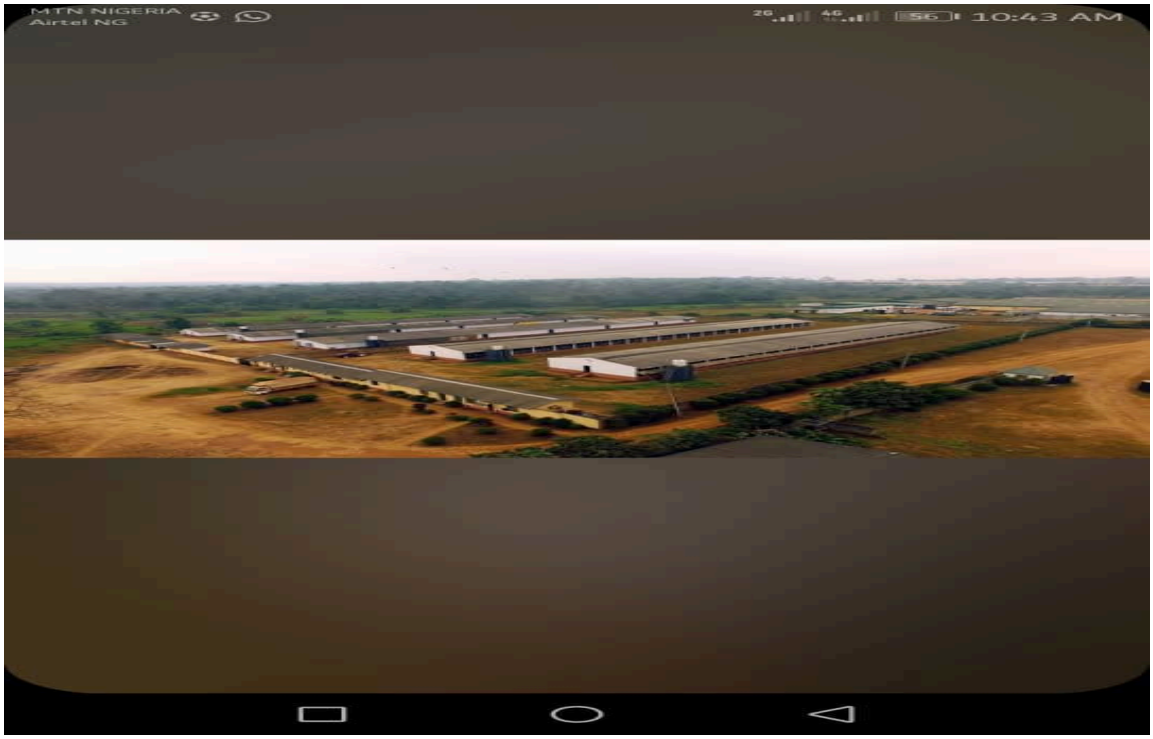


PLATE 3.3.1: SHOWING AREA VIEW OF CASE STUDY THREE

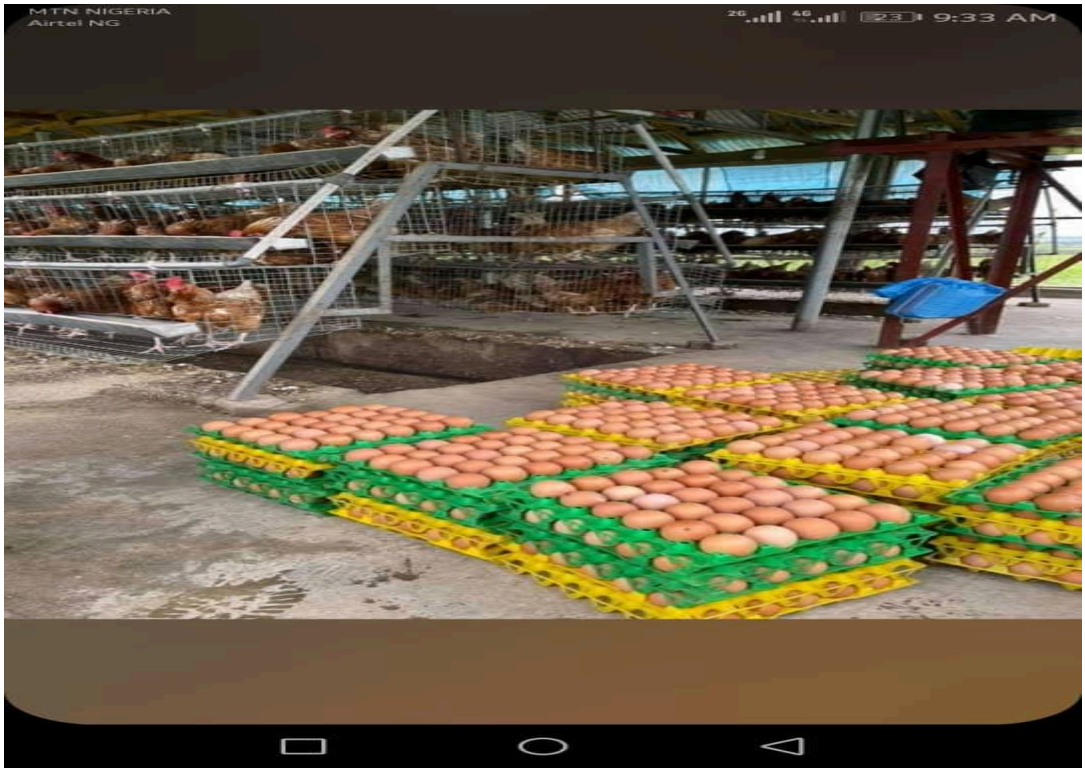


PLATE3.3.3: SHOWING SIDE VIEW OF CASE STUDY THREE

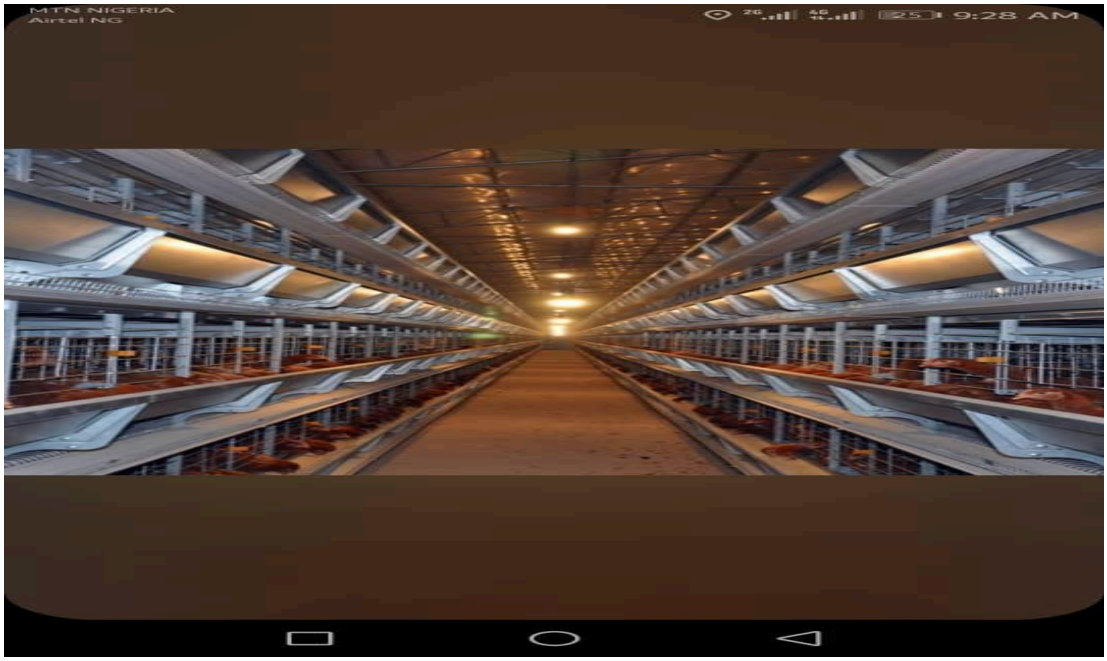


PLATE3.3.4: SHOWING APPROACH VIEW OF CASE STUDY THREE

3.4. CASE STUDY FOUR (ONLINE CASE STUDY)

LOCATION; AT DUBAI (AL- JAZIRA POULTRY FARM)

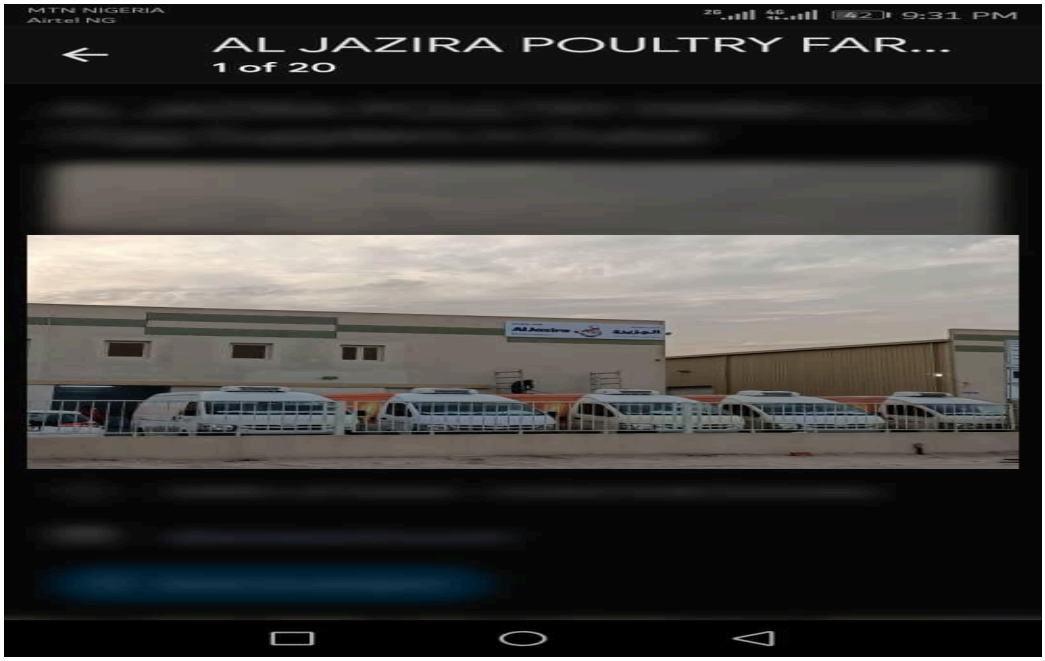


PLATE3.4.1: SHOWING APPROACH VIEW OF CASE STUDY FOUR

PLATE3.4.2: SHOWING INNER VIEW OF CASE STUDY FOUR

3.5. CASE STUDY FIVE (ONLINE CASE STUDY)

LOCATION; AT, U.S.A

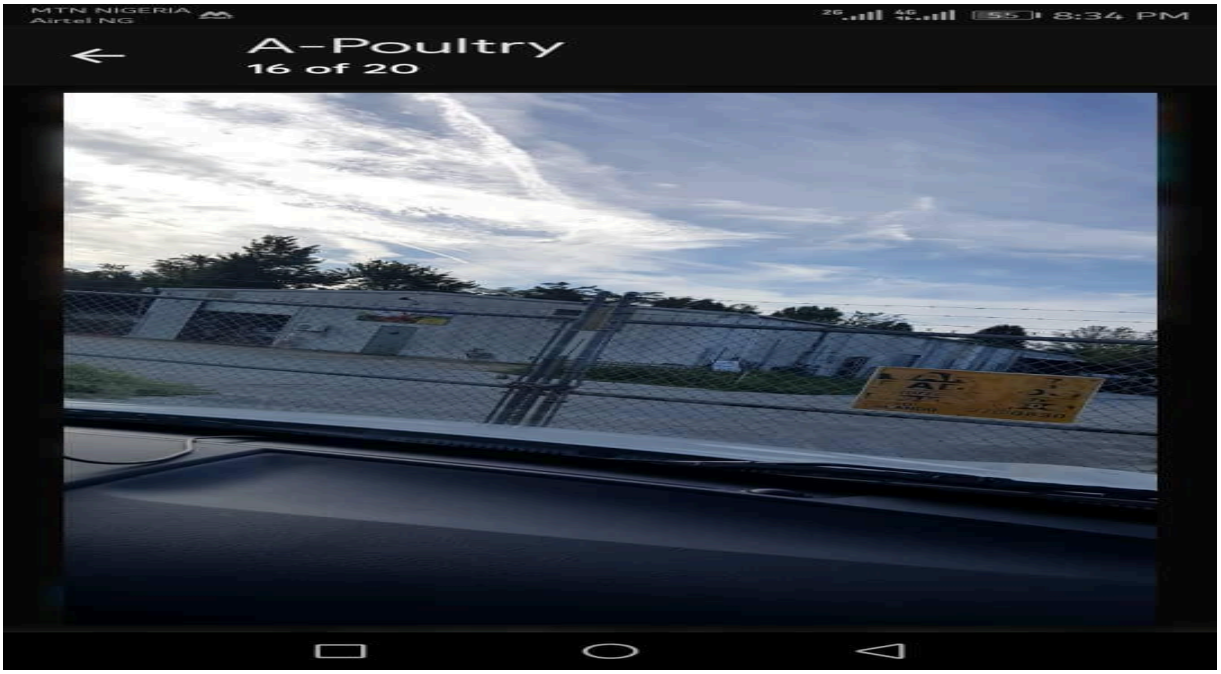


PLATE3.5.1: SHOWING APPROACH VIEW OF CASE STUDY FIVE

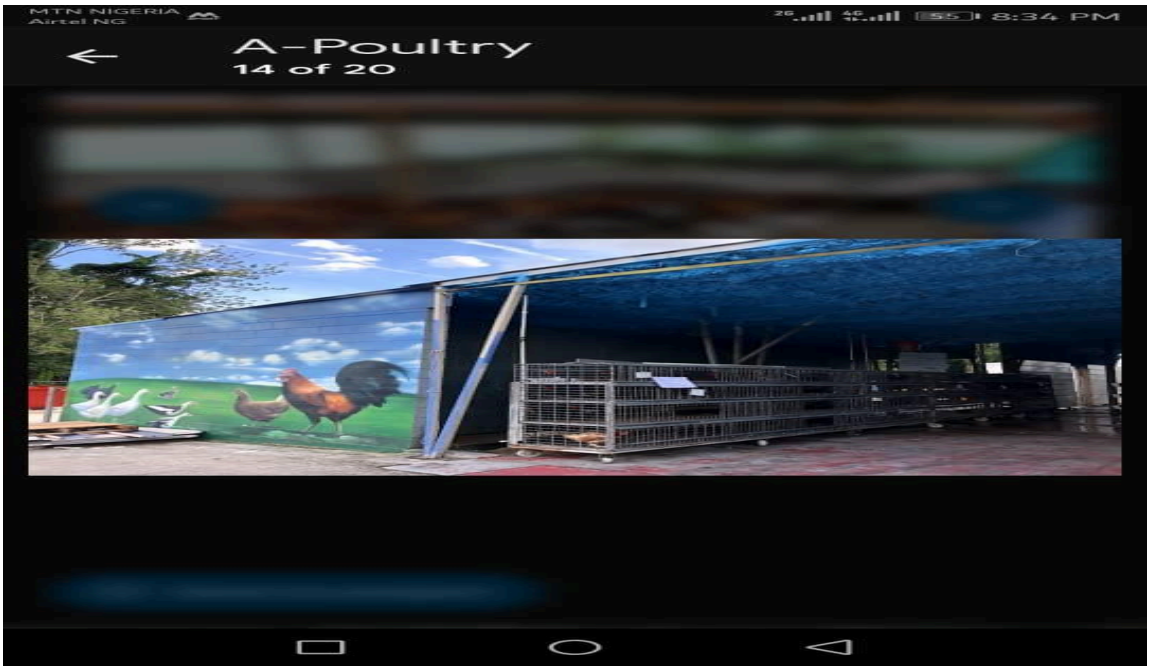


PLATE3.5.2: SHOWING INTERNAL VIEW OF CASE STUDY FIVE

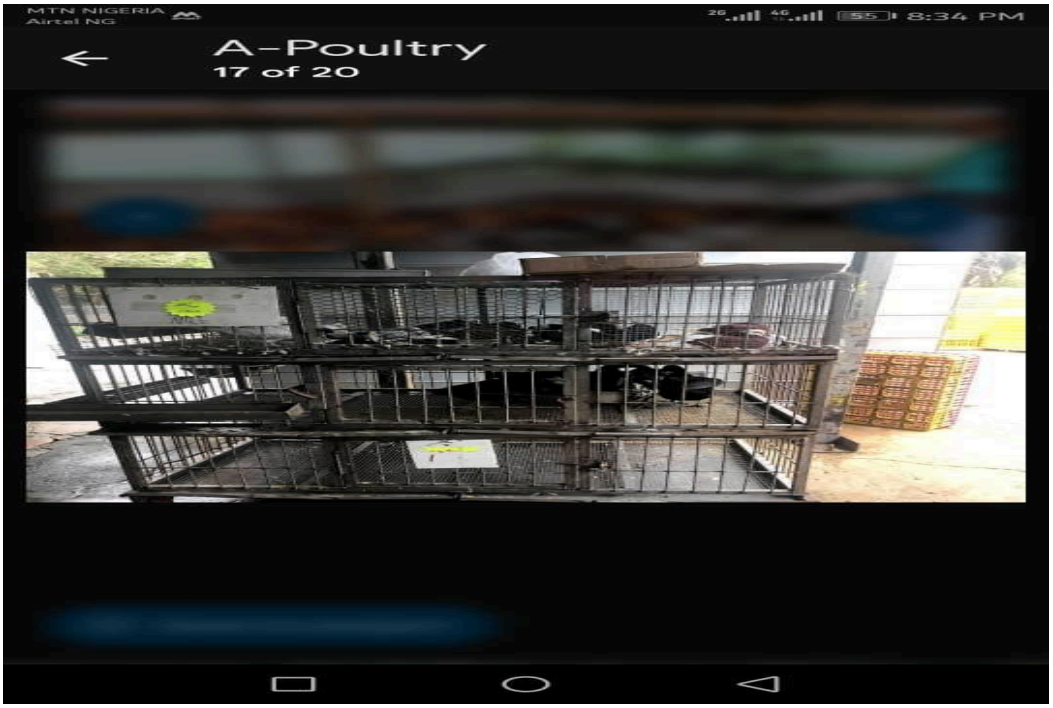


PLATE3.5.3: SHOWING INTERNAL VIEW OF CASE STUDY FIVE

3.6 DEDUCTION FOR THE CASE STUDIES

From the research carried out I have found out that expansion area on the site should be provided for mortgage farm and there should be provisions of social amenities to help the people achieve optimum comport as well as a suitable drainage system.

Also, the research carried out during the course of getting to know the relevance of designing a poultry farm, it is discovered that the convenience and adaptability of the community is paramount since the community in the environment for a long time, so everything placed should be easily operated.

During the research process, some facts that will enhance the project were collected.

The following were deduced:

- ✔ That there is need for proper landscape to provide a good view on the poultry farm and to control climatic condition prevailing on the site.

✔ That it is of necessity to provide adequate social amenities to improve the physical and social life of people.

✔ Security is not an alternative, it is of great importance to people living and working in the poultry farm, hence the design should place high rate on security.

CHAPTER FOUR

4.0 INTRODUCTION OF STUDY AREA

4.1 HISTORY OF KWARA STATE

Kwara State was created on 27th May 1967, when the Federal Military Government of General Yakubu Gowon broke the four regions that then constituted the Federation of Nigeria into 12 States. At its creation, the State was made up of the former Ilorin and Kabba Provinces of the Northern region and was initially named the West Central State but later changed to Kwara a local name for the River Niger

Kwara State has since 1976 reduce considerably in size as a result of further State creation exercises in Nigeria. On 13th February 1976, the Idah/Dekina part of the state was called out and merged with a part of the Benue/Plateau State to form Benue State.

On 27th August 1991, five Local Government Area namely Oyi, Yagba, Okene, Okechi, and Kogi State were also exercised to form part of the new Kogi State, while a sixth, Borgu local Government area was merged with Niger state.

There are sixteen local government areas in the state they includes; Asa , Baruten, Edu, Ekiti, Ifelodun, Ilorin East, Ilorin West, Ilorin South, Offa, Moro, Kiama, Oke-Ero, Irepodun, patigi, isin, irepodun

- **HISTORY OF PROJECT TOWN (ILORIN)**

The Ilorin of the 1930s and 1940s was a society that was struggling to preserve its cultural and evolve cultural commonality in its encounter with the British Colonial enterprise, which despite its comfort with the Emirate system, was posing new modern challenges. This culture of Ilorin which the peoples of the city had come to cherish, was itself a mesh of cultures: Yoruba, fulanis, Hausa, Nupe, Kemberi and others. The historical encounters between the Fulani Jihadists led by Alimi and the Yoruba worriers led by Afonja, had about a century earlier led the defeat of the latter.

However, what emerged in Ilorin was a traditional leadership system which meshed the Hausa-Fulani emirate system with Yoruba title holding.

- **ILORIN LOCATION**

Ilorin is a city with a large population in Kwara state, Nigeria, which is located in the continent of African.

Cities, Towns and places near Ilorin include Yemoja, Akamo and Ogidi, the closest major cities include Oshogbo, Ede, Oyo and Ijebu-Ode.

ILORIN DATA

Latitude 8.4965/829’29.9616

Longitude 4.544642/432’40.7106

State/region Kwara

Country Nigeria

Continent Africa

Population size Large

4.2 **SITE LOCATION AND DESCRIPTION**

The proposed site for poultry farm is located at Okolowo Ilorin west Local Government area, Ilorin, Kwara State.

- **SITE LOCATION CRITERIA**

The guiding rules which determine the choice of site depends on the following factors.

✔ Topography and soil type on the soil

✔ Accessibility of site to users

✔ Nearness to users and surrounding environment

✔ Wind direction

All these factors listed above have been considered and found to be satisfactory which determine the choice of site.

- **CONSIDERATION FOR SITE SELECTION**

1. Therapeutic Possibilities: The site provide therapy in the form of social interaction and physical activities
2. Accessibility: The site can be directly accessed and has no problem being located. It is located at okolowo Ilorin west Local Government Area Ilorin, Kwara State.
3. Infrastructural Facilities: Infrastructural facilities such as electricity, water, drainage and good road network are all present advantages on site for utilization
4. Vegetation: The vegetation is characterized by trees and shrubs. The topography is relatively flat with gentle slope
5. Soil Textures: The soil is a sandy soil, the soil is a virgin in the sense that there is no existing building on it.
6. Land Scape: Trees and shrubs are to be scattered over the site which are to be incorporated has landscaped features on site among other landscaped element

7. Telephone Service: There is good reception of all the mobile telephone services on site with the exception. Moreover, AIRTEL mask are located around the site showing that the immobile telephoning system is also available.

4.3 ANALYSIS OF TOPOGRAPHICAL AND ENVIRONMENTAL CONDITIONS OF THE SITE

VEGETATION, TOPOGRAPHY

- **VEGETATION**

The site is covered with shrubs, thick grass and vegetable leaves and trees. All the vegetables and shrubs are to be removed. At the time of conducting of site investigated on the proposed project site, the site displays a relatively thick vegetation cover that is; there are grasses, shrubs as well as big trees. There are portions with simple vegetation cover due to human activities (Clearing and farming) that is taking place on the site.

- **TOPOGRAPHY**

It has a gentle slope. It does not undulate. The topography of the proposed development site is relatively low that the top soil and the sub-soil is firm and buildable. The site is therefore free from any natural or physical constraints and rock outcrops.

4.4 SITE ANALYSIS/ INVENTORY

1. **SITE ANALYSIS**

The site is benefit a land of loamy soil, it is very good soil for grasses and shrubs. It has a gentle slope towards the North-east, grasses, shrubs, acacias, palm trees and countless of locust beans trees are present on site.

Some of the grasses, shrubs and trees on the site are to be retained to enhance landscape pattern of the site, while some are to be remove and planted where necessary.

The two noticeable winds are to be directed into the building using the landscaping pattern to improve ventilation.

Noise generated from vehicular traffic is controlled through proper planning, good landscape and proper orientation of buildings.

Generally, all the features on the site are best put into different uses to aid control through proper planning, landscape and orientation.

Certain steps are considered to obtain vital information of the site, this information is then analyzed in details for design purpose, the information soil condition, geology topography, vegetation etc. It also involves carrying out a preliminary survey of the site.

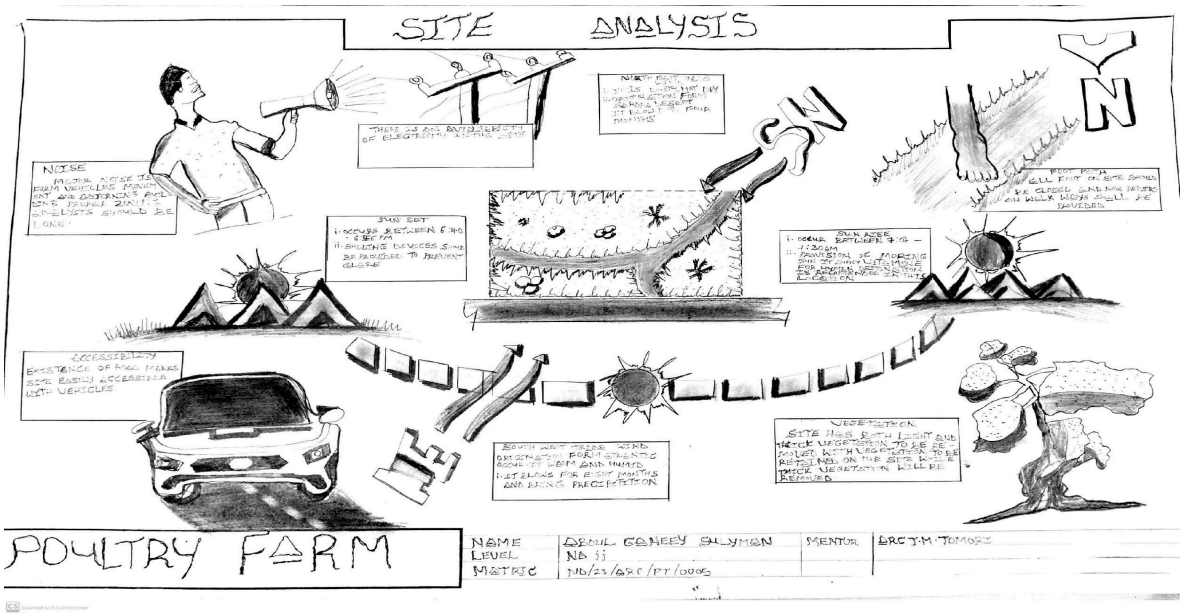


FIGURE4.4.1; Site Analysis of the Proposed Design

(1) **Vegetation:**

The vegetation is characterized by trees and shrubs. The topography is relatively flat with gentle slope.

(2) **Soil Textures:**

This is the lay out of the site.

The site is gentle slope towards the north east. The sunrise and sunset will be considered for building orientation and lightening.

Also the northeast trade wind and the south west trade wind will give due consideration for effective ventilation and solar radiation control for total comfort of occupant.

Noise generated from vehicular movement is controlled through proper planning good landscape and the location of various structures to aid comfort.

2. **SITE INVENTORY**

The site is covered with shrubs and grasses. It is a virgin land that has electricity poles passing through it and block of shops on it. The access road that leads to the site is a corner piece. There are varieties of trees on it which has to be cleared off before the actual construction begins.

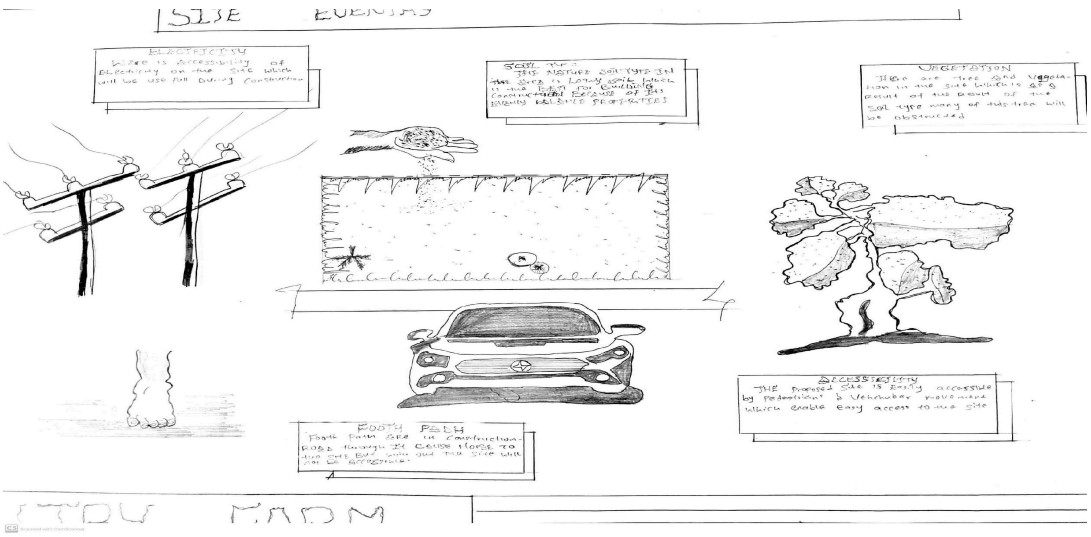


FIGURE4.4.2; Site Inventory of the Proposed Design

4.4 GEOGRAPHICAL/CLIMATIC DATA

LOCATION: Ilorin is located on the longitude of 4.34' east aids 8.27' worth. It covers one third of south west Nigeria which lies on the northern margin of Yoruba plateau. It is about 278 meters above mean sea level. It is located in between southern rain forest and northern guinea savannah, a position that is commonly referred to as the Middle belt (derived savannah)

1. **Rainfall**: The rainfall is conventional in character. The two periods of peak rainfall are experienced where there is the passage of the overhead and sun across the equator northward (April-July) and southward (September-October)

The amount of rainfall in the state varies from 1500mm-3700mm

2. **Temperature**: The temperature is high throughout the year ranging from 28.C to 38.C. The main daily temperature is in March being the hottest month.

3. **Humidity**: The humidity is relatively low in January when the country is under the influence of tropic continental air masses. In August, relative humidity is high due to warm air-mass.
4. **Vegetation**: The area consists of rainforest and some noticeable trees are locust bean, orange and mangoes trees
5. **Wind:** The general wind direction is determined by the movement of the inter-tropical convergence zone (I.T.C.Z) this alternates the influence of the two contending wind systems, the North-East wind and the South-East trade winds.

During the wet season when the dominant wind, the South-West trade bringing the moisture laden wind from the atlantics.

- **SITE PLANING**

The site is planned in order to give it a defined shape and also to reflect the activities taking place. The location of building and facilities within the site follow these main principles:

A. The priority of individual structure within the term of zoning (noisy, semi-noisy and quiet zone)
B. Parking space located within and around the various units for convenience.
C. The police post and fire station is located not too far from the main gate for security purpose.
D. The supporting units such as Mosque, mini mart, egg and feed mill store, and mill factory e.t.c are sided for easy access of the people
E. The site is properly defined with a perfect blend of both natural and artificial attraction as well as soft and hard landscaping.

4.5 DESIGN CRITERIA

1. SITE PLANNING

It is described as the proper arrangement of structures in accordance to the planning regulations and architectural standards to meet the purpose of being durable, aesthetics, balanced, economical, comfortability and suiting the purpose for which it is designed.

1. **ORIENTATION**

The orientation of the building must be designed in such a way that the large sides is facing the north and the south in order to achieve maximum comfort. The building on the site is properly oriented to achieve of rhythm in appearance of the structures on site.

The site is planned in order to give it a defined shape and to reflect the activities taking place. The location of buildings and facilities within the site follow these main principles:

1. The site is properly defined with a perfect blend of both natural and artificial attraction as well as soft and hard landscaping.
2. The social amenities units such as mosque, mini mart, health centers etc. are sided for easy access of people.
3. Structure are placed in accordance to Zoning and usage.
4. The zoning principle of individual, structure within the zoning (noisy, semi-noisy and quiet zone).
5. Parking space located within and around the various units for convenience.
6. The vehicular movement is carefully considered as regarding the layout pattern as Grid pattern.
7. The layout pattern adopted is the grid layout pattern due to its suitability and flexibility

4.6 BRIEF ANALYSIS OF THE PROJECT

As a result of the deductions made from the studies conducted on the project, adequate attentions are given to seven units that make this project. All these end up in the poultry farm.

THE AREAS ARE AS FOLLOWS:

I. **ADMIN BLOCK**

Entrance
Reception
Conference room
Accountant office
Secretory office
Manager office

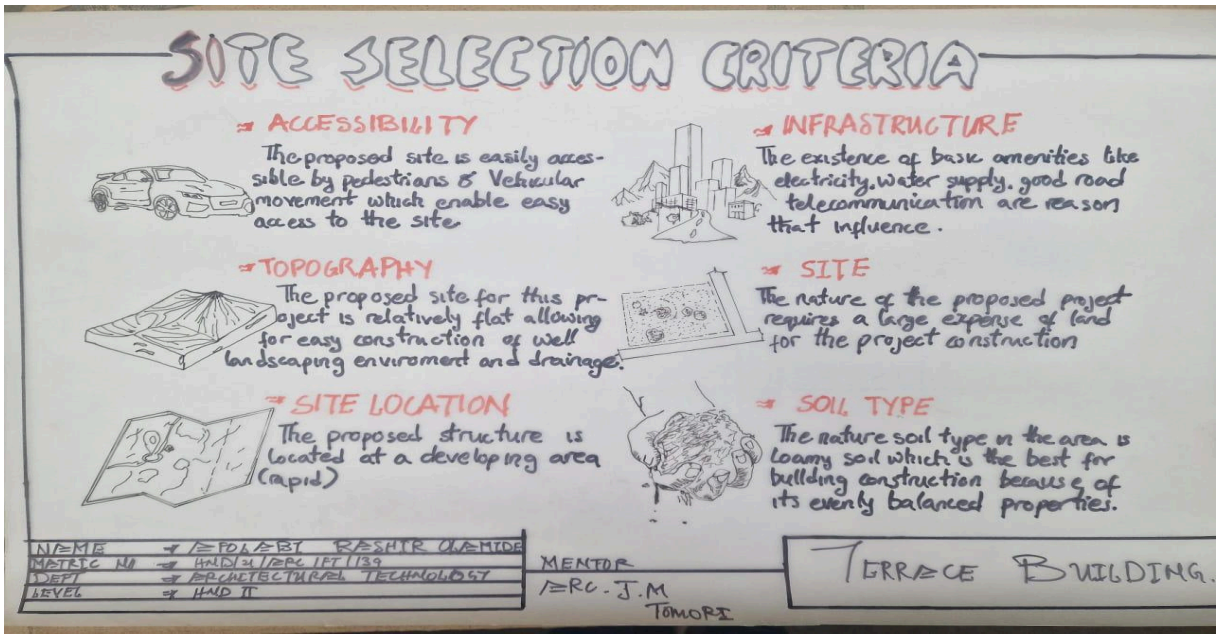
Ventenary office
Utility store
Sterilization room
Changing room
Rest room
Booking room

II. **POULTRY CAGE**

III. **HATCHING ROOM**

IV. **EGG STORE AND FEED MILL STORE**

4.7 SPATIAL CRITERIA



4.8 APPRAISAL OF PROPOSED SCHEME

In a project design, there are three basic factors that should be taken into consideration. These factors are stability, functionality and the aesthetics of the design. Although some designers design, to make aesthetics and functionally incompatible , but in case of this project,

both aesthetics, functionality and durability were taken care of to meet the functional demand and to create a proportional balanced design. The project is basically considering the caders of earners such as low income earners, medium class earners and high income earners respectively.

4.9 EQUIPMENT AND OPERATIONAL AND PERFORMANCEREQUIREMENT

The operational and performance requirement places the units according to the activities taking place and they have been arranged to go this way:

1. Private area: This unit is known to be a private area on site accessible for only the occupants and their visitors.
2. Public area: This area hosts the auxiliary facilities and the units include supermarkets, mosque, admin block e.t.c

4.10 SPATIAL ALLOCATION

Is the allocation of spaces required in the building design in order to make the most applicable use of the space available?

Table4.10: Space allocation for admin block, cage.

S/N	SPACE	UNIT AREA	NO OF UNIT	TOTAL AREA
1.	Entrance	4.2 x 1.8	1	7.56
2.	Reception	5.2x4.4	1	22.88
3.	Conference room	3.6x3.6	1	10.8
4.	Accountant office	2.2x1.8	1	3.96
5.	Secretory office	3.6x3.0	2	10.8
6.	Manager office	3.6x3.6	2	12.96
7.	Ventenary office	3.6x2.0	1	7.2
8.	Utility store	4.4 x 2.7	1	11.88
9.	Sterilization room	3.0.x2.0	1	6.0
0.	Changing room	2.4x1.2	2	2.88

11.	Rest room	4.4.x2.7	4	11.88
12.	Booking room	2.1x1.2	1	2.52
13.	Cage hall	0.9x1.8	6	1.62
14.	Hatching room		1	
15.				

4.11 FUNCTIONAL RELATIONSHIP

This involves the links between two spaces, it is therefore the linking of the closely related spaces in the building structure in order to achieve a functional, aesthetically balanced building. It is highly considered in designing of the various buildings on site.

4.12 CONCEPTUAL DEVELOPMENT

In the concept development, functionality was vehemently considered in order to achieve the proper relationship between the unit's in the poultry farm and the occupants. The design concept is derived by joining of shape to get an even development.

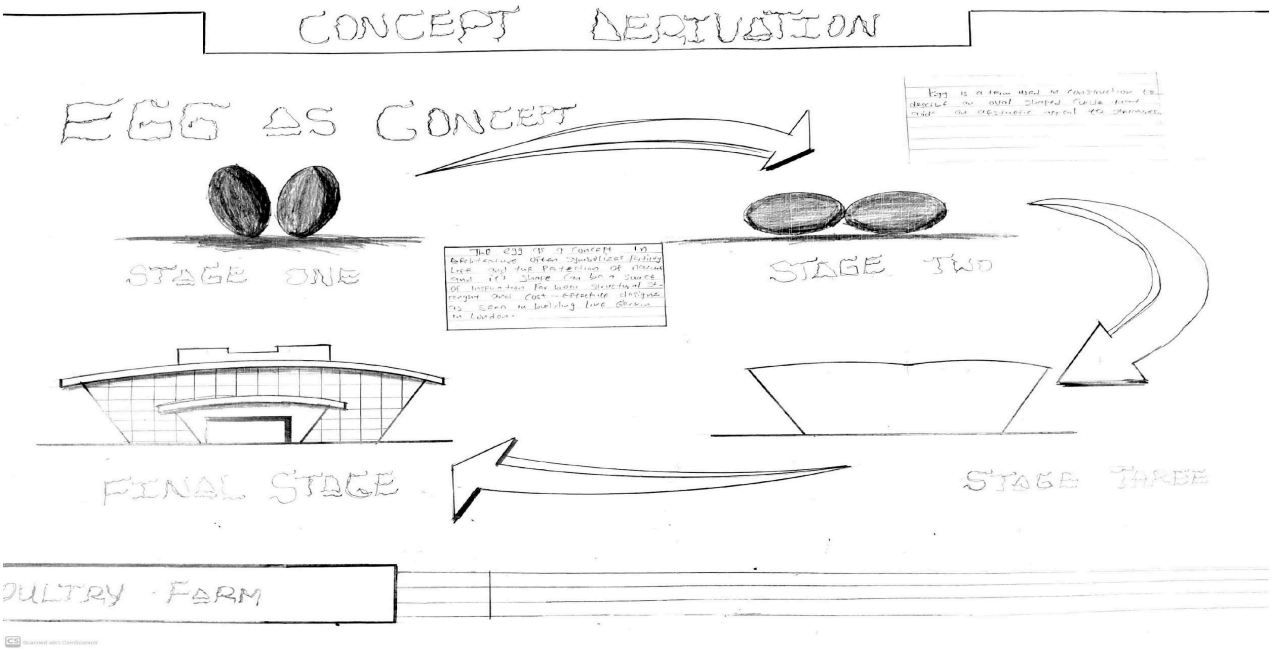


FIGURE4.12; Show a design concept of the Proposed Design

CHAPTER FIVE

5.0 APPROACHES TO THE DESIGN

In approaching this design project, many factors, strategies and research works were taken into consideration. Some of the factors which include functionality, durability, cost of materials. The research work put into consideration are study of neighborhood

Value, statistic, household value, occupation and social lives of the occupants of the area. The proposed neighborhood consists of battered houses which consists of farm stead and huts which does not have the capacity to withstand heavy rainfall and high rate temperature. Hence the climatic data and neighborhood activities were vehemently considered. These factors and deductions were highly adhered to in this project to achieve a functional, aesthetically balanced, durable and proportional balanced design.

5.1 TECHNOLOGY AND ENVIRONMENTAL CRITERIAL

CONSTRUCTION METHODOLOGY

The method of construction involved in the erecting the building structure is in accordance to the Architectural detail required in executing the buildings and process of

construction that is critical to structural component as affected by the site conditions and type of materials to be used.

After the preparation of the site plan, many design details are developed to show the specific methods of construction. It is to serve two important purpose; firstly they stipulate the aesthetics and structural element of the plan and secondly they provide the basis for costing the project.

The section is not intended to present aesthetic or design solution alone but also indicate how similar technological difficulties are handled. In the method of construction, the factors are considered:

- Climatic condition
- Fire protection
- Durability and easy maintenance
- Easy accessibility
- Economy/Aesthetics
- Available of materials
- Cost of material
- Construction techniques
- Condition of the sub-soil present on the sit

The various building component taken into consideration are:

1. **SUB-STRUCTURE**

This is the part of the building below natural ground level. The foundation footing are reinforced for stability of the building to enable it to withstand the load (live and super-imposed and wind load). The foundation of the structure shall be determined by the structural engineer according to bearing capacity of the soil.

2. **SUPER STRUCTURE**

This is the part of building that is above the natural ground level. The entire structure is design with reinforced concrete columns, beams and hollow sand screed blocks.

MATERIAL AND STANDARD FORM

The following materials are applied in the construction of the structure such as:

FLOORS

The ground floor will be solid concrete slab of 150mm with asphalt coating as damp proof course laid well compacted hardcore. Floor finishes are ceramic floor tiles and terrazzo floor tiles because they are durable, easy to maintain and do not wear easily.

DOORS

The size and types of doors depend on its location but generally the size ranges from 750mm, 900mm and 1200mm respectively.

WINDOWS

The windows in the building is designed primarily to allow natural light, natural air/ventilation into the building and used to allow easy free flow of carbon dioxide out of the building as well as to allow for outside view.

ROOFS

Roof member of all buildings will be made up of timber and long span aluminum roofing sheets. This is for the easy maintenance of self-support and a longer life span.

CEILING

The kind of ceiling system adopted for the building in the poultry farm is the asbestos ceiling sheet. The factors considered for choosing this type is

a. Durability
b. Easy to maintain

c. Cost

5.2 ESSENTIAL SERVICE REQUIRED

Service are essential for comfort ability security and safety to create a conducive atmosphere for the users of the poultry farm the following service must be provided:

i) **PLUMBING SERVICES**

All water supplies and other distribution to all the required areas would be through 50mm diameter galvanized steel pipe while selvage will be PVC service pipe, which will be provided with shower tray, towel trays, wash hand basin and tissue roll holders. Septic tanks and soak away pit shall be placed in suitable location for easy maintenance.

ACOUSTICS

The major noise comes from the major road and this could be reduced by maintaining a reasonable setback from the major road and the proper landscaping which include the planting of trees and flowers to serve as noise and sound absorb ant.

WASTE DISPOSAL

Waste disposal should be provided where unwanted materials such as dirt should be dumped in order to make the environment clean.

FIRE PROTECTION

Structural protection is achieved by using fire resisting elements and limiting the use of combustible materials and finishes. Fire detectors and firefighting equipment should be provided.

EXTERNAL WORKS

These are works carried out outside and around the building. It is otherwise known as landscaping building.

These are the elements used to provide aesthetics and general human comfort in and around the building.

There are two types of landscaping:

I. Soft landscaping
II. Hard landscaping

The following specifications are applicable for the external works.

- Surrounding walls to be rendered and painted
- The floor surface to be of interlocking materials and asphalt on the road to allow effective drainage
- The floors to withstand expected impact and high load bearing capacity.

The landscape elements are:

- Asphalts: used for drive ways and parking lots. It is economical and durable both for pedestrian and vehicular traffics.
- Interlocking paving: used for walkways and outdoor paving to blend with the natural texture of the environment.
- Trees: used as shading device and also to reduce rays in both paving and structure.
- Decorative flowers: different species of flowers are used to enhance the aesthetic appearance of the site.

5.3 ENVIROMENTAL CONIDITIONS TO BE ACHIEVED

. The plantation of trees to regulate the temperature

. The orientation of the building structure to achieve maximum comfort thereby controlling solar radiation.

5.4 PERFORMANCE STANDARDS

The performance standard of the building construction is to be a highly luxurious because of the targeted users and the occupants of the town which have a high taste of social lives.

5.5 LEGAL ISSUES AND PLANNING REGULATIONS

The proposed building must pass through various processes in order to be approved of the planning regulations of the local government authorities and the board of chiefs because of it being a public building. The process for approval in the local planning authority is to provide the following

The c of o of the land

The original land purchase documents

The survey plan

The structural drawings

The architectural drawings

The mechanical and electrical drawings

5.6 BEHAVIORAL PATTERNS AND CONSIDERATIONS

The considerations is the designing the poultry farm to bring comfort to the targeted users by providing adequate security, creating open spaces to be used for learning Arabic recitation of the Muslim residents and provision of recreational facilities.

GENERAL MAINTENANCE

Maintenance cannot be isolated from the initial planning and design of any architecturally edified most especially a project of this caliber which involves accommodation.

Timely maintenance of the structure and facilities to put them in proper condition to enhance balanced living and to avoid building deterioration. It is the work done to restore a building to an acceptable standard. The maintenance will be dully attended to with regular cleaning, repainting, and constant checking of access roads, planting of trees.

5.7 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION

It is clear that the challenges militating against poultry farm in Ilorin are multi-facet. However, much time can be invested on program design. It is therefore expected that the findings and recommendations emanating from the project have advanced my understanding of the challenges and solutions to poultry farm in Ilorin.

RECOMMENDATIONS

The project has examined the contextual and organization challenges faced by poultry farm. Research shows that 45% of the poultry in the neighborhood are farm steeds and houses that are not in proper conditions.

To address this challenges this project makes the following recommendation.

Firstly, the private owners should be granted full support and be empowered to construct and provide poultry farm for the community which will also help to provide employment for youths.

Secondly, Government should try to provide the essential farm input such as drugs and vaccine to the farmers at the right time and at subsidized prices to reduce the cost of production in order to improve profitability. Government should encourage the youths involved by providing them technical knowledge in the area of resource management through the extension agents to assist in reduction of production cost.

Furthermore the rise in cost of quality materials should be reduced by the government in order to have a durable, aesthetically balanced structure to achieve optimum comfort for the users.

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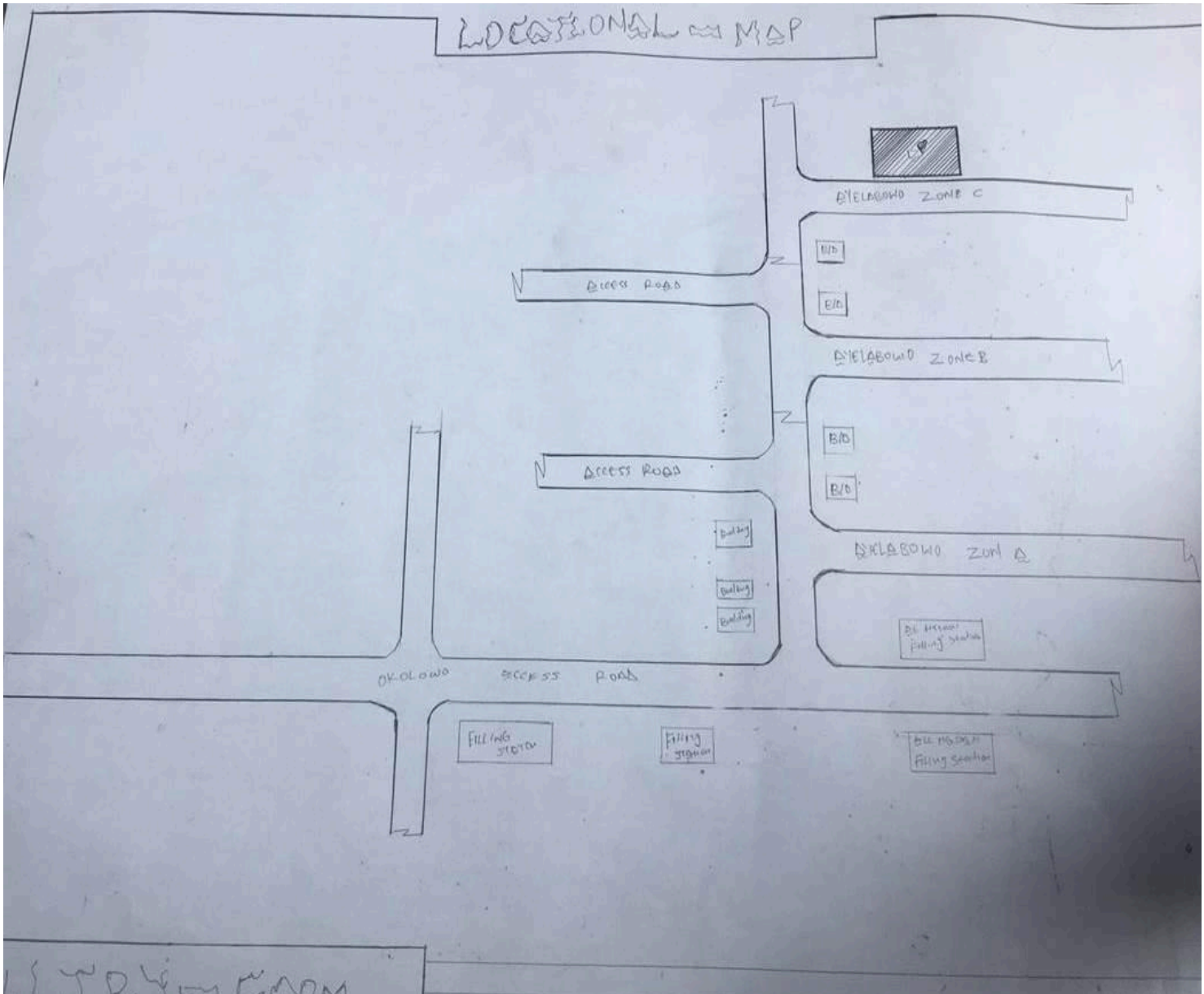
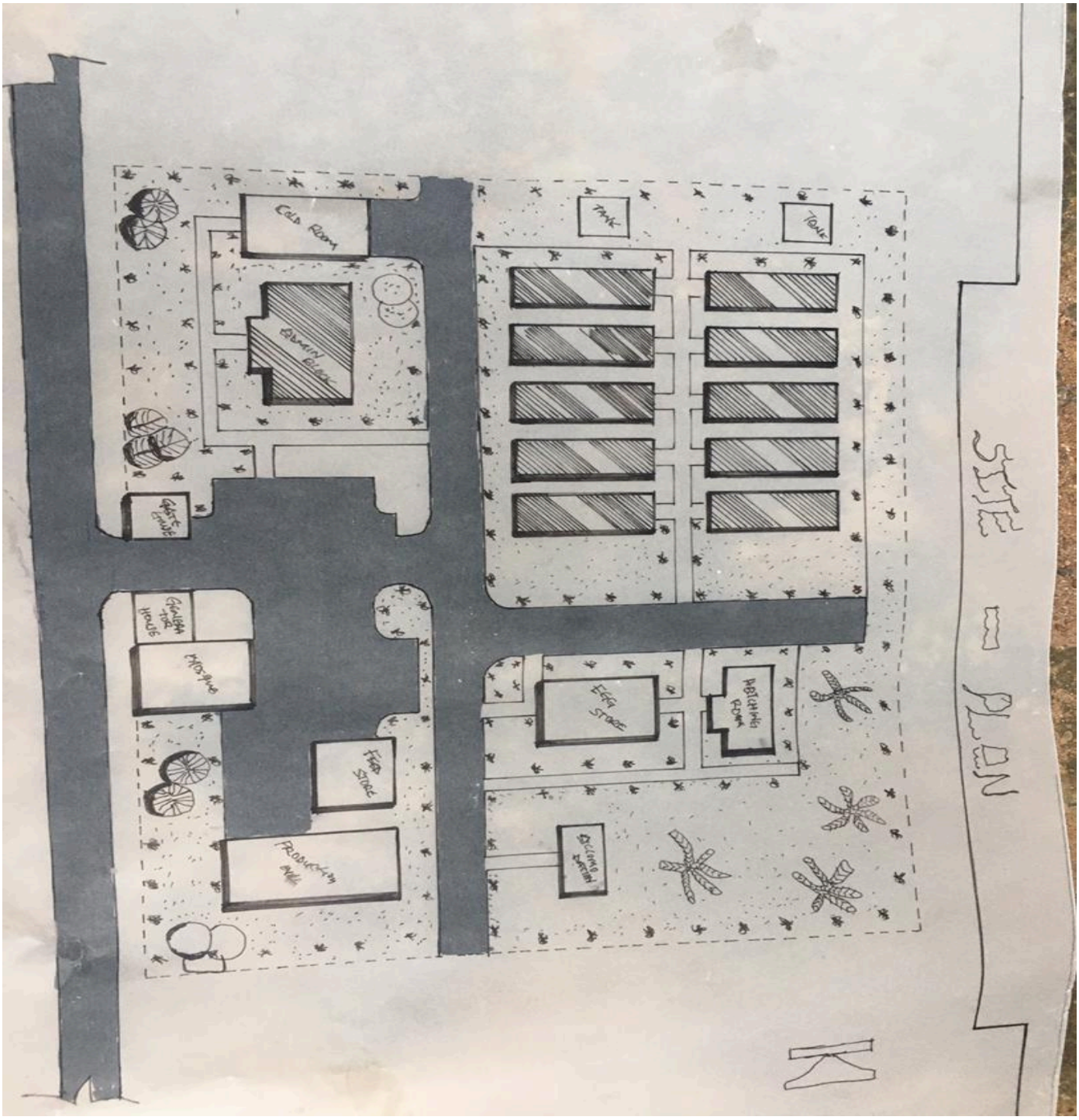
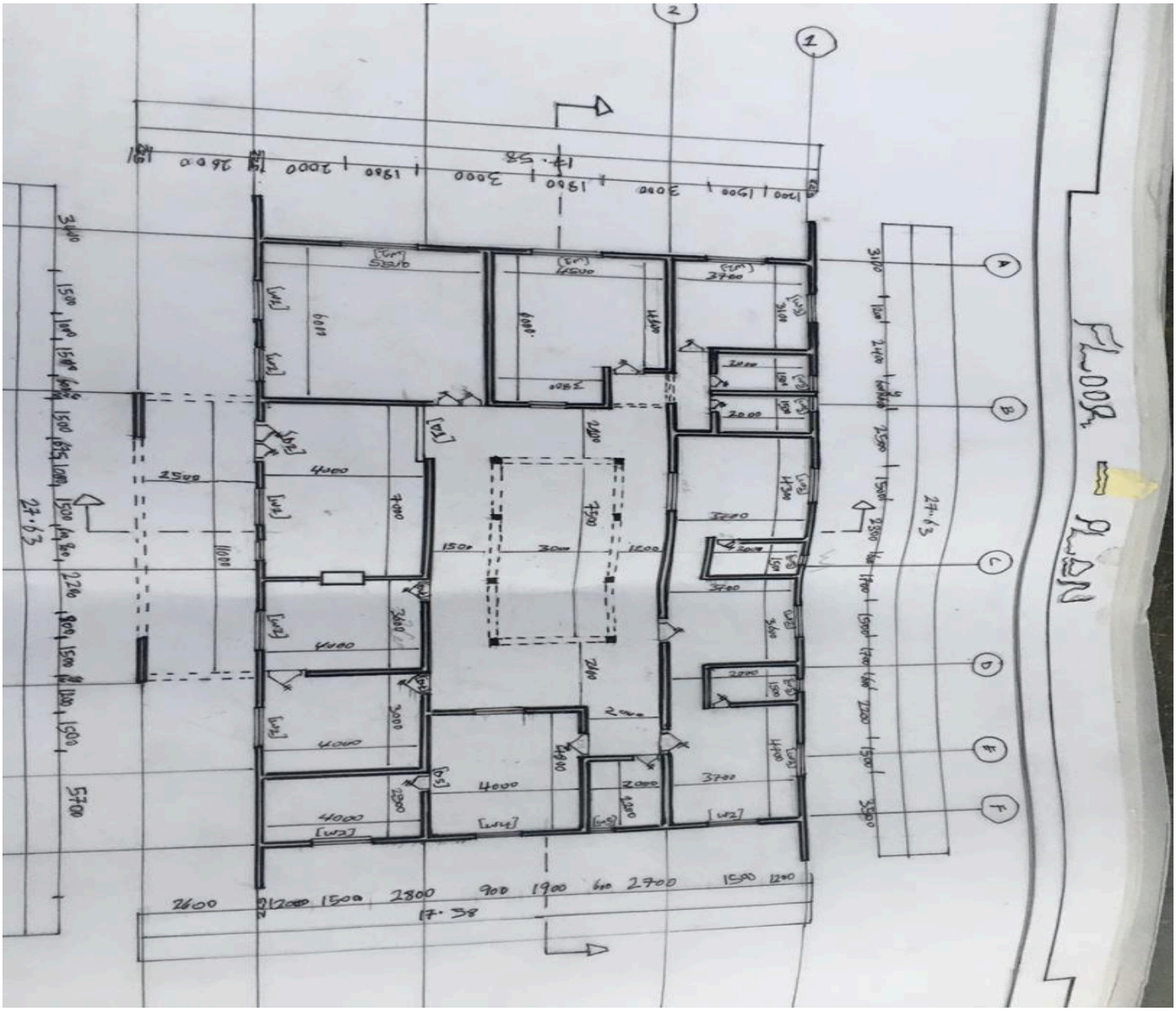
APPENDIX

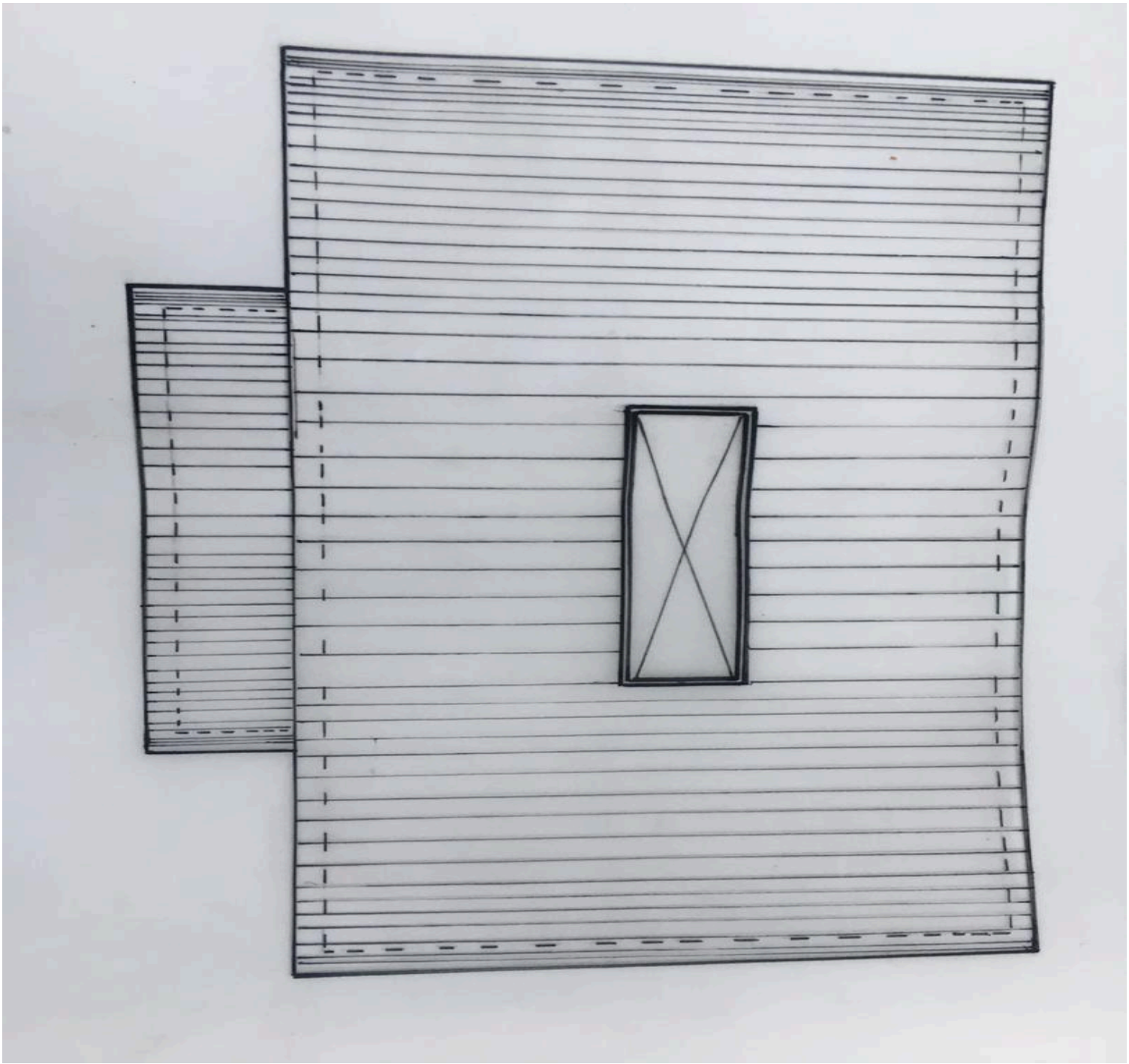

LOCATIONAL MAP
ELEGBOWO ZONE C
B/D
B/D
ACCESS ROAD
ELEGBOWO ZONE B
B/D
B/D
ACCESS ROAD
Building
Building
Building
ELEGBOWO ZONE A
OKOLOWO ACCESS ROAD
FILLING STATION
Filling station
Filling station



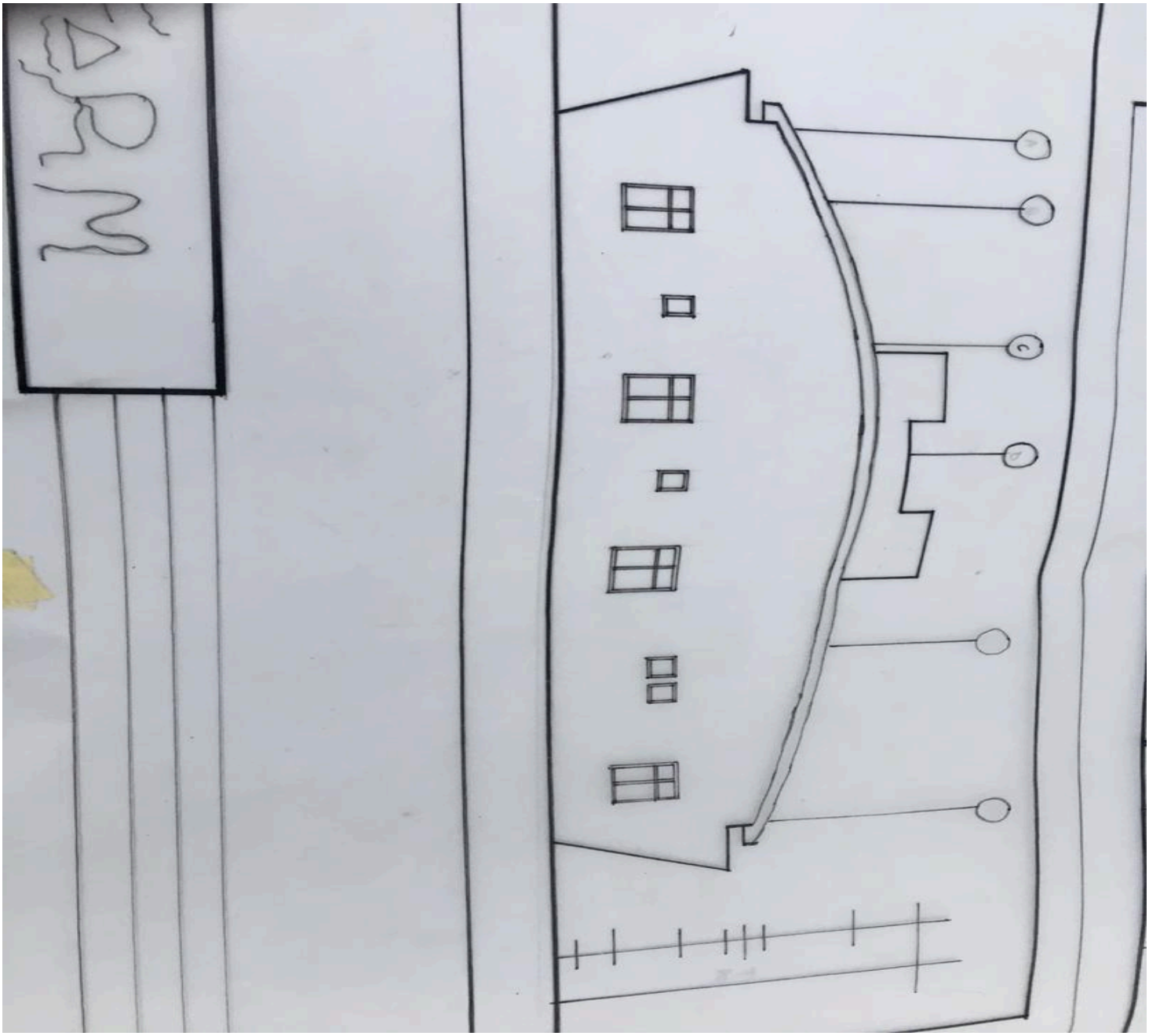
APPENDIX 5.2 SHOWING THE SITE PLAN



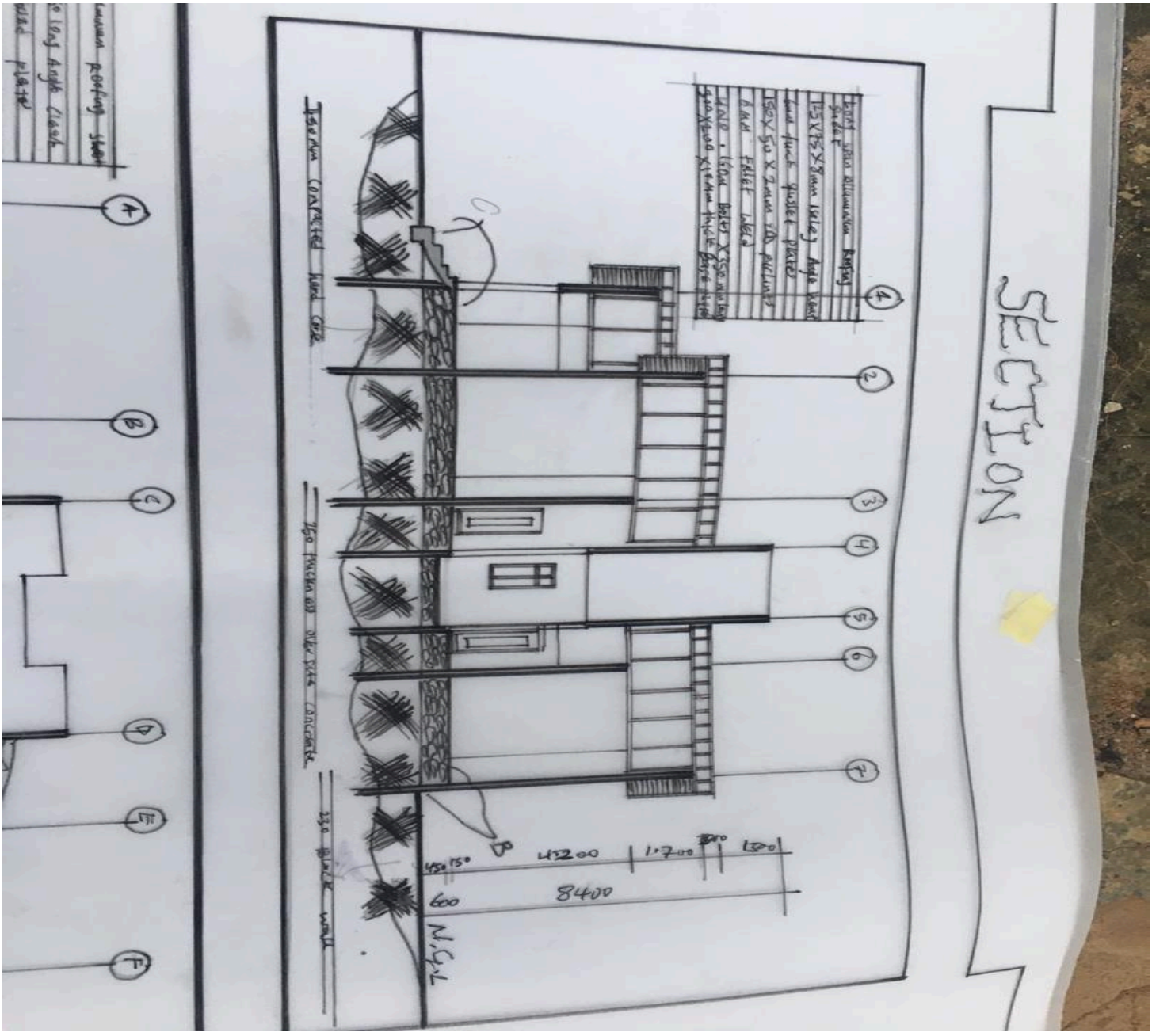
APPENDIX 5.3 SHOWING THE FLOOR PLAN



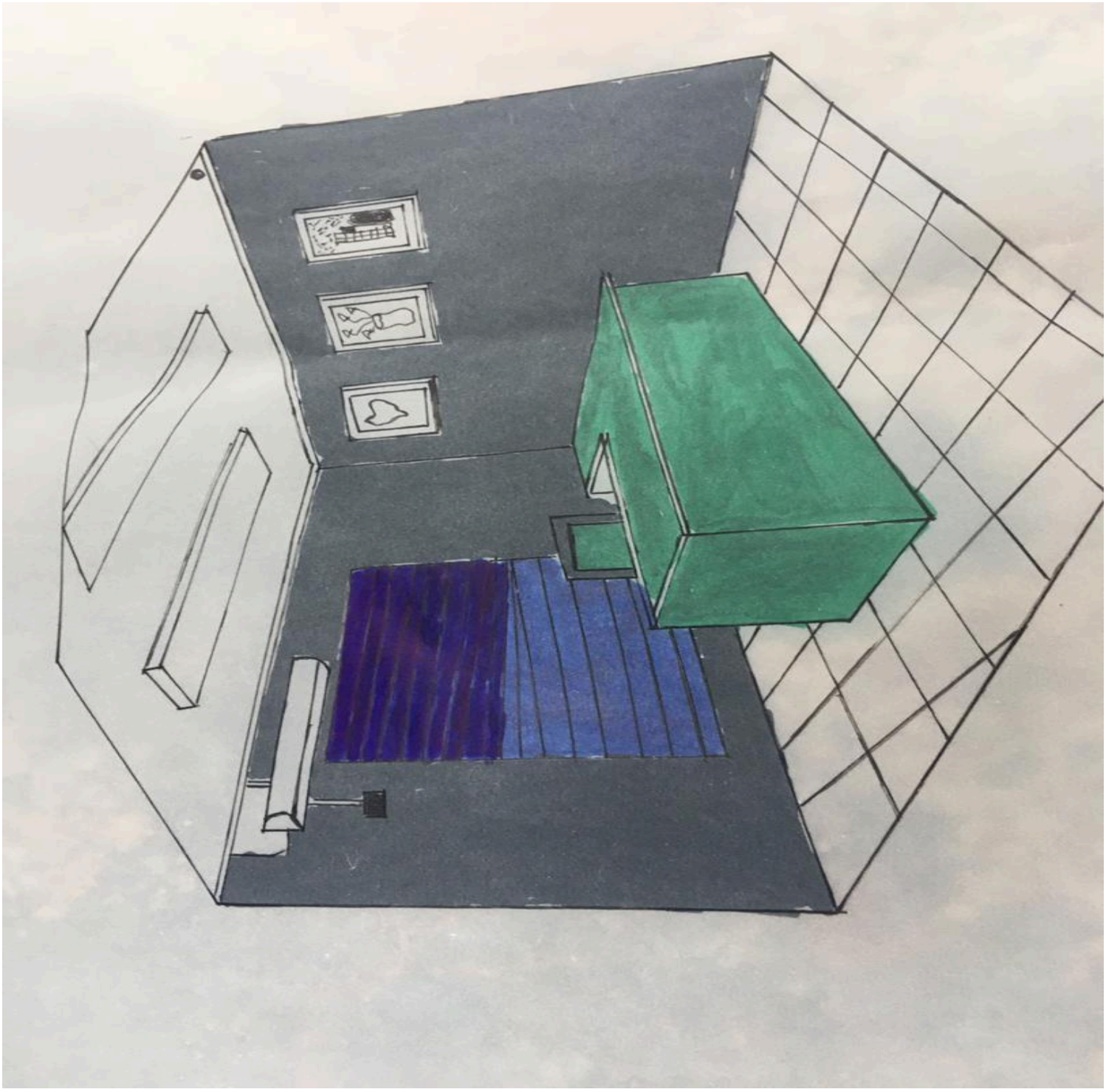
APPENDIX 5.4 SHOWING THE ROOF PLAN



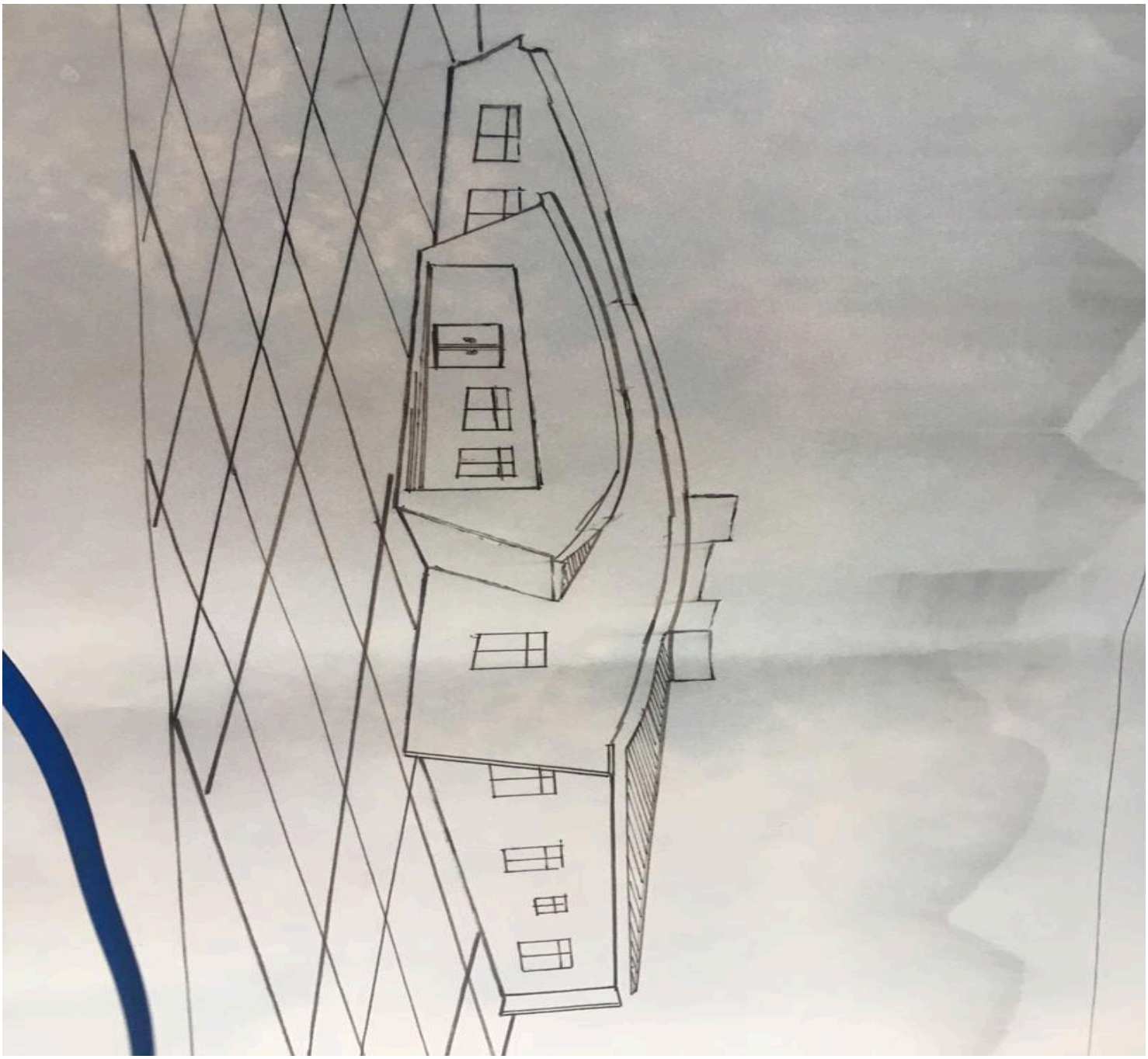
APPENDIX 5.5 SHOWING THE ELEVATION



APPENDIX 5.6 SHOWING THE SECTION



APPENDIX 5.7 SHOWING THE INTERNAL PERPECTIVE



APPENDIX 5.8 SHOWING THE INTERNAL PERSPECTIVE