REDEVELOPMENT PROPOSAL FOR THE NATIONAL **ORTHOPAEDIC HOSPITAL, IGBOBI, LAGOS.**

(Towards progressive patient care)

BY

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DECLARATION

I the undersigned, hereby declare that the work presented in this dissertation award of degree of Master of Science in Architecture has not been wholly or partially presented for any other degree nor is it being submitted for any other degree. It's an authentic research work conducted by me in accordance with the regulations of the **POSTGRADUATE SCHOOL,** Ahmadu Bello University, Zaria.

This is to further declare that all directly quoted *materials and secondary sources are duly acknowledged.*

AJAYI ADEYEMI OLAMIDE

Date: -

CERTIFICATION

This dissertion title **REDEVELOPMENT PROPOSAL FOR THE NATIONAL ORTHOPAEDIC HOSPITAL, IGBOBI, LAGOS.** (Towards progressive patient care) by **AJAYI ADEYEMI OLAMIDE** Meets the regulation governing the award of the degree of Master of Science (M.Sc.) in Architecture of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge.

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DEDICATION

This research work is first and foremost, dedicated to God
Almighty for his guidance and grace and most of all his infinite
Mercies.

Also it is dedicated to my parents: - Arc and Mrs. S.O. Ajayi for all the love and support financially, mentally, physically and spiritually.

Finally to my brother and sisters: Dayo, Doyin and Sola for
their ever ready presence, love and support.

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God Bless you All.

ABSTRACT

It is said that a healthy nation is a wealthy nation'. The wealth of the nation is in the health oF its human resources. This health is managed or treated by hospitals, clinics and other medical institutions, when it has been impaired (either permanently or temporary) by any form of illness or disease.

The health needs of the society are influenced by many factors such as increased sophistication in scientific knowledge that is technology and also a simultaneous increase in the population size.

Hospitals in the country today especially the public hospital are not presently equipped, to cater for the health needs of the nations populace due to a decay of both functional and physical structures, respectively. This is due to the fact that most of them were built during the colonial era.

The National Orthopaedic Hospital, Igbobi, Lagos was built during that era, at the time of the second world war as a rehabilitation center for the returnee war veterans whom had all forms of traumatic and orthopaedic injuries. It has since being upgraded to hospital status by the Federal Government. This hospital which acts as a referral hospital to other hospitals in the area of orthopaedics management and treatment, has had some of its facilities upgraded haphazardly within its initial layout, in an effort to improve the situation, without proper consideration for inter-departmental

relationship, and circulation.

The purpose of this thesis work is to propose mainly a redevelopment of the hospital with regards to the above stated reasons and also providing an enabling environment for the recovery of the patient, through the upgrading structurally, of the diagnostic and treatment core and the in-patient core, as these are the two most important areas to a patient in the hospital.

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CHAPTER ONE

1.0 Introduction:

The whole system of health care is geared towards the management of a patient's illness. The peace of mind, sense of security and comfortability of any patient also contributes to the health and subsequent recovery of the patient from the illness. It should be noted that the most important area in a hospital, which affects the patient's rate of rate of recovery both positively and negatively, is the area in which the patient spends most of his or her hospital life. This area is the ward in which the patient inhabits throughout his or her stay within the hospital environment.

There is a need for the nation's public hospitals to be planned in a way, which takes into cognisance the peculiar needs of patients and also provides each patient with optimum care for these peculiar needs as regards to the health care needs of the patient.

The purpose of this thesis dissertation is to propose mainly, a redevelopment of the national orthopaedic hospital Igbobi, Lagos with a view to upgrading the various departments structurally. This research shall also examine critically the hospital design concept, which reflects the progressive patient care in general, with particular interest in the last stages of this concept.

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1.1 Problem Statement:

Hospitals, being planned or already built have many problems such as circulation, flexibility both internal and external, physical and functional obsolescence, and e.t.c.

Apart from the above-mentioned problems, the other problem, which is usually overlooked, is the area of overall patient management. This problem of patient management is in the area of bed space provision.

A hospital has a problem of providing bed spaces for the following category of patients.

i An incoming patient who needs medical care but has to be turned back due to the UN-availability of beds.

ii An ambulant patient whom has already shown a considerable amount of recovery but still needs a continuous observation. This patient is usually discharged due to the need of the bed for more acute cases.

iii A patient who has developed complications as regards to his or her disability or problem in the world outside the hospital.

1.2 Aims and Objectives:

The sole aim of this thesis work is to look at the structure of the hospital national orthopaedic hospital Igbobi so as to propose a comprehensive redevelopment. The objectives of this study are

i Studying the various departments of the hospital

ii Studying the inter-departmental relationships within the hospital, looking at the effectiveness of these relationships particularly the physical locations with regards to operational efficiency.

iii Study both adequacy and in-adequacy of existing internal spaces.

iv Study, any other forms of issues affecting the planning and design of the hospital using international and world health standards.

1.3. Motivation:

The main motivation of this thesis work is the author's personal experience in an open ward (surgical ward) of a military hospital. The inherent restlessness, lack of sense of security and comfort, experienced in the said nursing ward, did not fully aid recovery rate, thereby leaving the author with some side effects of the accident suffered.

1.4. Design Scope and Limitations:

The scope of study of this thesis work shall encompass the whole structure of the hospital, looking at its inherent workings. Attention shall however be given to the nursing units' wards with respect to progressive patient care and possible adaptations.

1.5. Research Methodology:

The research methodology shall entail the use of various data which shall be collected from two principal sources, the field research survey and literature review of secondary research materials.

The field research includes,

i Sample surveys.

ii Interviews with both the patients and staff.

iii Personal inferences.

iv Snap shots.

The literatures include

i Journals

ii Magazines

iii Newspapers

iv Textbooks.

1.6. Architectural Significance:

The architectural significance of this thesis work is to help readers understand what redevelopment is in general and what progressive patient care, (P.P.C) is, its inherent workings, adaptations, advantages and disadvantages. it also seeks to serve as a pointer to planning hospitals in ways to making it more restive, confidence building, increasing sense of security and comfortability to improvements of nursing skill, care and personalization of patient management.

CHAPTER TWO

2.0 LITERATURE REVIEW.

2.1 Historical Development Of Hospitals

Hospitals as we know them today are architectural antiques, which bear witness to the struggles of our forefathers to have a healthy body and mind in the face of various ailments, sickness and illness. This ranked high among the fundamental instincts of man, along with the desire for food, shelter and protection. Serving this basic desire, the hospital, shaped by various cultures and aspects of life, thus developed into a significant place and form in the human society.

The evolution of hospitals to modern standards dates back to the early periods of the ancient Egyptians and Greeks, where medicine and healing were associated with the gods and consequently, the existing hospitals then had forms closely resembling the forms of temples and in some cases the temples of gods became healing centres.

Another characteristics common amongst the Greeks and the Egyptians was the laying, by the roadside, of the sick for passers - by to see and if in position, offer advice on how the patient could be cured.

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In the modern sense what could be termed to be a hospital, was first seen in India in the 3rd century bc where the need for an area - wide planning of medical facilities was appreciated, and hospitals there were for the sick, an example was the 18 health institutions built by king Asoka in the 273 bc. Here the attendants, who were Hindu, were instructed to give gentle care to the sick, provide food, prepare medicines, give messages and maintain a high level of personal hygiene.

With the emergence of Christianity and its consequent adoption as a state religion by Emperor Constantine in 335a.d,constantive decreed the building of Christian hospitals. St. basil, Constantine's successors built between 369 and 372 ad a hospital in caesarea called Basiliade in his honour.

A follow-up of this act resulted in the building of similar institutions at Byzatium 398ad by St. John of Christendom, and Alexandria by St. Isidore. in the reign of emperor Chartemagne, as the roman emperor, he proposed in 816 ad that hospitals are built near the cathedrals and within easy reach of clergymen. Monasteries of the Middle Ages were built close to hospitals and infirmaries, (see Plate 1) Within this same period a hospital was built in Scotland in 845.A.D under the Synedal canons, it had areas for bed-ridden, convalescent and incurable patients.

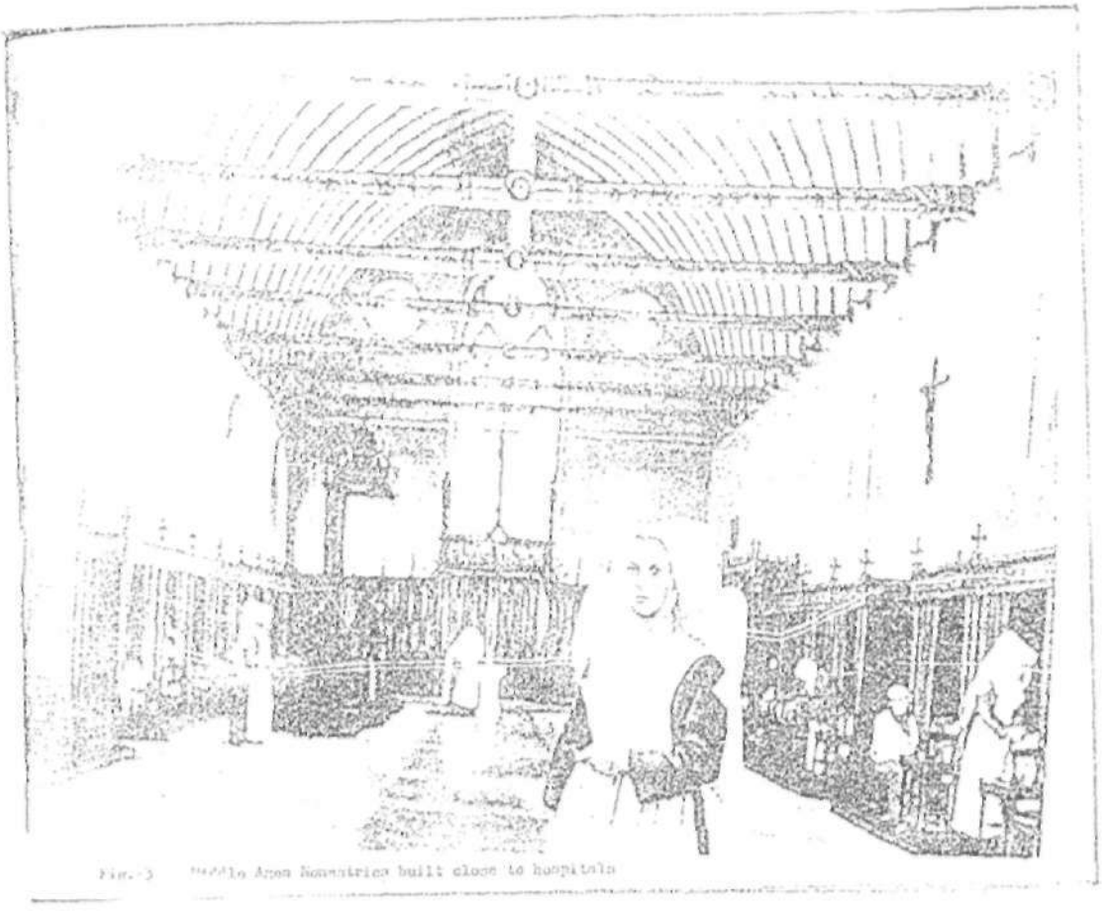


Plate 1. Showing monasteries of the Middle Ages built close to hospitals and infirmaries.

When the crusades ended, the crusaders (knights) came back with stories of the size and completeness of hospitals in the east and enlightened their fellow countrymen on the need to have the same. The eastern hospitals such as in Alexandria, Damascus, Tunis and Coretera were Moslem hospitals where a college was attached to every mosque and to every college was attached a hospital. The Moslem hospital reputed to be the most splendid was In Cairo, Garrison described it as "the great Al-mansur hospital in Cairo 1270. It was a huge quadrangular structure with fountains playing in the fair courtyards, separate wards for important diseases, wards for women and convalescents, a lecture room, extensive library, out-patient clinics, diet kitchens, an orphan asylum and a chapel. It employed both male and female nurses. The sleepless were provided with soft music or, as in Arabian nights with accomplished letters of tales."

In Europe, the development of hospitals was also gaining grounds in the middle ages, there was the Abbey hospital in Switzerland built in 820 ad, which was followed by the Hotel Dieu of Pains built in 820A.D. this was the first general hospital in Europe with four wards for various patients, one for convalescents, and another for maternity patients, with other

auxiliary facilities. Other hospitals in Europe during the 12th century are:

i St. Bartholomew's in England - 1137AD

ii Sante Spirite in Sassia, Rome - 1204 AD

iii St. Thomas in England - 1207 AD

iv St. Mary's of Bethlehem - 1247AD

The 14th century witnessed a lull in hospital development due to the following factors :

i The church edict of 1163 which forbade clergy from performing operations.

ii The occasional promulgation of decrees which limited the activities of the clergy.

iii Indiscriminate lumping of patients together irrespective of the type or seriousness of their illness. The above mentioned factors stalled the clergy's appetite to work but with the rekindling of the quest of knowledge which the Renaissance period brought, there was a renewed interest in all dormant learning, (hospital development and medicine inclusive). It was during this period that the medical profession progressed due to the following:

i Printing of ancient Greek medical writings.

ii Anatomy became a recognised study.

iii Municipal hospitals grew in number and gradually replaced the monastic hospitals of the Middle Ages.

iv Surgery was placed on scientific basis.

Peter Dike (1971) quoted Isidore Rosenfield: hospital Architecture and beyond as stating that it was "Not until the 18th and early 19th centuries was the problem of hospital planning treated on a functional and scientific basis. The pavilion type was evolved segregating patients into small groups and ensuring natural lights and ventilation".

The first half of the 19th century witnessed a relapse in hospital development due to the following:

i The surgeons belief that suppuration was desirable and thus encouraged it. This made hospitals wards to be filled with discharging wounds, which made the atmosphere, was offensive that the use of perfumes were required. Nurses, at that period adopted the use of snuff to make the conditions tolerable.

ii Bad hygienic attitude of the medical staffs, whereby surgeons wore the same operating coats months without washing and same set of bed linen served several patients.

iii Replacement of clerical attendants with laymen whom were selected indiscriminately.

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The mid 19th century witnessed a positive leap-forward in hospitals development with discoveries such as:

a The discovery of Anaesthesia

b The development of scientific techniques in diagnosis and therapy.

c The principles of antiseptic.

d Introduction of steam sterilisation.

There was also a revolution in nursing care, which was orchestrated by Florence Nightingale. She held that the existing hospitals, then, lacked standard natural lighting, ventilation, space and the crowding together of a great number of sick. In her nursing notes she stated that bad nursing situation was brought about by bad administrative arrangements, bad architecture and sanitation, which makes it difficult or impossible to nurse. She also introduced the principle of progressive patient care whereby the sickest patients were placed in beds near to the nursing station and the convalescence patients were placed further away.

This development, from an architectural point of view led to the separation of the treatment and nursing facilities, with each requiring a specific location and architectural form.

The 20th century has witnessed an increase in hospital occupancy due to the following reasons:

i Increase in world population.

ii Increased confidence in hospitals as healing homes.

iii Rapid growth in the field of nursing education.

iv Emphasis on "Progressive Patient Care".

v Increased technological development and its attendant side effects.

vi Increased sophistication and development of human endeavours.

2.2 TYPES OF HEALTH CARE

Most health care delivery systems, no matter administrative structure, source of finance, e.t.c comprise of a range of institutions which are graded according to their degree of complexity, specialisation and level of care they provide.

Three main levels of health care can be identified and they are the primary, secondary and tertiary services.

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2.2.1 PRIMARY CARE:

This is mainly a community based health care service, which is relatively accessible to the patients. The services provided here are preventive

health care such as anti-natal and child care simple diagnosis and treatment and immunisation programmes. In this category are health care units, dispensaries and clinics. These are mostly referred to as general hospitals.

2.2 SECONDARY CARE:

The general hospital belongs to this level. Patients are referred here from primary care units for a more elaborate and sophisticated diagnosis and treatment.

2.3 TERTIARY CARE:

Highly specialised services, which are usually not found at the secondary level, can be found here. It includes specialities such as cardiology or cardiac surgery, plastic and neuro-surgeries. Teaching hospitals, specialist and specialist-teaching hospitals fall into this category.

3. HOSPITALS TYPES:

A small building could be termed as a hospital serving a remote rural area or a complex with large teaching and research elements and over 1000 beds. Most hospitals provide a 24-hour medical and nursing care of sick or disabled people. The difference

between primary (that is a non-hospital) and hospital care depends on the form of health service offered. There are different kinds of hospitals, with a wide or specialised range of health services offered. They are:

i General hospitals

ii Teaching hospitals

iii Community hospitals

iv Specialist hospitals.

2.3.1 GENERAL HOSPITALS:

These type of hospitals are large and provide for all but the more esoteric of specialist services. Their size is measured in bed number terms, which ranges from 200 to well over 1000 beds. They accept patients of all ages with all types of ailments

2.3.2 TEACHING HOSPITALS:

These are hospitals, which provide for the training of undergraduate medical students and may contain significant research facilities. It may also contain university medical academic departments in addition to the above - mentioned facilities. A teaching hospital may also have specialist units, which are provided on a regional basis.

2.3.3 COMMUNITY HOSPITALS:

This are small hospitals of about 50 - 150 beds, intended to serve a small low-key neighbourhood, containing non-acute and long stay beds; limited diagnostic and treatment departments and staffed by general care. They provide for patients transferred from the general hospital, for medical cases where home circumstances prevent domiciliary care and for some long-stay geriatric patients. Community hospitals are increasingly associated with health centres.

2.3.4 SPECIALIST HOSPITALS:

These types of hospitals deal with one category of patient only. They provide post-graduate teaching and research in their speciality. Many of such hospitals are large and remote. The boundaries between medical, housing and social services are changing with regards to these groups of patients.

2.3.5 CLASSIFICATION AND CATEGORIES

Hospitals may be classified in the three principal ways e.g. ownership, length of stay of patients and type of services provided.

OWNERSHIP:

Hospital ownership differs from country to country. In USSR, the government owns all hospitals.

In Japan, most hospitals are owned by private business organisations. In Europe, there exist a mixture e.g. non-profit, church owned, government owned, privately owned hospitals. In the United States of America, there are four principal kinds of owners - voluntary non-profit corporations, religious bodies, government agencies and private owned, government owned and mission owned hospitals.

LENGTH OF STAY:

Hospitals in this type of category are of two types

i Long term hospitals and

ii Short-term hospitals.

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The distinction between the two is that patients in the short term spent three weeks or less while in the long term, patients spend a month and above. Hence the orthopaedic hospital is a long-term hospital.

2.4 THE ORTHOPAEDIC SPECIALIST HOSPITAL

This is a hospital that handles and treats orthopaedic cases. Hence, an orthopaedic specialist hospital is a hospital that specialises in the treatment and management of diseases and injury of the bone and the connecting tissues to the bone. There are also orthopaedic teaching hospitals that in conjunction

with the primary roles of health care delivery conduct education and research in the field of orthopaedics.

2.5 THE ORTHOPAEDIC HOSPITAL FACILITIES

Hospital functions here can be generally classified in the following six facilities; and they are:

i. The Adjunct Diagnostic and Treatment Facilities
ii. The In-patient Facilities
iii. The Administrative Facilities
iv. The Supply system
v. The Utilities
vi. The House keeping Facilities.

2.5.1 ADJUNCT DIAGNOSTIC AND TREATMENT FACILITIES:

These facilities encompass departments that handle the diagnosis of a patient and also subsequent treatment. The in-patient is brought to this area while the outpatient walks into the same area. It includes the following:

i. Medical: The accident and emergency and the outpatients departments.
ii. Surgical: The operating theatre and a recovery suite
iii. Pathology: Laboratories including autopsy.

iv. Radiology: therapy such as cobalt and radium and diagnosis such as radioactive isotopes.

v. Pharmacy: Dispensary

vi. Physical Medicine: Prosthetics and orthotics and physiotherapy.

2.5.2 THE IN-PATIENT FACILITIES

The patient is the reason for the hospital set-up because everything revolves around the patient. most of the patient's stay, if not all, is spent in the ward. The aim and objectives of a good hospital design is to relieve the patient's fears and make the patient's management less cumbersome to the nurses.

2.5.3 ADMINISTRATIVE FACILITIES:

This comprises of administration and economy. It controls the influx of patients and their disposition though the in-patient facilities. It also handles the purchase of stores to feed the supply system.

2.5.4 UTILITIES:

Hospital functions must be protected against external elements for proper functioning which includes some degree of controlled environment and energy supplied in various forms. This system's major function is the operation of the mechanical plant.

2.5.5 THE SUPPLY SYSTEM

Hospital activities require equipment to work with in which there must be a system of mechanises supply. Being a complex institution, it requires the supply of different items i.e. drug food e.t.c. The main problem here is the non-proximity of units that includes the in-patient and adjunct diagnostic and treatment facilities. This system includes central sterile supply department and central general stores.

2.5.6 HOUSE KEEPING FACILITIES:

These facilities are mainly concerned with the cleanliness of the hospital, personnel, and patients and as well as feeding. It includes the laundry and dietary departments.

2.6 ORTHOPAEDIC CASES

Orthopaedics can be divided into two groups, which are;

i. Orthopaedic trauma (emergencies)

ii. Cold Orthopaedics (congenital anomalies)

Cold orthopaedics (congenital anomalies) involves inborn diseases and deformities mostly with children. It could also be due to infections.

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Orthopaedic traumatic are mostly emergencies as a result of accidents affecting the bone or any kind of bone fracture.

2.6.1 DISEASES OF THE MUSICLO - SKELETAL SYSTEM AND CONNECTING TISSUES.

Diseases such as

i. Disorders of joints

ii. Ankylosing sponchylities

iii. Rheumatoid arthritis

iv. Other arthopathies

2.6.2 DISEASES OF THE BONE

i Tuberculosis of the bone.

ii Viral diseases e.g. Acute poliomyelitis which affects the limbs of children.

iii Tumour of the bone.

iv Spinal cord disease e.g. Parkinson's disease.

v Diseases of the skin and sub-cutaneous tissues that affect the bone.

vi Tetanus of the bone.

vii Infertile cerebral palsy.

2.6.3 INJURIES OR FRACTURES OF THE BONE

These are caused by the following:

i. Homicide

ii. Occupational injuries from war, factory works e.t.c.

iii. Accidents

iv. Suicidal and self inflicted injury.

2.6.4 PATIENT SOURCES

In-patient sources are from the following;

i. Private clinic referrals

ii. Accident and emergency admission

iii. Other hospital referrals

iv. Walk-ins (patients or individuals that will simply come in and those from traditional bone setters)

2.7 ORTHOPAEDIC MEDICINE IN NIGERIA

Healing is generally as old as the existence of man. Pre-historic man knew that bone injuries (fractures) were physically caused. Traditional bonesetters have been practising even before the pre-colonial era. Majority of the people in the rural areas and quite a large number of people in the urban centres prefer these traditional bone setters, because most of them feel that it is the best form of bone-healing procedures.

Western medicinal practice was imported in Nigeria during the colonial era, presently only 3 orthopaedic hospitals exist in the country namely;

The National Orthopaedic hospital Igbobi, (which was built as a rehabilitation centre for wounded soldiers of the West African Frontier Force after the second world war). It was built in the 1945.

The national Orthopaedic Hospital Enugu was born as a rehabilitation centre to cater for the aftermath of the civil war in Nigeria. It was founded in 1974.

The Dala orthopaedic hospital, Kano which was planned and built to serve the northern region of Nigeria, it was opened on the 21st December 1959.

Data has shown that, the three existing orthopaedic hospitals cannot cater for their patients and are lagging behind technologically.

2.8 REDEVELOPMENT CRITERIA:

The U.S.P.H. publication of may 1965 on the guidelines on hospital modernisation. stated that "many large hospitals in urban areas were becoming obsolete and increasingly inefficient to operate, yet they provided specialised services, set standards of quality care, conduct research, apply the latest advances in medical science and train future health specialists. Due to the complexity of hospital buildings, they tend to become obsolete sooner than other types of buildings.

There are many factors that can make a hospital obsolete and in need of redevelopment, these factors are:

i Physical Obsolescence.

ii Functional Obsolescence.

iii Architectural layout.

iv Hospital Size

v Circulation.

2.8.1 PHYSICAL OBSOLESCENCE:

The deterioration of the structural fabric, materials and finishes and also the overtaxing of mechanical and electrical equipment cause physical Obsolescence of a hospital. If maintenance is poor, physical obsolescence is accelerated. Any plant well maintained may however lack many physical features that are essential in hospitals today. Corridor width, column locations and window arrangement may give rise to the need, for an ideal re-arrangement of space for the present needs of the hospital.

2.8.2 FUNCTIONAL OBSOLESCENCE:

Functional obsolescence can occur to a hospital well maintained with slight deterioration. Functional obsolescence is due to

i Changes and advances in medical concepts, practices and research.

ii Change in the use and organisation of hospital departments.

iii Change in population size and neighbourhood served.

Most hospitals find it difficult, if not impossible, to Fit in addition services, that has become their responsibility into existing envelopes, and the additions are necessary for increased functions.

2.8.3 ARCHITECTURAL LAYOUT:

An architectural feasibility survey should be carried out to determine, how the facility can be modernised to carry out the programme that has been developed. Existing spaces and departments in the hospital should be evaluated critically to prepare a functional plan of the proposed redevelopment, originally drawings should be gotten to assist in the evaluation but wherein these do not exist or are in-accurate the architect should prepare an architectural layout of existing buildings.

2.8.4 HOSPITAL SIZE:

The size of a hospital is usually determined by its number of beds, this also determines its need for support services.

Various standards of bed per population have been employed by different countries to determine the size of a hospital. For example in America the standard is 10 beds per 1000 people, while in Egypt it is 3 beds per 100 but due to reasons such as lack of adequate technology and enough medical personnel. And the antipathy of the populace to hospitals and medical care, the Nigerian Medical Association recommends the use of 2 beds per 1000 people and 3 beds per 1000 people in the various urban areas.

2.8.5 CIRCULATION:

This is an important ingredient in hospital set-ups. Two types of traffic exist within a hospital and these are the internal (pedestrian) and the vehicular circulation. Circulation should be worked out as carefully as possible to avoid the crossing of paths of peoples especially in-patients and visitors. Separate entrances should be provided so as to separate traffic from without to within. In-patient traffic should be separated from the other entrances. Emerson Goble in his paper in the Architectural Record book on Hospitals, clinics and health centres, titled "Hospital

planning starts with circulation " stated that the primary principle of circulation schemes is the protection of the patients.

It also involves the integration of the various departmental traffic, which separation is achieved within the hospital, traffic routes should be as short as possible and important functions should be protected from intrusion. Apart from the above mentioned factors in circulation such as traffic separation, minimising or shortening of travel distance and patient protection there should also be a form of control and supervision to limit wandering into restricted areas.

CHAPTER THREE

3.0 PROGRESSIVE PATIENT CARE

3.1 PREAMBLE:

Perry Ellen (1978) in her book "Ward Management and teaching "defined Progressive patient care (P.P.C.) as a system of care, whereby a patient on admission into the hospital is "progressed" from a nursing unit or ward, if and when his needs for the type of care provided alters.

She also explained that the principle underlying this system of care was the centralisation of resources required for the care of patients at the different stages of the patient's illness.

Dike Peter. E in his unpublished thesis of (1971) "The single storey general hospitals as a growth institution" describes it as a principle of classification of patients into nursing units, according to their illness and nursing needs.

This concept was originated by Miss Florence Nightingale in England, in the mid 19th century, in her operation of open wards. She was of the idea that the sickest patients be placed in a bed nearest to the nursing station and convalescent patients further away. The concept of P.P.C. and its wide applicability in

European hospitals started in the early 1950s and it has been developed to overcome the initial deficiencies of the conventional nursing unit (ward) giving rise to the categorisation of patients, and compartmentalising them according to their nursing needs into nursing units of patient rooms, and by principle nursing and hospital facilities are organised to provide each patient with the amount of care and nursing that is need by the patient. Also Raven .J. in her paper, "the nurse and her requirements". Delivered to the Royal Institute of British Architects (1960) was of the view that patients be grouped according to their medical and nursing needs, rather than by actual diagnosis to make the best use of nursing personnel and hospital facilities. Dr. E. T. Thompson, while addressing a conference in Washington in 1962, declared that "By 1970, the hospital without the Progressive Patient Care would be as obsolete as an ox cart on a modern highway".

The concept is utilised in two ways; which are:

i Categorising patients according to their nursing needs in wards.

ii Giving the recovering patient continual direction to the point of maximal rehabilitation.

Facilities required for full implementation of progressive patient care are:

i. Intensive care or intensive therapy units.

ii. Intermediate care units

iii. Self care units.

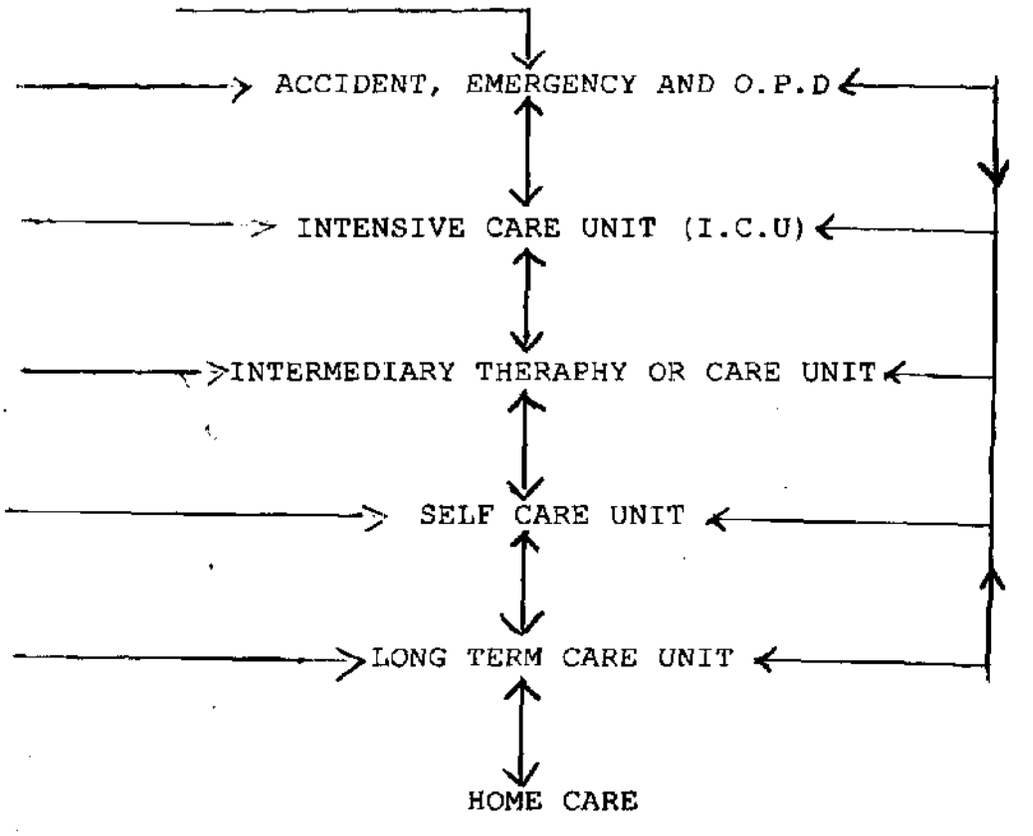
iv. Long - term units.

v. Home care.

The first four facilities are provided by the hospital while the last is with support of hospital services if necessary. See figure (1)

PROGRESSIVE PATIENT CARE SYSTEM

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Reverse progression and inter-unit transfer

Admission through progression

Direct admission

Figure (1) GRAPHICAL REPRESENTATION OF P.P.C SYSTEM

3.1.1 INTENSIVE CARE (I.C.U.)

Critically ill patients requiring constant observation and for whom emergency measures may be required for, any time. Resources are geared to meet the needs of these patients. Resources such as all necessary life-saving emergency equipment, drugs and supplies and also skilled nursing staff. Patients can be admitted directly to the unit or transferred from other units.

The I.C.U could be located as:

i An adjunct to surgical suite recovery room.

ii An integral part of an active nursing unit.

iii A separate nursing unit with separate staff, nursing stations and services.

Internal space should also be spacious due to the nature of equipment and staff required to service this unit, also location of the unit should reduce travel distance from the operation theatres and possibilities of cross infection.

The average lengths of stay in these units are about 2 days.



Plate 2 ILLUSTRATION OF INTENSIVE CARE UNIT.

3.1.2 INTERMEDIATE CARE:

The majority of patients nursed in acute wards would probably be assessed as requiring intermediate care. These patients require a moderate amount of nursing care but not constant observation i.e. patients admitted for investigation and or treatment. Also patients with.

i Predicable rapid recovery rate.

ii Slow recovery and a period of hospital stay are less predictable.

iii Short term ambulation but are not well enough to look after them selves.

iv Terminal illness and require palliative treatment.

Whilst these need a great deal of skilled nursing, the facilities provided by an intensive care unit are not required.

Patients could be admitted directly to this unit or transferred from other units, such as the I.C.U. and occasionally from the long term or self care units.



Plate 3 INTERMEDIATE CARE

3.1.3 SELF CARE:

This is a minimal care and convalescence unit and it provides for patients whom are ambulant, perform their own care such as; washing and dressing themselves without assistance and to take their meals in communal dining - room. Here the patients are weaned from dependency on "father surgeon and mother nurse" by teaching them to cope with their problems and helping them adjust to life outside the hospital. Patients admitted to this unit are:

i Those physically self-sufficient but require diagnostic procedures undertaken which are not feasible on an outpatient or office basis, but necessitate admission into hospital. Such patients are admitted straight to this unit.

ii Those who are recovering from illness and need an intermediate period in which they are reasonably ambulant to enable them adjust to life outside the hospital.

The self-care unit should be designed to look like home so as to enhance the patient's recovery. This unit should have single rooms or two or four bedrooms each with its own bathroom and lavatory. Comfortable sitting rooms and a dining room are needed. The self-care unit should be within easy reach of diagnostic facilities, due to the number of patients whom will

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need to visit these facilities to have investigations performed. Patients can be transferred here from the intermediate or the long-term units.

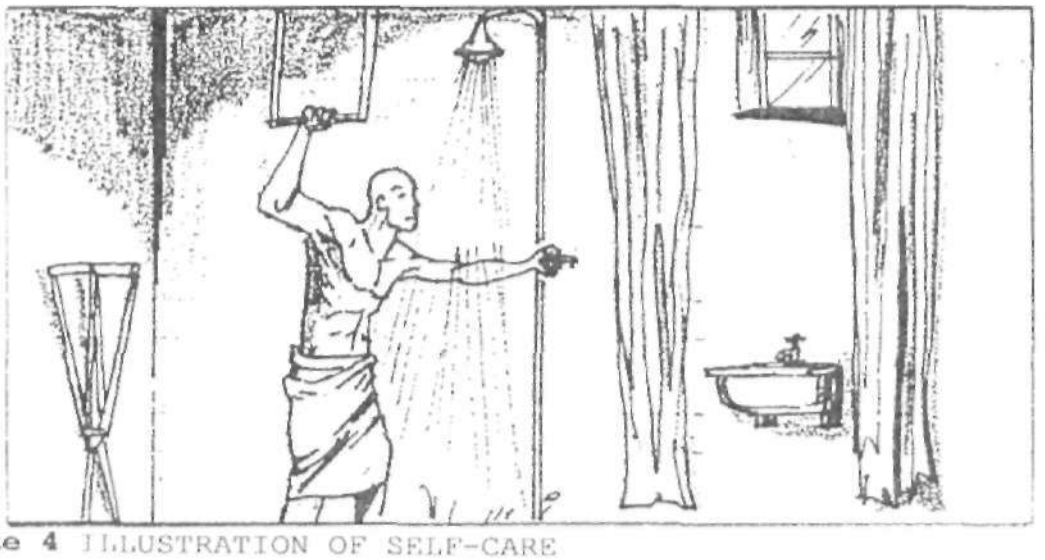


Plate 4 ILLUSTRATION OF SELF-CARE

3.1.4 LONG TERM CARE:

This units provide for the needs of patients suffering from chronic illness and are likely to require treatment in hospital for a long period. They also cater for the needs of patients who are being rehabilitated for whom full or partial restoration of function is possible, and also those unlikely to improve; such patients may remain in this unit during the terminal stages of their illness, with supportive treatment provided. Examples of patients whom might derive benefit from the services of this unit are hemiplegic patients, those suffering from congestive heart failure, cerebral arteriosclerosis, multiple

sclerosis, arthritis or geriatric patients or even those being rehabilitated following an amputation.

Patients can be admitted directly to this unit or be transferred from the intensive or intermediate care units.



Plate 5 ILLUSTRATION OF LONG TERM CARE

3.1.5. HOME CARE:

This is designed to cater for the needs of patients who can be suitably cared for in their own home through the extension of certain hospital services. It breaks the over-dependence of long term patients in hospitals. Home care may be supplemented by treatment in day hospitals and outpatients department.

3.1.6 ADVANTAGES OF P.P.C.

The advantages of progressive Patient Care are the following;

i. It helps to improve the management of patients as they are categorised according to their nursing needs.

ii. It improves nursing care.

iii. It prioritises patient management of patients into the personalization of the patient management i.e. the patient is given the type of care when and if needed.

iv. Reduces hospital-running cost, in the sense that equipment are used to manage specific cases.

v. Gives optimum health care to each patient at the different stages of medical care.

vi. Reduces cross-infection and noise disturbances between patients

vii. It has positive psychological effect on the patients.

viii. It helps in the management of stigmatised patients. Giving them the required privacy from strangers and the family is trained to cope with them.

ix. Speed up patient recovery.

x. Helps in patient teaching and rehabilitation.

3.1.7 DRAWBACKS OF P.P.C.

Progressive patient care has many factors militating against it. The factors are:

i. Cost: The cost of setting up a facility is quite high with the prevailing socio-economic situation.

ii. Trained Manpower: There is lack of properly trained manpower especially in the nursing area, which are in essential to its success.

iii. Equipment's: There are no modern equipment's or the cost of acquiring one is quite high, also the training of staff, to operate and maintain these equipment's is costly due to its special nature.

iv. Illiteracy level: The illiteracy level of the society is quite high.

v. Patient Co-operation: There is a need for patients to be educated, so as to offer co-operation to the medical and nursing staff.

3.2 THE NURSING UNIT (WARD)

When a patient is admitted, the patient spends a number of days in the nursing unit otherwise known as a ward. The ward system could be an open-ward system or a patient room system. It is here the patient is cared for, fed, bathed and also visitors are received here.

The decision on the type of ward system to be employed is based on the following factors stated below:

i. Amount of privacy needed.

ii. Current medical concepts i.e. the treatment of a patient by a multi-disciplinary team.

iii. Amount of flexibility required.

iv. Travel distance of the nurse to the patient.

v. Cultural and socio-economic considerations.

3.2.1 THE OPEN WARD SYSTEM:

This ward system combines about 30 patients of varying categories of age, sex and illness peculiarity together i.e. females are grouped together, while males are grouped together, in a ward. These groups of patients are put under the care of a group of nurses, with the nursing station in the centre of the ward.(see figure) Dr. B. Duru in his article entitled "Improving Nigeria's Health Care Delivery System" in the Daily Times newspaper of Monday December 7th 1981, stated, that the open-ward system should be abolished in general and replaced with private and semi-private rooms because as he reasoned, open wards were dehumanising. The advantages and disadvantages of this ward system are enumerated in the next page.

Advantages are:

i. Perpendicular arrangements of beds in the ward ensure ample visual visibility of patients by the nurse at all times.

ii. Adequate light and cross-ventilation is achieved.

iii. Patients enjoy the company of a wider community.

iv. Reduction in construction and maintenance cost due to non-availability of internal partition walls.

v. Patients have a view of outside world through Windows.

Disadvantages are:

i. Noise disturbances to patients from any of a patient's visitors coming to visit the patient.

ii. Lack of privacy to the patients, as they are exposed to different strangers.

iii. There is a danger of cross-infection in between patients, or from passers-by and visitors or from contaminated supplies.

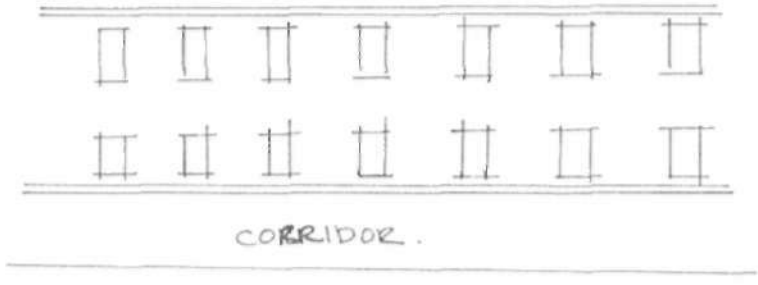


Figure 2: OPEN WARD

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3.2.2 THE PATIENT - ROOM SYSTEM:

This ward system compartmentalises patients into single bedroom, 2 bed to 6 bedrooms. Here patients are guaranteed maximum privacy and also feel at home. Because the patient bedroom replicates the home environment.

Most people and patients interviewed preferred to stay in isolation rooms which were said to be more private than the open wards, and these isolation rooms are more or less patient bedrooms located in an open-ward building.

Advantages:

As mentioned earlier Dr. Duru enumerated the advantages of the patient room system as:

i. Doctors and nurses will be more comfortable with patients as they go on ward rounds.

ii. Patient privacy is guaranteed.

iii. Ward cleanness is promoted.

Other advantages are:

iv. Complete flexibility on admissions (male/female, medical/surgical).

v. Suitable for bed treatment and doctors' consultations.

vi. Noise disturbance is minimised to a great extent as a few people share wards.

vii. Cross-infection is lessened.

Disadvantages are:

i. Poor visual supervision with a high reliance on the call system .

ii. Travel distance could be long.

iii. Boredom and loneliness especially with long-stay patients.

iv. Cost of construction is high due to large plan area.

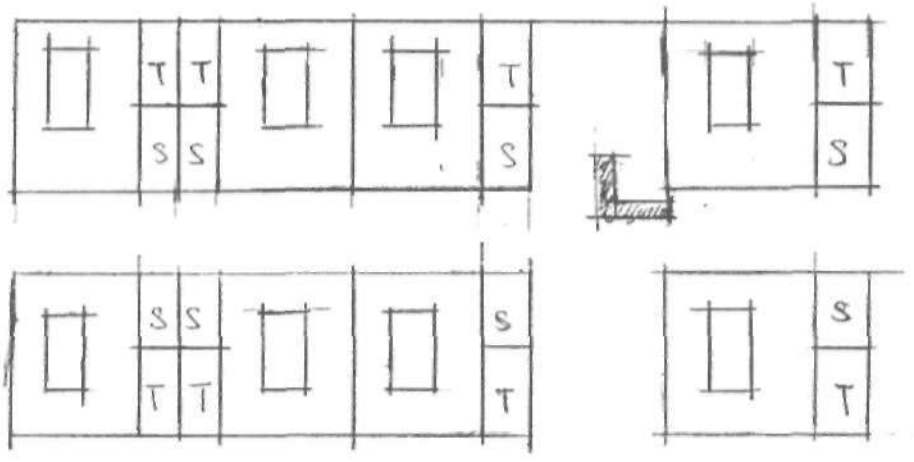


Figure 3: DIAGRAM OF PATIENT ROOMS

CHAPTER FOUR

4.0. ANALYSIS OF THE EXISTING SITUATION

The British colonial masters founded the National Orthopaedic hospital Lagos in the year 1945. It was founded as a public specialist hospital dealing with the management and treatment of injuries and deformities of bones and limbs of the returnee veterans of the 2nd world war. The hospital is located in between the Fadeyi and Onipanu bus-stops in the Lagos mainland metropolis with its main gate accessible from the service lane of the Ikorodu road expressway and its secondary gate accessible from the Morocco road in the Shomolu area. The hospital is a 500-bed compliment hospital with 370 beds being available. The hospital possesses a large ground complex with the built-up area being 60% of total site area.

4.1 DIAGNOSTIC AND TREATMENT FACILITIES

The diagnostic and treatment facilities of this hospital are:

i The Accident and emergency department

ii The Out-patients department (O.P.D)

iii The Radiology department

iv The Pathology department

v The Rehabilitation facilities

vi The Operating theatres.

vii The Prosthetic and orthotic facilities.

These facilities are utilised in the diagnosis and treatment of various orthopaedic ailments; most of the facilities are located in the hospital's central complex while some are located outside the central complex. Those facilities within the hospital complex are linked by a maze of open-ended covered walkways.

4.1.1 THE ACCIDENT AND EMERGENCY DEPARTMENT

The accident and emergency department that is known as the casualty department within the hospital is the first port of the call of the any intending patient. It is located on the southeastern fringes of the hospital grounds. It has both pedestrian access and vehicular (both ambulance and others) access. It is about 5 minutes drive from the main gate and 3 minutes drive from the second gate. It has the traumatic theatre adjoining it at the back and also has the outpatients department behind it, but it is far from the main theatre and radiology department, it can be linked from these and other departments within the hospital complex through the open-ended, covered walkways. The accident and emergency building, which was a bungalow type building, is currently being remodelled into a one-storey structure. It's a

structure built with sandcrete block. It is to far from the prospective patient and it is not easily and prominently located. It needs to be prominently located.

4.1.2 THE OUT-PATIENTS DEPARTMENT (O.P.D.)

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This department is the department that deals with patient's refered to it and those discharged from the hospital. It has both a fracture clinic and an orthopaedic clinic, and just recently a plastic clinic. It is behind the accident and emergency department, adjacent to the traumatic theatre (on the right) and the transit ward (on the left). It is also linked to the hospital complex by an open-ended covered walkway. The O.P.D. is about 7 minutes drive from the main gate and 5 minutes drive from the second gate. It has both pedestrian and vehicle access, although the vehicular access is outside its building periphery. It is about 2 minutes walk to the pathology department, which is behind it, but it is far from the records department, radiology department, and pharmacy department (with whom it should have key relationship). Its building is a bungalow type building of sandcrete block. It is also far for the outpatients especially from the main entry point. Its functions need to be located in a prominent location for easy identification.

4.1.3 THE OPERATING DEPARTMENT

The operating department in the hospital has 2 theatres. These theatres are the main theatre and the traumatic theatre. The main theatre is located within the hospital complex on it Western fringes. It is in the same building with the radiology department (with no internal linkage between both departments), which is a bungalow type building. It is located behind the central stores, adjacent to the pharmacy, and ward A. It has only pedestrian accessibility through the open-ended covered walkways. It is far from the pathology department which has a blood bank storage (which is needed for a patient, that is in need of blood), with which it should have a key functional relationship.

The traumatic theatre is also situated in a bungalow type building and is adjacent to the O.P.D. and behind the accident and emergency department. It has pedestrian access from the open-ended walkway, from the O.P.D. it has no vehicle access internally only on its periphery.

4.1.4 THE RADIOLOGY DEPARTMENT

This department is situated in the same building as the main operating theatre. Its main entrance is directly facing the back of the administrative block and adjacent to the pharmacy and ward A. It has no

vehicular access while pedestrian access is through the open-ended covered walkway. It is should have a key relationship with the O.P.D., accident and emergency department, traumatic theatre and main theatre, but with exception of main theatre, the other departments are far away.

4.1.5 THE PATHOLOGY DEPARTMENT

The pathology department is situated in a bungalow type building made of sandcrete blocks. It is located on the eastern section of the hospital grounds as a solitary standing structure, it is also not linked to the hospital's central complex. It has open-air pedestrian access and vehicle access. The department has 3 laboratories, which are the chemistry, laboratory, the microbiology and haematology laboratories. Relationship within the department is very good, as the laboratory spaces are arranged in a linear manner with internal connecting doors. although internal spaces are adequate, it functions need to be moved closer to the central hospital complex.

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4.1.6 PHYSICAL THERAPHY FACILITIES

The physical therapy facilities existents here are classified as the physiotherapy department the electrotherapy rooms, the hydrotherapy pool,

occupational therapy gymnasium and speech therapy. This facilities are located within the hospital complex, with the main physiotherapy building housing the offices of the physiotherapy department, the gymnasium and the hydrotherapy pool in between the two buildings. The occupational therapy offices and speech therapy office are in an adjoining bungalow building to the gymnasium building. The rehabilitation facilities have pedestrian access from the open-ended, covered walkways, while having vehicle access to its building periphery. The main physiotherapy building is a bungalow type building built of timber, which is deteriorating, while the gymnasium is made from sandcrete blocks and is a storey building that has the whole internal space in double volume. There is a school run by the physical therapy department for paediatric patients in the hospital but it is far from the rehabilitation offices, close to the second gate.

4.1.7 PROSTHETICS AND ORTHOTICS

Prosthetics and Orthotics are twin sciences that deal with the science and art of replacing human limbs artificially and providing assistive aids for human locomotion. The facilities existing are workshops for assistive aids, offices and clinic. The two main buildings of this facility are in the northern location

of the hospital grounds, with the road from the second gate dividing them. They are bungalow type buildings built from wood, which is deteriorating, the new prosthetic and orthotic workshop building is not within the hospital complex but close to the hospital annex within the hospital grounds. There is also a small workshop of the prosthetics and orthotics facility in the hospital annex.

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4.2 INPATIENT FACILITIES

The inpatient facilities of the hospital are the wards housing the various categories of patients. Here patients needing prolonged medication and supervision are accommodated. The paediatric wards are the C and D wards, while the adult male are the A, G, H,J, and E wards of which the E ward is the spinal injury ward. The female wards are the B and F wards. This above mentioned wards are all within the hospital central complex and linked by open-ended covered walkways. The other wards not situated within the hospital central complex are the Mobolaji House Accident Wards (M.H.A.W.) and the Transit ward. The A, B, C, D, E, F, wards are bungalow type buildings which consist of pro-nightingale open wards, 2 cubicles of supplementary wards, nursing station store, kitchen and an adjoining structure housing the toilet and sluice facilities,

they house 30 beds each (See plate 6). The H and J wards are also bungalow type pro-nightingale wards of a different design to the A-F wards, they have all the facilities mentioned including nursing and matron offices, rooms and toilet facilities in one structure. (See plate 7)

The transit ward is a bungalow building built of wood, which accommodates patients whom are invalid due to paralysis of the upper and lower limbs. This ward is in between the O.P.D. and the spinal injury ward. It is pertinent to note that most patients here have stayed in the hospital from 15 to 30 years and are abandoned by their family due to their invalidity (see plate 9). The building material and the building generally have seriously deteriorated.



Plate 6: SIDE VIEW OF WARD B WITH ADJOINING TOILET AND LAUNDRY FACILITIES. IT IS TYPICAL FOR WARD A, C, D, E, F.



Plate 7: BACK VIEW OF J WARD. IT IS TYPICAL FOR WARDS H AND J, N.O.H. IGBOBI.

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Plate 8: MOBOLAJI HOUSE ACCIDENT WARDS

The Mobolaji House Accident Wards is a group of wards situated in a multi-storey building directly opposite the main gate in its front and the hospital central complex behind it. It is an ultra-modern structure with lift facilities to the upper floors and also staircase and ramp facilities, which aid the patients to the various floor. This structure is solitary standing, and is a two-storey building. It is quite imposing and expansive. It has 2 wings of 30 beds per wing on each floor, with one wing for males and the other for females. It has facilities such as side rooms on each wing for patients that don't want to stay in the open ward, doctors and nurses offices, stores, waiting rooms, day rooms, kitchen and a laundry. The nursing station is situated in between the last and middle section of each wing with a view of the other remaining section (i.e. there are 3 sections per wing, see plate 8).

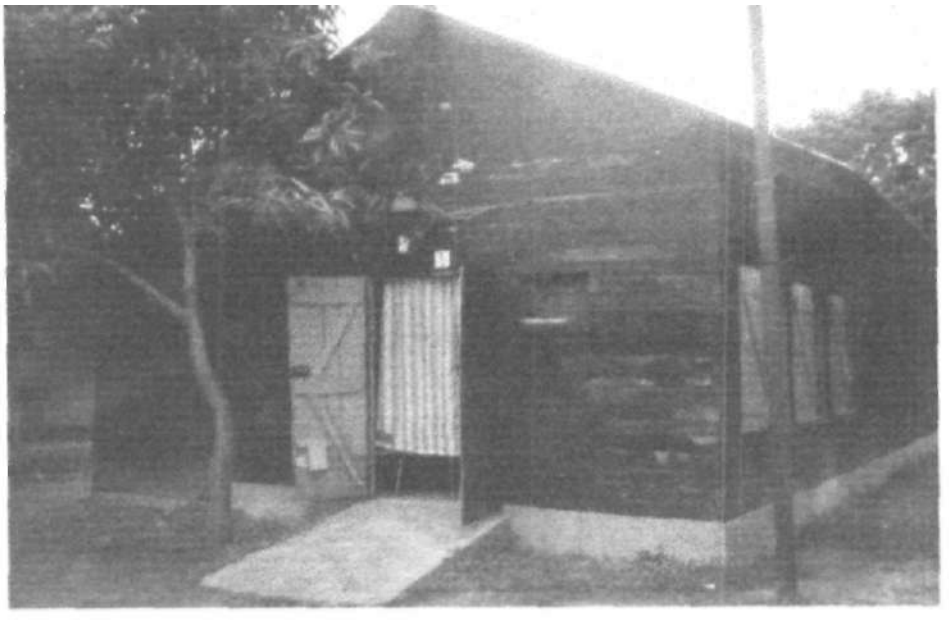


Plate 9: TRANSIT WARD

4.3 THE SERVICE DEPARTMENTS

The service department consists of the kitchen, the laundry central stores, and the engineering departments. They are located opposite the ward C (paediatric ward) and grouped to one side with the exception of the central stores, which is located infront of the main theatre and near the pharmacy. This service department which is mainly the instrumentation workshop is within the hospital complex and constitutes a noise disturbance to the paediatric patients. The central stores have vehicular access to aid the delivery of supplies.

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4.4 THE ADMINISTRATION

The administration building is located infront of the radiology department and pharmacy department and it is easily accessible. It is on the southern periphery of the hospital central complex with the records department opposite it. Its location is quite alright as its is in the centre of the hospital grounds. Its architecture is basically, colonial styled architecture.

4.5 RECORDS

The central record facility is located on the southern most corner of the hospital ground directly opposite the administration building. It is far from the mainly wooden has no corridor linkages to the rest of the hospital, it has only open-air pedestrian and vehicular access.

4.6 CRITIQUE

4.6.1 LOCATION

The hospital is located in the Shomolu local government area of Lagos, along the Ikorodu road expressway, between the Fadeyi and Onipanu bus stop.

4.6.2 ACCESSIBILITY

The hospital is accessible either from the service lane of the Ikorodu road infront or the Morocco road behind.



Plate 10: ENTRANCE VIEW OF N.O.H. IGBOBI LAGOS *FROM IKORODU EXPRESSWAY ROAD.*

4.6.3 CIRCULATION

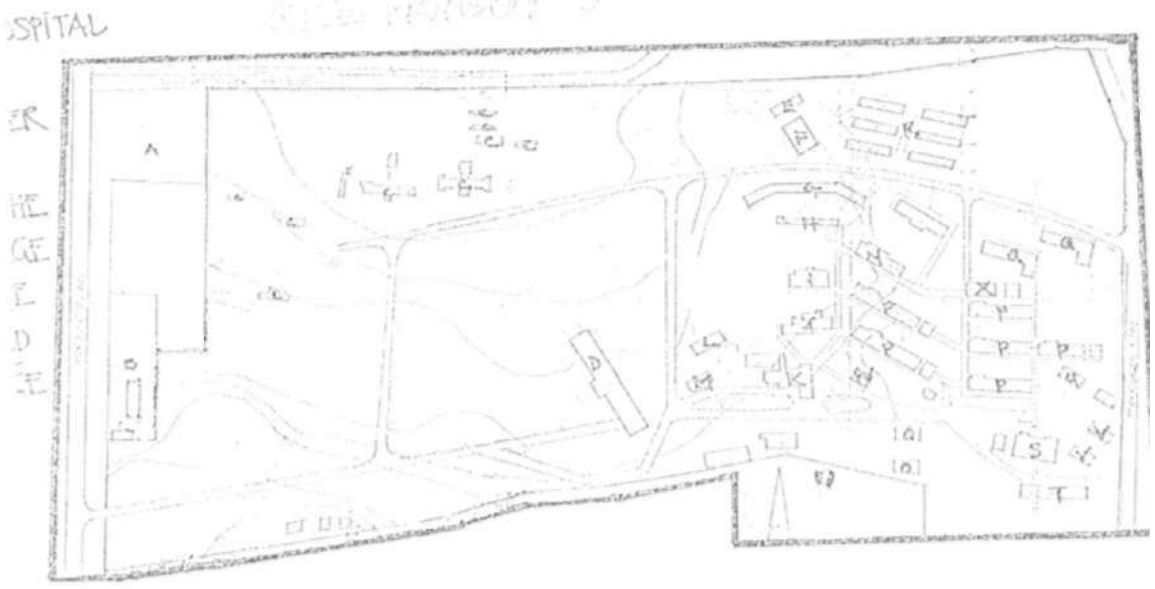
Internal pedestrian circulation is by means of open-ended covered walkway, linking the various departments. Vehicular circulation is around the periphery of the buildings.

4.6.4 ARCHITECTURAL LAYOUT

The present layout of the hospital is a kind of scattered planning with the building sited separately

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and linked by open-ended covered walkways. (See plate 11)



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Plate 11: ARCHITECTURAL LAYOUT OF N.O.H. IGBOBI LAGOS

4.6.5 DESIGN CONCEPT

The design concept employed is the horizontal planning concept, with most of the buildings, bungalow type buildings, with exception of a few buildings, which are storey buildings. Also noted is the segregation of the various building blocks especially in the ward section, which gives adequate day lighting and ventilation.

Internal circulation within the hospital, which is pedestrian, is by means of covered, open-ended walkways, which lead to the various departments. Vehicular circulation is around the periphery of the buildings.

4.6.6 MERITS AND DEMERITS

MERITS

i) The smooth nature of floor surfaces with no Indentations.

ii) Horizontal planning, with bungalow type buildings very good for orthopaedic settings.

iii) Adequate day lighting and ventilation.

iv) Pharmacy and central stores close to wards so it ensures quick supply of drugs and other necessary supplies to the patients.

v) Changes in levels are quite minimal, and if any it is negotiated through the use of ramps.

vi) Angle of inclination of ramps within the open ended covered walkways are gradual.

vii) Widths of walkways are large enough to accommodate a bed and wheel chair at the same time, going in opposite directions.

DEMERITS

i Distance of accident and emergency department from main gate.

ii Entrance of prosthetic and orthotic department too small.

iii Availability of stairs at the entrance of Prosthetics and Orthotics department.

iv Departments with key relationships are far from each other.

v Inconspicuous location of both the main theatre and traumatic theatre

vi Long and confusing stretches of walkways.

vii No proper treatment of surrounding environment

viii Old nature of most of the hospital buildings.

ix Location of instrumentation workshop near to the paediatric wards, thereby constituting noise disturbance to the patients.

x Transit ward made of wood, which has gotten rotten.

4.6.7 PROGRESSIVE PATIENT CARE (P.P.C) APPLICATION.

The hospital has no clear application of the P.P.C concept, the only feature or part of the P.P.C applied is in the spinal injury and transit ward. The wards are basically acute nursing ward. There is no compartmentalisation nor categorisation of patients according to nursing needs, all categorised of patients are grouped together regardless of their nursing needs. The only categorisation done is according to sex i.e. male, female ward and paediatric ward.

CHAPTER FIVE

5.0 CASE STUDIES

5.1 NATIONAL ORTHOPAEDIC HOSPITAL DALA, KANO

This is a 165 bed orthopaedic hospital, formally opened in December 1959. It was built to serve the northern parts of Nigeria. It is a sister hospital to the National Orthopaedic Hospital Igbobi, Lagos and one of the 3 hospitals under the management of the Orthopaedic Hospitals Management Board. It is generally a small hospital compared to its sister - hospital in Lagos. It is located in the Dala L.G.A, Kano.

It was designed after the horizontal block concept with the hospital building s linked by open-ended corridors. The buildings are spread out on the hospital grounds with central concentration of administrative, in-patient and diagnostic and treatment facilities in the south -eastern section of the site. The hospital has 6 wards namely the East, West, Children, Amenity, Female and casualty wards. with the exception of the amenity ward, which is compartmentalised, the rest are pro-nightingale open wards. With the exception of the amenity ward which is compartmentalised, the rest are pro-nightingale open

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wards (see plate 12, 13). The hospital itself is undergoing redevelopment.

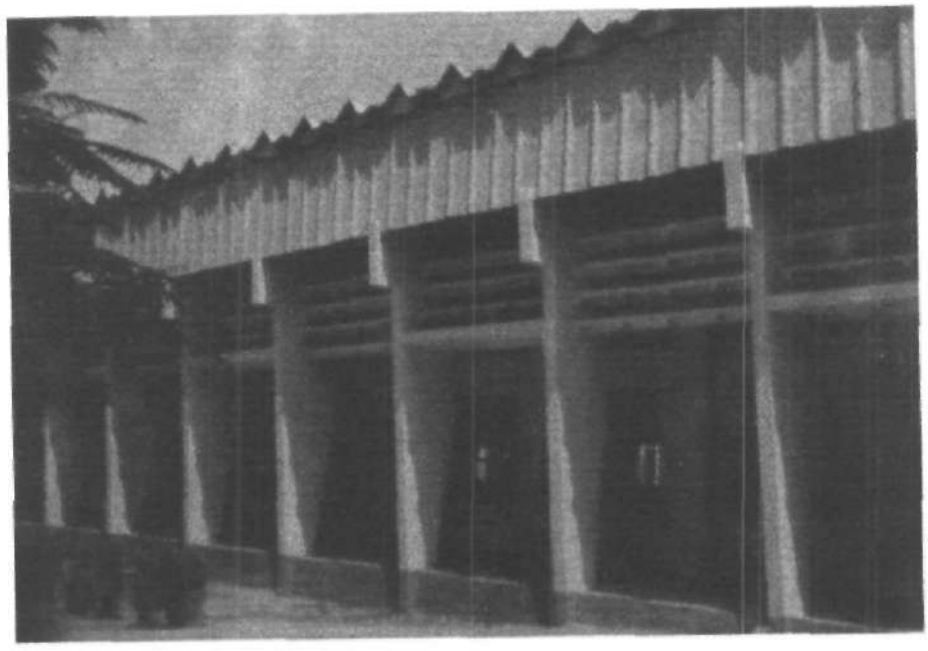


Plate 12: VIEW OF WESTWARD N.O.H. DALA, KANO.

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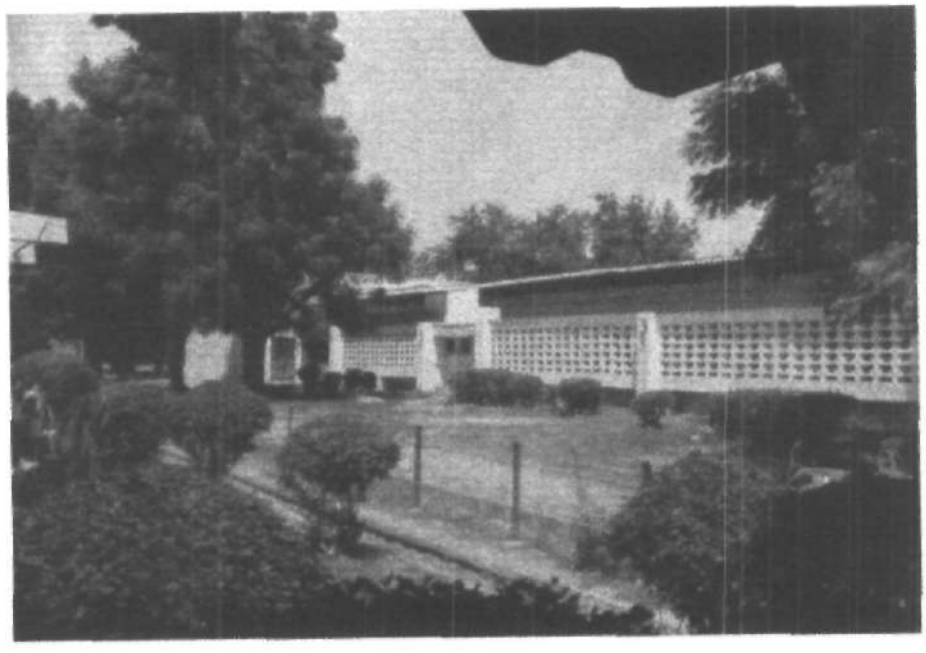


Plate 13: VIEW OF FEMALE WARD N.O.H. DALA, KANO.

5.1.1 LOCATION:

The hospital is located in the Dala L.G.A of Kano along the Kano - Katsina bye-pass road that also leads to Kano City.

5.1.2 ACCESSIBILITY:

The hospital is only accessible from the Kano - Katsina bye-pass road.

5.1.3 CIRCULATION:

There are two forms of circulation within the hospital, the pedestrian and the vehicular, traffic. The pedestrian circulation is chiefly through the open-ended walkways linking up the various departments. The vehicular circulation is restricted to the periphery of the site and the hospital buildings.

5.1.4. ARCHITECTURAL LAYOUT:

The buildings within the hospital grounds are sited separately with linkage through the open-ended walkways. (See plate 14)

5.1.5 DESIGN CONCEPT:

The design concept employed in the hospital is the horizontal concept of bungalow-type architecture. The pavilion-spread in however employed in some areas of the hospital which makes it possible for sufficient delighting and natural ventilation.



Plate 14: ARCHITECTURAL LAYOUT N.O.H. DALA, KANO.

5.1.6 MERITS AND DEMERITS:

MERITS:

i. Travel distance from main gate to accident and emergency and outpatients department is short and ideal.

ii. Horizontal, bungalow type planning is ideal for orthopaedic settings.

iii. There is adequate day lighting and ventilation for the wards due to the distance in between them and the way they were designed.

iv. Location of main operating theatre, in between east and west wards makes for easy transfer of patients towards.

v. There is minimal in-patient travel distance to diagnostic facilities due to close proximity.

DEMERITS:

i outpatient travel distance to diagnostic facilities is far.

ii inclination angle of ramps not gradual.

iii Walkways width not large enough considering the nature of patients.

iv Administrative functions not centralised.

v Supply travel distance is far from wards.

vi No privacy guaranteed in wards due to its open ward nature.

vii Danger of cross-infection to patients from passers-by.

5.1.7 PROGRESSIVE PATIENT CARE (P.P.C.)

There is no progressive patient care provision within the hospital. With the exception of the amenity ward, which is compartmentalised, the other wards are open wards thereby running a risk of cross infection and no adequate security for patients. Also patients with or in different stages of Medicare are nursed together thereby not prioritising the management of these patients except in the I.C.U., which does not enhance optimal recovery of patients.

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5.2 VOM CHRISTIAN HOSPITAL. VOM, PLATEAU

The hospital is a general hospital set up in the early part of this out-going century by two British missionaries Rev. (Dr) and Mrs. P. W Barnden to cater for the health care needs of the people of Vom and its surrounding environment. The government took over in 1975. The hospital is a bed hospital.

5.2.1 LOCATION:

The hospital is located in the VOM L.G.A of Plateau State directly infront of the vow main motor-park.

5.2.2 ACCESSIBILITY:

It is directly accessible from the main road that comes from Jos in Vom town.

5.2.3 CIRCULATION:

Pedestrian circulation is by means of a 2.4 meters wide polygonal covered walkway, which is on the periphery of the large central courtyard of the hospital and linking the various departments. Vehicular circulation terminates at the parking lot by the gate infront of the O.P.D. Staff parking is behind the O.P.D. building.

5.2.4 ARCHITECTURAL LAYOUT:

The general hospital layout is based on a radial, polygonal concept. A polygonal corridor informs of a ring road connects all the various individual units together. (See plate 15)

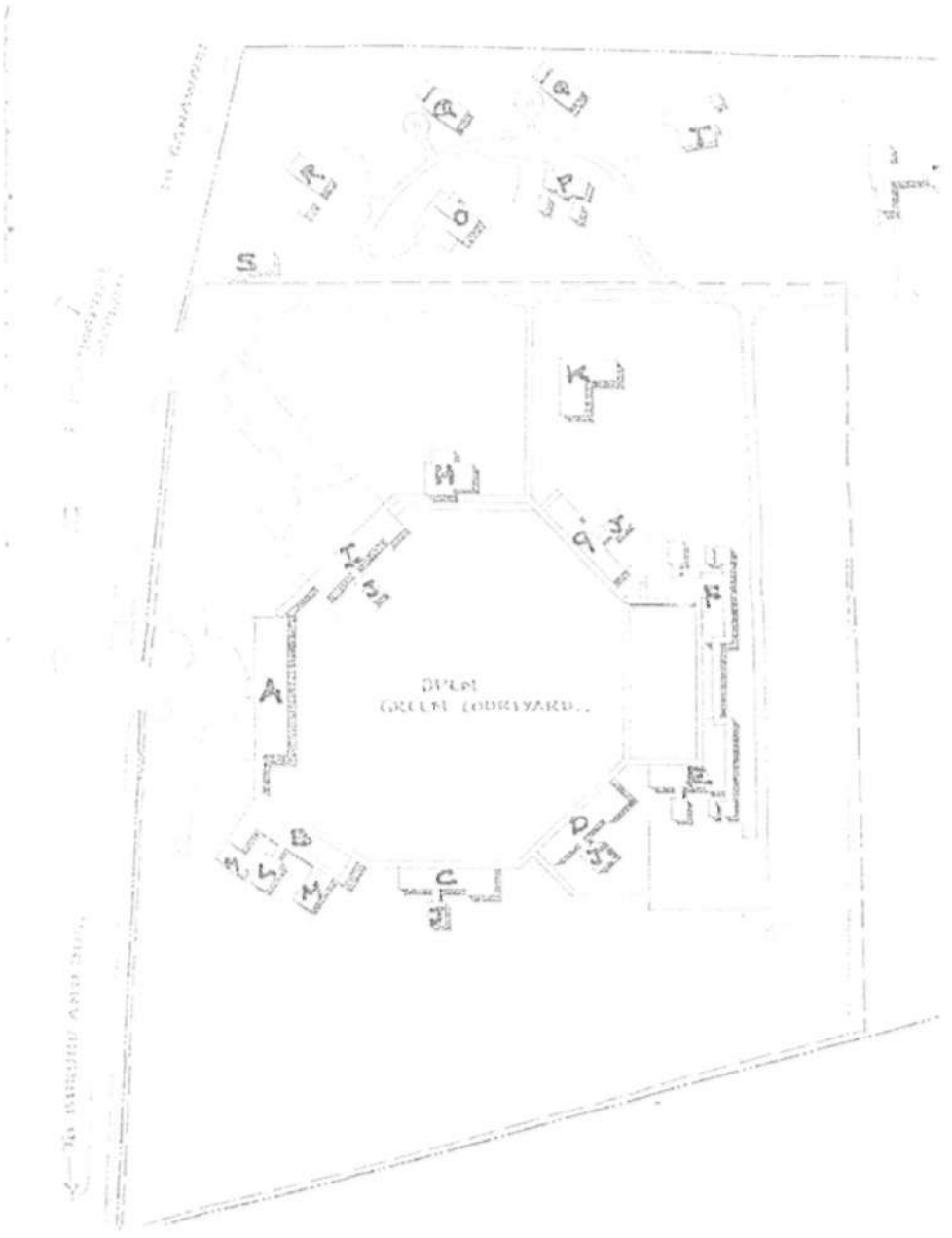


Plate 15: ARCHITECTURAL LAYOUT OF VOM XTIAN HOSPITAL, VOM.

5.2.5 DESIGN CONCEPT:

The hospital buildings are mostly bungalow type buildings sited separately but linked by a polygonal corridor.



Plate 16: MALE SURGICAL WARD AND THEATRE, VOM XTIAN HOSPITAL, VOM.



Plate 17: INTERNAL VIEW OF FEMALE MEDICAL WARD.



Plate 18: INTERNAL VIEW OF MALE SURGICAL WARD

5.2.6 MERITS AND DEMERITS

MERITS

i Travel distance of outpatient is quite short due to the adjunct diagnostic facilities close to the entrance gate of the hospital complex.

ii Easy Transfer of patients from the operating theatre to the wards due to its location in-between the male and female surgical wards.

iii Travel distance from nursing station to patient bed is minimal.

iv Adequate day lighting and ventilation.

v Certain amount of privacy guaranteed for patients ward and compartmentalisation in the amenity wards.

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DEMERITS

i In-patient travel distance to adjunct diagnostic facilities is far, long and in a roundabout manner.

ii Inadequate size of a O.P.U waiting area,

iii Closeness of O.P.D to main gate could lead to overcrowding.

iv No toilet facilities in Radiology and Pharmacy department,

v No central sterile supply unit.

7 PROGRESSIVE PATIENT CARE (P.P.C)

With the exception of the amenity ward there is no clear P.P.C application. It primordial form is employed whereby the sickest patient is placed in a bed near the nursing station and the convalescence patient is placed in a bed far away. With this system all categories of patients of the same sex are grouped together regardless of nursing needs, thereby running a risk of cross infection and no ad€>quate security for patients.

5.3 NORTH KANSAS CITY MEMORIAL HOSPITAL, NORTH KANSAS CITY, MISSOURI

Architects: Hewitt and Royer,

Associate Architect: Harry L. Wagner.

The North Kansas city memorial hospital is a 100 bed general hospital designed to cater for the abnormally large number of accident cases. Which is due largely to its surrounding industrial area and also the frequency of auto accidents, occurring on the nearby high ways the hospital structure is a one-storey structure with a basement floor. The emergency entrance is prominently located and easily identifiable to facilitate the efficient handling of accident cases. The hospital is planned for eventual expansion to 250 beds if required.

The hospital building is a one-storey structure of built from steel and concrete. It is a steel frame structure with concrete floor and steel roof deck. The exterior walls are brick with a curtain wall of porcelain. Enamel panels and glass in aluminium frames. Interior partitions throughout the entire building are metal studs with plaster, also the ceilings are finished with acoustical plaster.

The service departments are located in the basement while the administrative, adjunct diagnostic and treatment and the nursing facilities are located on the main floor.

5.3.1 MERITS:

i One storey nature of building is good for orthopaedic settings.

ii Prominent location and easy identification of emergency entrance enhances efficient handling of emergency cases.

iii Travel distance of both patient and staff within the hospital is made short with the aid of double loaded corridors.

iv Flexibility of hospital planning gives room for eventual expansion.

v Departments with key relationship grouped together.

vi Adequate day lighting and ventilation.

vii Compartmentalisation of patients into bedrooms and categorising them into nursing wings.

vii Danger of cross infection reduced.

5.3.2 DEMERITS:

i Travel distance of nurse from nursing station to the end rooms of each wing is far.

ii Possible rapid rate of fire spread along the building due to its single structure nature and also nature of building materials.

iii No clear fire escape provisions.

iv Poor natural lighting in medical facilities.

5.3.3 PROGRESSIVE PATIENT CARE (P.P.C)

There is a categorisation of patients according to nursing and Medicare needs with accompanying compartmentalisation into patient rooms, which enhances patient management, nursing skill and delivery of optimum care.

5.4 HOLY CROSS HOSPITAL (sisters of the Holy Cross), SAN FERNANDO, CALIFORNIA.

Architects: Gene Verge and B.N Clatworthy Hospital Consultants: Gordon Friesen and Associates.

The Holy Cross-hospital, San Fernando, California is a six-storey building. The medical and administrative facilities are located on the ground floor. The non-medical facilities are on the second floor, while the third to sixth floors house the nursing facilities.

The central guiding principle for the design of this hospital was the provision of intensive personnel nursing care for each patient if and when needed. This was achieved through careful planning and the use of automated supply systems. This automated supply systems consists of mechanised tray conveyors with ejector systems and pneumatic tube conveyors and dumb waiters, to convey both sterilised and soiled supplies, to and from the patients respectively.

The hospital consultant, Mr. Gordon Friesen felt that for better personalised patient care, that the nurse's place was at the bed side of the patient and the best way to keep her there, was to give her what she needs, where and when she needs it. In that way the nurse spends more time profitably looking after the patient rather than looking for supplies. Nurse's

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circulation is restricted in between patient rooms without doubling back to the supply area. If any supply is needed, the nurse calls the floor dispatching centre to have it dispatched from the central sterile Supply Department (C.S.S.D.) to her location.

5.4.1 MERITS:

i Adequate day lighting and ventilation of patient rooms.

ii Danger of cross-infection eliminated due to patient compartmentalisation and good control of sterilisation and handling of supplies in the entire system.

iii Departments with key relationships grouped together.

iv Prominent location, and easy identification of emergency entrance.

v Automated system of supply.

vi Travel distance of both staff and patients within hospital is minimised with the aid of double loaded corridors.

5.4.2 DEMERITS

i Poor natural lighting within internal corridors and spaces bounded by the two corridors.

ii Possible rapid rate of fire spread.

iii Need for constant electricity due to its importance in the workings of the hospital.

iv Pre-dominant vertical circulation not ideal for orthopaedic settings

5.4.3 PROGRESSIVE PATIENT CARE:

There is a compartmentalisation of patients into patient rooms and also a categorisation of these patients according to nursing needs. This prioritises patient management and medical delivery which is further boosted by the automated supply system which makes the nurse concentrated more on the care of patients without splitting that attention due to the need to look for supplies.

5.5 WADLEY HOSPITAL, TEXARKANA, TEXAS:

Architects: Reinheimer and Cox

Hospital Consultants: Garden A. Friesen Associates.

This hospital is a 180-bed facility in a three-story building. The ground floor houses the adjunct diagnostic facilities, operating suite and heavy traffic areas. The nursing floors are in the subsequent higher floors. The hospital also makes use of an automated supply system of pneumatic tube and tray conveyors and dumb-waiters to supply patients with sterilised supplies, prepared food and drugs.

5.5.1 MERITS:

i *Separation of public and staff traffic.*

ii Adequate day lighting and ventilation in-patient rooms.

iii Danger of cross-infection eliminated

iv Patient privacy and security guaranteed with room compartmentalisation.

v Departments with key relationships, grouped together.

vi *Large and pleasant main entrance and close* link to emergency entrance and emergency facilities for easy identification.

vii Automated system of supply of sterile supplies and prepared food.

Viii Double corridors in main floor also help minimise and order circulation on that floor. It also reduces nurses travel distance on the nursing floor.

5.5.2 DEMERITS:

i Likely rapid rate of fire spread.

ii Vertical circulation not ideal for orthopaedic settings.

iii Need for constant electricity due to its importance in the workings of the hospital.

iv Poor natural lighting within wide central care and corridors.

5.5.3 PROGRESSIVE PATIENT CARE (P.P.C)

There is a categorisation of patients according to nursing and medical needs. The patients are compartmentalised into patient rooms, which prioritises patient management. Overall patient care is enhanced by the automated supply system.

CHAPTER SIX

6.0 CLIMATIC AND DEMOGRAPHIC DATA

Nigeria is a country with varied climatic conditions, which are favourable. This climate is both equatorial and semi - equatorial in nature. There are two pre-dominant seasons in Nigeria and they are the wet and dry seasons.

The wet season lasts from March to October while the dry season is from November to February.

The country is divided into four climatic zones for the purpose of building design. These zones are:

i The hot dry climate zone

ii. The temperate zone

iii. The hot humid zone

iv. The warm humid climate (see fig 4)



Figure 4: THE WARM HUMID CLIMATE

6.1 LOCATION

Lagos State falls within the warm humid climate zone. It lies between latitude 7n and longitude 4e. It has a total area of 3,345 square kilometres or 1,292 square miles



6.2 Climatic and Micro-climatic factors.

6.2.1 RAINFALL:

Lagos has a tropical climate with two distinct seasons. The rainy season and the dry season. The rainy season starts from early March and ends in late October. The dry season starts in early November and ends in late February. The town has an annual rainfall of above 185mm (see figure 6)

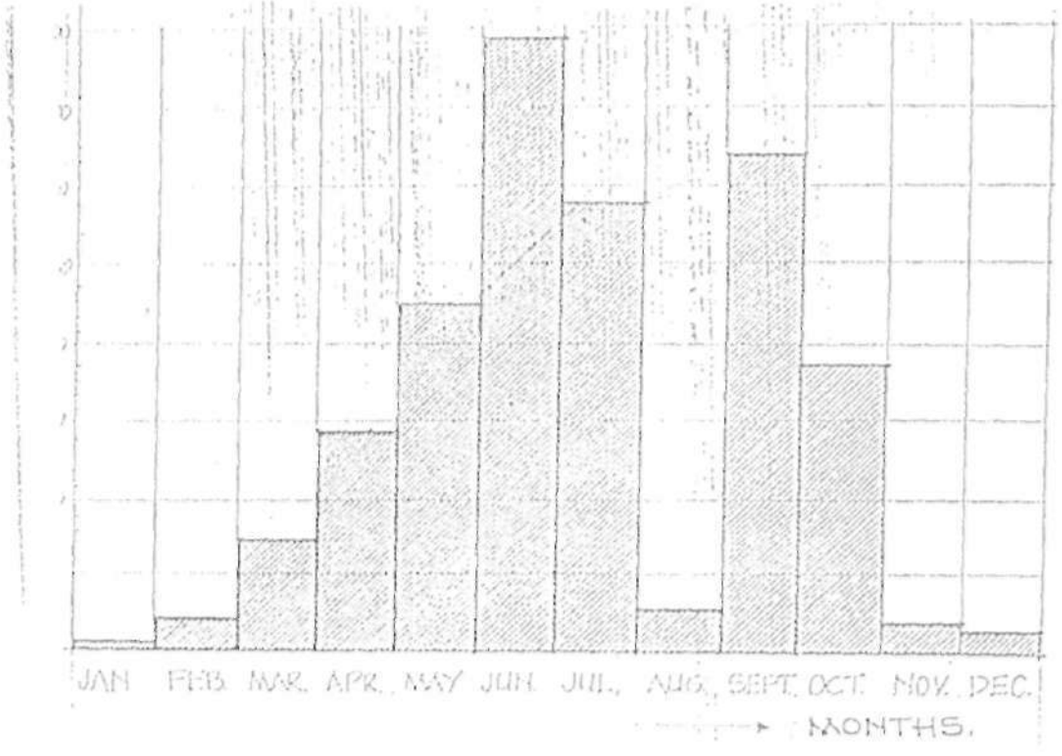
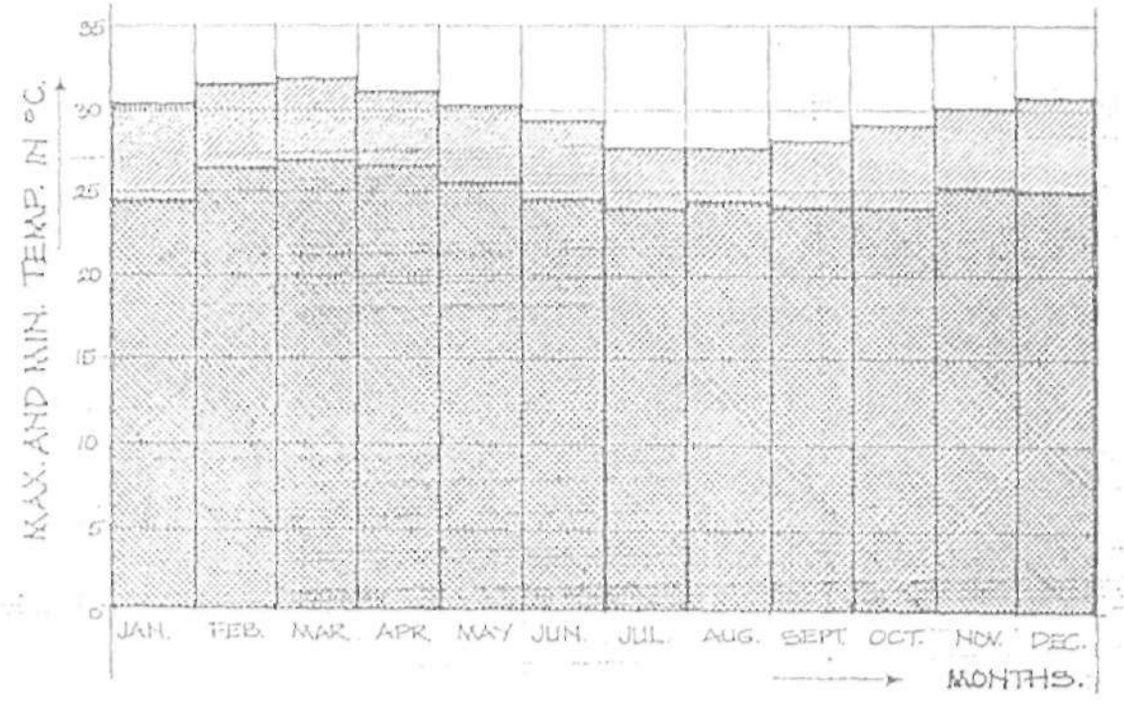


Figure 6: MEAN MONTHLY RAINFALL

6.2.2 TEMPERATURE:

Temperatures are moderately high, in that air temperature, is just below body temperature making it difficult to lose heat. The mean monthly temperature ranges between 25.7c in July and 30.2c in February. Lowest temperatures are recorded in June and September, (see figure 7).



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Figure 7: MAXIMUM AND MINIMUM TEMPERATURE

6.2.3 RELATIVE HUMIDITY:

The relative humidity is high. It falls between 60% to 85%. Moisture content of the air is accompanied by high temperatures making the weather a little bit uncomfortable accompanies moisture content of the air. (See figure 8)

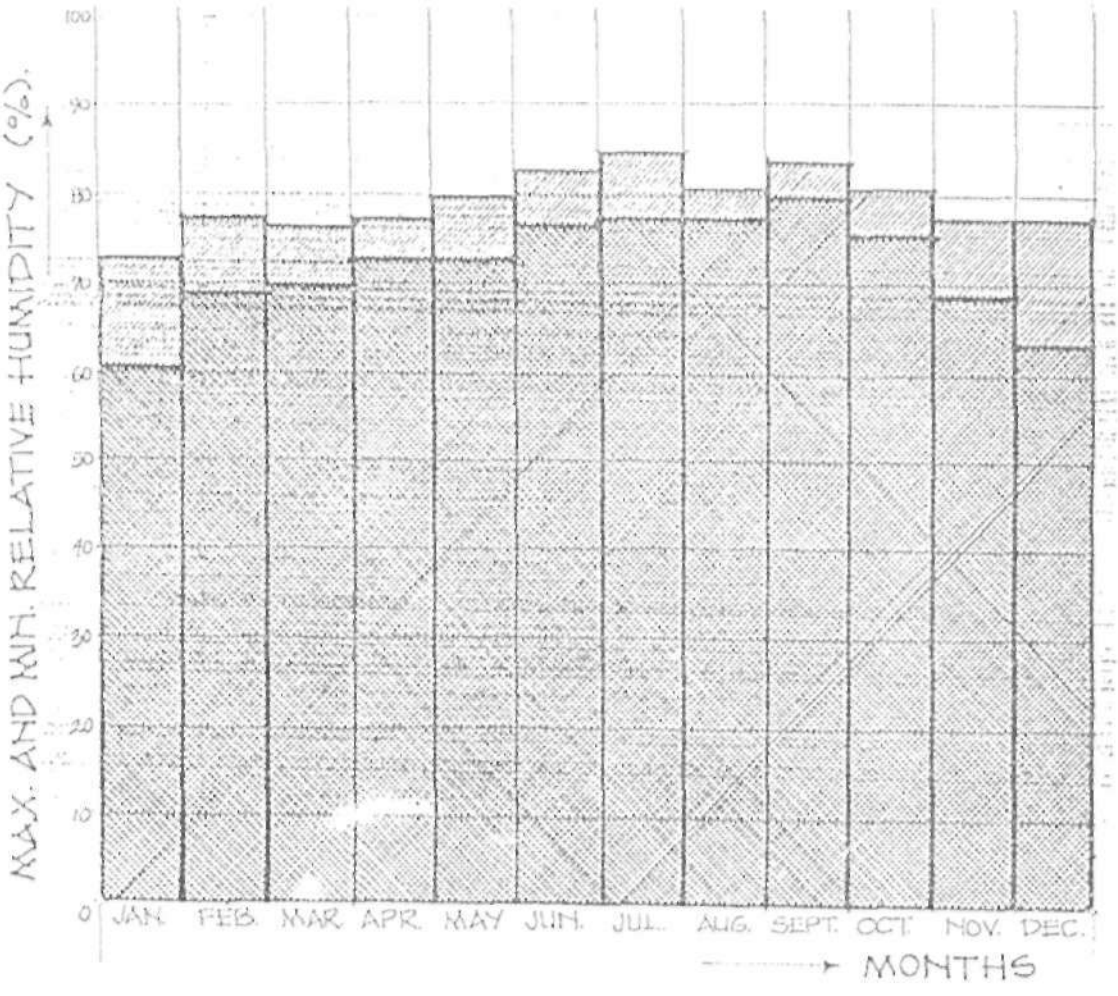


Figure 8: MAXIMUM AND MINIMUM RELATIVE HUMIDITY

6.2.4 SUNSHINE HOURS:

Lagos is exposed to about 2000 sunshine hours annually. The amount of sunshine hours ranges from a minimum of 1300 to 3200 sunshine hours. During the dry season (Nov-Feb) the monthly radiation i.e. the amount of sunshine follows the general trend of an increase from over 275 sunshine hours on the city site, (see figure 9)

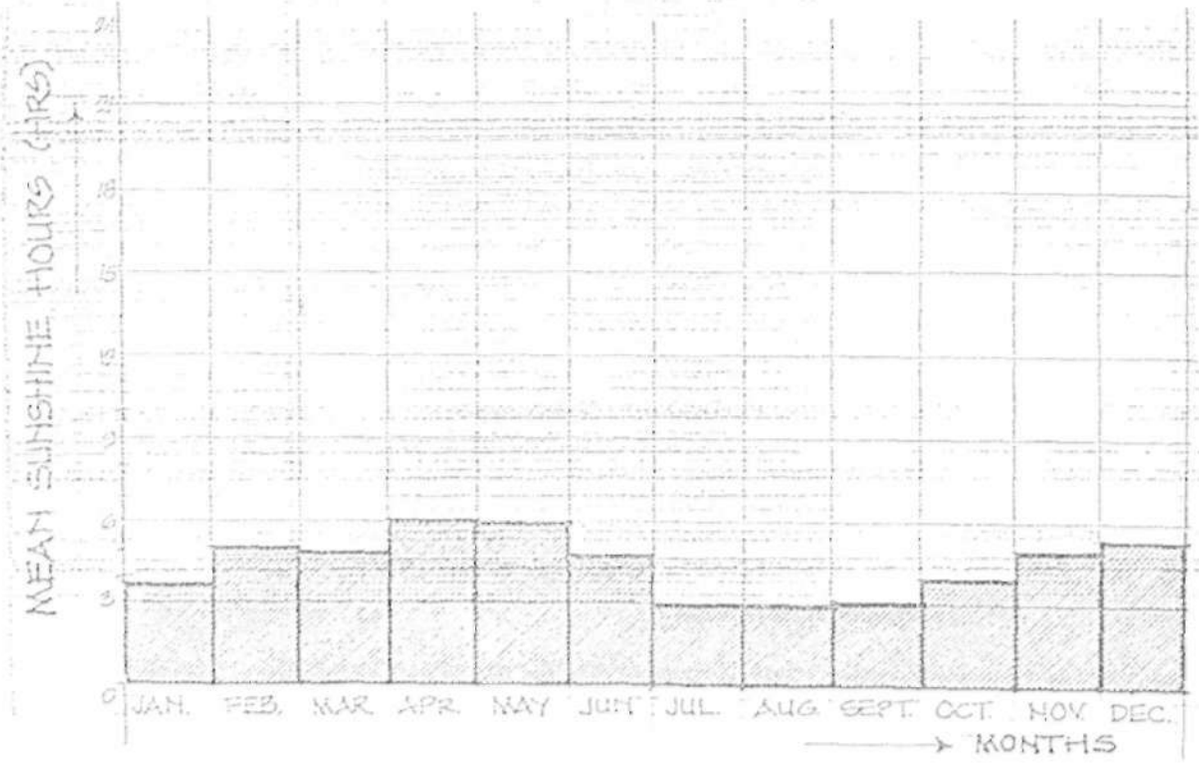


Figure 9: MEAN SUNSHINE HOURS

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6.2.5 WINDS

There are two main prevailing winds, which are:

i The Southwest trade winds from the Atlantic ocean. It brings rains in the months of March-October.

ii. The Northeast trade wind from the Sahara brings dusty dry air known as harmattan. The cold harmattan wind is experienced between November and February, (see figure 10)

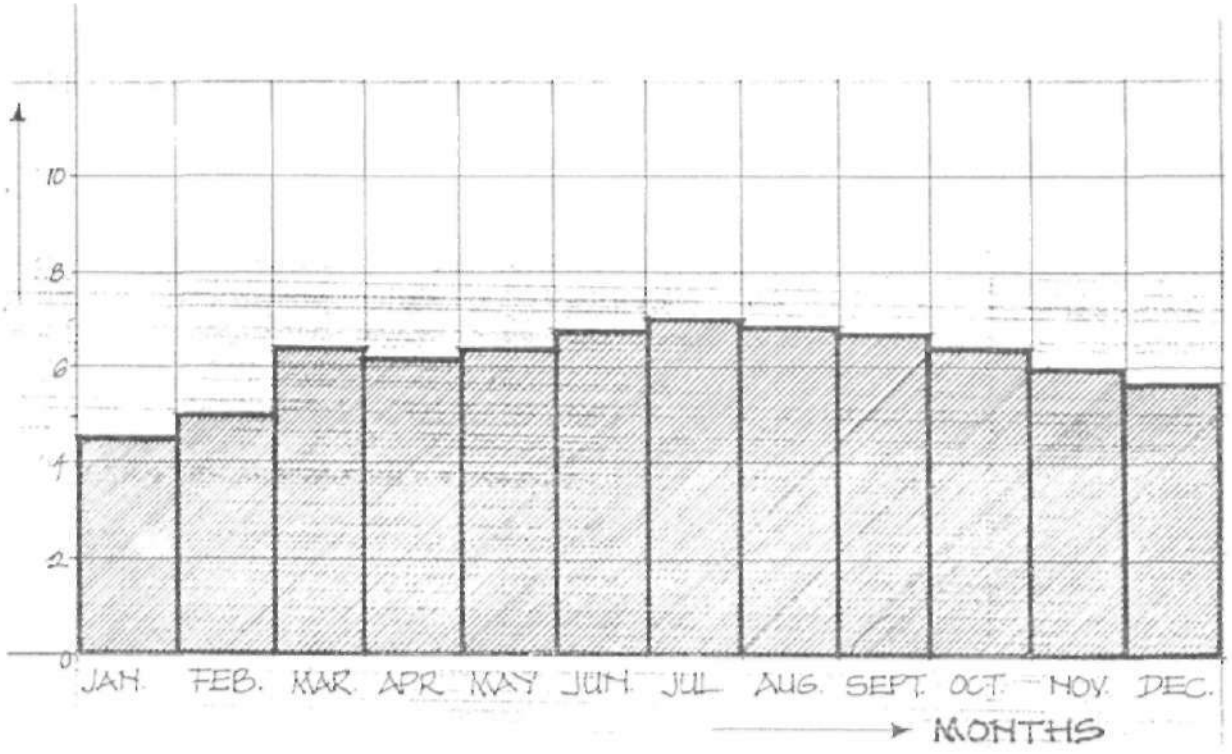


Figure 10: AVERAGE WIND SPEED

6.3 DEMOGRAPHIC DATA

POPULATION ATTENDING HOSPITAL BY AGE GROUP AND STATE
NEW PATIENTS BY AGE-GROUP

JANUARY - DECEMBER 1997

AGE GROUPS	OUT - PATIENTS			ADMISSION		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Under 1 Year	232	150	382	4	5	9
1 - 4 Years	490	352	843	51	43	94
5 - 15 Years	819	473	1292	96	74	170
15 - 44 Years	214	1017	3432	460	188	648
45 - 64 Years	631	483	1114	128	53	181
65 Yrs & above	159	176	335	46	37	83
TOTAL	4146	2652	7398	785	400	1185

TABLE 6.1

STATES	MALE	FEMALE	TOTAL
Abia	149	46	225
Adamawa	9	4	13
Akwa Ibom	98	48	136
Anambra	314	157	471
Bauchi	2	1	3
Benue	37	17	54
Borno	15	3	18
Cross-Rivers	37	25	62
Delta	288	168	456
Edo	200	128	328
Enugu	71	37	108
Imo	330	165	495
Jigawa	5	3	8
Kaduna	8	5	13
Kano	27	9	36
Katsina	7	1	8
Kebbi	7	4	11
Kogi	58	36	94
Kwara	181	96	277
Lagos	583	328	911
Niger	8	2	10
Ogun	1039	620	1659
Ondo	332	181	513
Osun	253	183	436
Ekiti	107	93	200
Ebonyi	26	10	36
Bayelsa	8	6	14
Nasarawa	8	3	11
Gombe	2	-	2
Zamfara	-	-	-

TABLE 6.2

STATES	MALE	FEMALE	TOTAL
Oyo	375	180	555
Plateau	7	3	10
Rivers	22	22	44
Sokoto	15	3	18
Taraba	4	2	6
Yobe	3	-	3
Federal Capital Territory	-	-	-
Other Countries	89	23	112
TOTAL	4224	2652	7376

TABLE 6.2 Cont.

OUT-PATIENT'S DEPARTMENT (NON-MATERNITY)
OUT-PATIENT'S CASES & ATTENDANCES, 1997

DEPARTMENT	NEW CASES			OLD CASES			TOTAL ATTENDANCE		
	M	F	Both	M	F	Both	M	F	Both
General Out-Patient Consultant Ortho	2698	1176	3879	115	89	204	2813	1265	4078
Out-Patient	2026	1476	3502	160	77	237	2186	1553	3739
Medical OPD	826	475	1301	2781	1988	4769	3607	2463	6070
Orthopaedic Clinic	1024	923	1947	2737	2348	5084	3761	3271	7032
Plastic	286	170	456	535	322	857	821	492	1313
Club Foot Clinic	138	92	230	314	171	485	452	577	1029
Skin	-	-	-	-	-	-	-	-	-
Plastic Clinic	286	170	456	535	322	857	821	492	1313
Miscellaneous	-	-	-	-	-	-	-	-	-
Dressings	-	-	-	-	-	-	1671	695	2366
Minor Operations	-	-	-	-	-	-	836	470	1306
Injections	-	-	-	-	-	-	555	712	1267
Physiotherapy Treatment	-	-	-	-	-	-	6472	5087	11,510
Limb Fittings	-	-	-	-	-	-	233	153	386
Plaster Of Paris	-	-	-	-	-	-	1697	821	2518
TOTAL	6,998	4,312	11,310	6,442	4,995	11,637	25,055	17,559	42,614

TABLE 6.3

MEDICAL STATISTICAL RETURNS

CAUSES OF IN-PATIENT ADMISSION BY LENGTH OF HOSPITALISATION (MALE/FEMALE) + (DISCHARGED CASES/FATAL CASES)

JANUARY - DECEMBER, 1997.

LENGTH OF HOSPITALISATION

Causes of Hospitalisation	Under 12 hrs	12-23 hrs	1 - 3 days	4 - 6 days	7-13 days	2 - 3 Wks	4 - 7 Wks	8-11 Wks	12 Wks & Over	TOTAL
Motor Vehicle Accidents	-	-	6	13	35	37	92	41	403	427
Other Road Transport Accidents	-	-	3	4	7	12	31	17	48	122
Accidental Falls	-	-	1	2	8	10	34	20	91	166
Industrial Accident	-	-	3	-	7	4	13	4	14	45
Assault Homicide	-	-	-	1	1	2	6	-	-	10
Accidents caused by Fire Arms	-	-	-	-	5	7	4	5	12	33
Burns Fire Flames	-	-	-	-	2	4	4	4	27	41
Orthopaedic Diseases	-	-	1	6	23	6	80	28	135	341
TOTAL	-	-	14	26	88	144	264	119	530	1,185

TABLE 6.4

CHAPTER SEVEN

7.0 DESIGN REPORT

The design approach taken by the author, was in form of stages.

Stage I: involved the author conducting a preliminary survey on the hospital complex whereby the existing facilities were accessed, to see if they were physically and functionally in shape.

Stage II: Was the collection of data as regards to the hospital complex. Data such as plans, bio-statistics data and all other necessary data.

State III: Was the evolution of the design proposal whereby inferences from the appraisal of the hospital where studied and solutions to the problems identified, were juxtaposed to come up with an ideal proposal.

7.1 SITE CONCEPT:

The site concept employed in the evolution of this proposal was hinged mainly on the following:

i. Compact planning

ii. Circulation, which should be, shorts, orderly and protect the patient.

iii. Zoning together of departments with close and key relationships.

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iv. Zoning together of the different hospital zones within the framework of the existing situation. Zones such as

a. Diagnostic and Treatment Zones

b. Impatient zones i.e. intensive care zone, self-care zone, long term care zone, etc.

These and some other factors were employed to come up with the final site concept.

It should be noted that the existing two entrances into the hospital complex were retained. These two access points i.e. The main one, from the Ikorodu road express-way infront and the secondary one from the Morrocco road behind were retained due to the already built up nature of the areas surrounding the hospital complex which is located in the center of the metropolis.

7.2 DESIGN CONCEPT

The design concept employed for the redeveloped buildings was chiefly compact planning, internally and externally, restricting the buildings to bungalow height which is due to the orthpaedic nature of the hospital setting. It should be noted that multi-story construction is not ideal for orthopaedic settings.

7.3 NEW FACILITIES

7.3.1 THE A.E.D. AND O.P.D. BUILDING:-

This building is a one-story building housing the accident and emergency department (A.E.D) and the outpatient's department (O.P.D) on the ground floor while the first floor houses an intermediate care nursing facility. There is an adjoining traumatic theatre facilities in a bungalow type structure.

The A.E.D. using on the ground floor has consulting rooms, a treatment room, a cast room, a sluice room, an ambulance bay, dispensary, an X-ray room, a records room, a cashier's office, waiting area and toilets for visitors or patients. It also has doctors and nurses room facilities. There are adjoining corridor linkages to the traumatic theatre, and staff toilets.

The traumatic threatre which is adjoined to the A.E.D. using has observation/holding bay facilities, recovery room facilities, theatre facilities, and offices facilities.

The O.P.D using on the ground floor has consulting rooms, treatment rooms, a cast room, and waiting area for both the fracture and orthopaedic clinics. It also has dispensary facilities, record facilities, toilet facilities for both the staff and patients, sluice facility. It has 2 corridor linkages, one of the traumatic theatre through the A.E.D. and the other to the physical medicine areas.

The intermediate care nursing unit on the first floor can be accessed through the aid of a ramp, staircase and a life facility.

The intermediate care nursing unit has two wings with a treatment room attached to each and a general side laboratory. it also has impatient facilities such as patient room, lavatories stores, kitchen, nursing station etc. It also has a support facilities like the clean and dirty utilities and an escape staircase on each wing which also acts as the service staircase. The intermediate care unit has a capacity of 46 beds spread into 1 bed, 2 beds and 6 bed patient rooms.

7.3.2 THE PROSTHETICS AND ORTHOTICS AND PHYSIOTHERAPY BUILDING.

This building is a bungalow building, which has two wings, the prosthetics wing and the physiotherapy wing.

The prosthetics and orthotics wings has a large waiting area; record room, store, consulting rooms and adjoining exam rooms for both the prostheses and plastic clinics. It also has some office facilities of which the head of departments office and Secretary to the H.O.D's office are included. There are also facilities for plaster casting, stump-casting, and limb, fitting. there is a corridor link to the occupational therapy department. it has toilet facilities for staff and patients.

The physiotherapy wing also has a large waiting area with a door access to the waiting area of the prosthetics wing. It has a records room, staff and patient toilet facilities, office facilities which include the head of departments office, consulting rooms and adjoining exam rooms, electrotherapy and speech therapy facilities. It also has a corridor link to the occupational therapy department. its physiotherapy workshop is incuded in the occupational therapy building.

7.3.3 THE OCCUPATIONAL THERAPY BUILDING

The occupational therapy building is designed as a building with one story height. it is behind the physiotherapy and prosthetics building. It houses a hydrotherapy pool with changing facilities, an occupational therapy gymnasium and a physiotherapy workshop. The occupational therapy department offices and recovery rooms are also in-corporated into this structure.

7.4 UPGRADED FACILITIES

7.4.1 THE NEW PATHOLOGY DEPARTMENT

The new pathology department is sited close to the main adjunct diagnostic and treatment core in the hospital. The existing nursing administration building was upgraded and expanded into the new pathology department, some walls were destroyed, while some were

LIBRARY

retained in addition to the new walls. The new pathology department has office facilities, laboratories facilities for hematology, microbiology, chemistry, blood bank and aids test. It also has storage and clean up facilities adjoining the laboratories. The department has a reception and waiting area and a cashier's office.

7.4.2 OLD WARDS (TYPE A)

These wards were originally five in number, and bungalow type structures. They were originally designed as Pro-Nightingale type open wards, but now the ward has been expanded and partitioned into Co-bed rooms, 4 bed rooms and single bed rooms. Support facilities such as a side laboratory, kitchen, sluice, clean and dirty utilities, stores, a treatment room and a doctor's room are provided. These wards have been re-designated as Self Care units. Also provided was a multi-purpose room which can be utilised in any form for any function by the patients, i.e. in the male wards, which are two in number, the multi-purpose room is a computer room for the patients to utilise. There are two nursing supervision. The toilet facilities of the ward was also expanded into sluice and dirty utilities facilities, showers and baths and toilets both for wheel-chair and ambulant patients. The toilets were left in their former position due to the need to maintain sterility within the ward and also to help in training the patients cope with their disabilities since that is the core aim of nursing in this unit.

7.4.3 OLD WARDS (TYPE B)

These type of wards were comparatively newer than the type A type of pro-nightingale open wards. Due to their pro-nightingale open ward design, it has been compartmentalized into 4 bedroom bays and 2 bed bays with a single bed bay. These wards which are 4 in number have been re-designated as Long Term Care Nursing units, for patients who need long term nursing care, 2 of these wards are to accommodate patients whom have been relocated from the former spinal injuries ward and transit ward. Also provided are day room spaces, toilet facilities, clean and dirty utilities. The wards were designed with toilet facilities on both ends of the ward and there were two nursing stations so as to ensure proper and effective nursing supervision.

CHAPTER EIGHT

8.0 RE-DEVELOPMENT PROGRAMME

8.1 PHASE I

8.1.1 Construction of new C.S.S.D attached to central stores.

8.1.2 Internal redevelopment and expansion of ward A (male), B (female).

8.2 PARSE II

8.2.1 Construction of a new building for the Accident/Emergency Department (A.E.D) and Out-patients department (O.P.D) functions, and destruction of old A.E.D and O.P.D functions remain in old building housing them till completion of new building C.S.S.D functions move into new C.S.S.D.

8.2.2 Internal redevelopment and expansion of ward F (male) and re-designation of wards as self cares units.

Patients in these wards are moved to the first and second floor of the Mobolaji Hospital Accident wards (MHAW)

8.2.3 Internal redevelopment and expansion of old prosthetics and orthotics building into a new structure to house both prosthetics and orthotics and physiotherapy departmental functions. Also painting of new prosthetics and orthotics workshop.

Clerical and administrative functions are temporarily relocated to hospital annex offices. Auxiliary functions such as orthopaedic footwear and tailoring relocated to new prosthetics and orthotics workshop.

- Note roads are also reordered and expanded.

8.2.4 Destruction of old prosthetics and orthotic workshop near generator house and building new building housing electrical department. Functions of workshop moved into new workshop.

8.2.5 Internal redevelopment and expansion of central records buildings into new records building.
Functions of central records relocated temporarily into administrative building and offices in Mobolaji Hospital Accident Wards (ground floor).

8.2.6 Destruction of spinal injuries and transit ward to make way for the construction of new long term wards patients are relocated to wards A and B

8.3 PHASE III

8.3.1 Internal redevelopment and expansion of old physiotherapy building into new occupational therapy building with new gymnasium, hydrotherapy pool and physiotherapy workshop.

Functions of the physiotherapy department are moved into new prosthetics and orthotcs and physiotherapy building.

8.3.2 Destruction of old hydrotherapy pool which is redundant, to create space for new occupational therapy building.

8.3.3 Internal redevelopment and expansion of nursing admin building into new pathology department. Nursing admin functions are relocated temporarily into 1st floor offices of MHAW, for final relocation in hospital annex offices.

8.3.4 Relocation of functions of old A.E.D building into new A.E.D building and re-designation of building as a Geriatric day hospital for the treatment of geriatric patients and long term patients.

8.3.5 Destruction of old O.P.D buildings.

Functions relocated into new O.P.D.

8.3.6 Internal redevelopment and expansion of ward C (paediatric ward) and re-designation as self care unit children are moved into ward F temporarily.

8.3.7 Relocation of functions of electrical department, into new building near generator house and re-designation of building, as instrumentation and medical engineering building.

8.3.8 Internal redevelopment and expansion of instrumentation building, into central laundry and central kitchen.

Instrumentation workshop functions relocated to new instrumentation and bio-medical workshop. Destruction of old kitchen building.

8.4 PHASE IV

8.4.1 Destruction and clearing of site of old gym. And the building of the central I.C.U. Functions of the old gym are moved into new occupational therapy building.

8.4.2 Internal redevelopment and expansion of old pathology dept into relatives over-night stay and rental facility.

8.4.3 Internal redevelopment and expansion of ward D(female) and re-designation as a self care unit. Patients are moved temporarily into MHAW.

CHAPTER NINE

9.0 SUMMARY AND CONCLUSION

9.1 SUMMARY

The National Orthopaedic Hospital Igbobi, Lagos when founded, was established as a rehabilitation center for the returnee veterans of the second world war, to cater for their injuries. Since attaining hospital status, specializing in orthopaedic treatment, it needed to be totally redeveloped and upgraded, so as to meet up with the challenges of the new millennium. It should be noted that selective redevelopment has been carried out on some departments within the initial architectural layout. Apart from the above-mentioned factors, the hospital needed to be redeveloped to make it functionally, up-to-date in the area of nursing care for the patients.

This thesis work started out with the author discussing ways of salvaging and modernising existing hospital structures vis-a-vis international hospital design standards especially in the areas of circulation within the hospital, the physio-functional factors affecting, or to be considered in hospital design and other factors. Also analysed was the past and present design of the hospital wards, so as to provide patients with optimum care at each stage of nursing provide patients with optimum care at each stage of nursing care.

General hospital and related literatures were reviewed.

The author then proceeded to analyse the existing situation of the hospital structures, both individually and in relation to other structures. In continuation, case studies of some local and foreign hospitals were carried out to serve as a guide to the eventual proposal. Also x-rayed were climatic and demographic factors to assist in the evolution of the eventual proposal. After the afore-mentioned factors were analysed and synthesized, the eventual proposal was originated making the hospital totally redeveloped, especially the diagnosis and treatment facilities and the in-patient facilities (which shall give optimum and specialized nursing care).

9.2 CONCLUSION

The challenge of this thesis work has benefitted the author's knowledge about hospital design, its intricacies and complexities, which have to be combined together in equal proportions so as to eventually benefit the patients.

Being a redevelopment proposal, this thesis work can not be said to have solved all the problems within the hospital, as some aspects had to be left as they were, so that the aim of the thesis was not defeated. An attempt to have embarked on this left aspects, would have led to

a new hospital being designed.

The hospital has been packaged as a compactly planned institution providing the progressive system of patient care.

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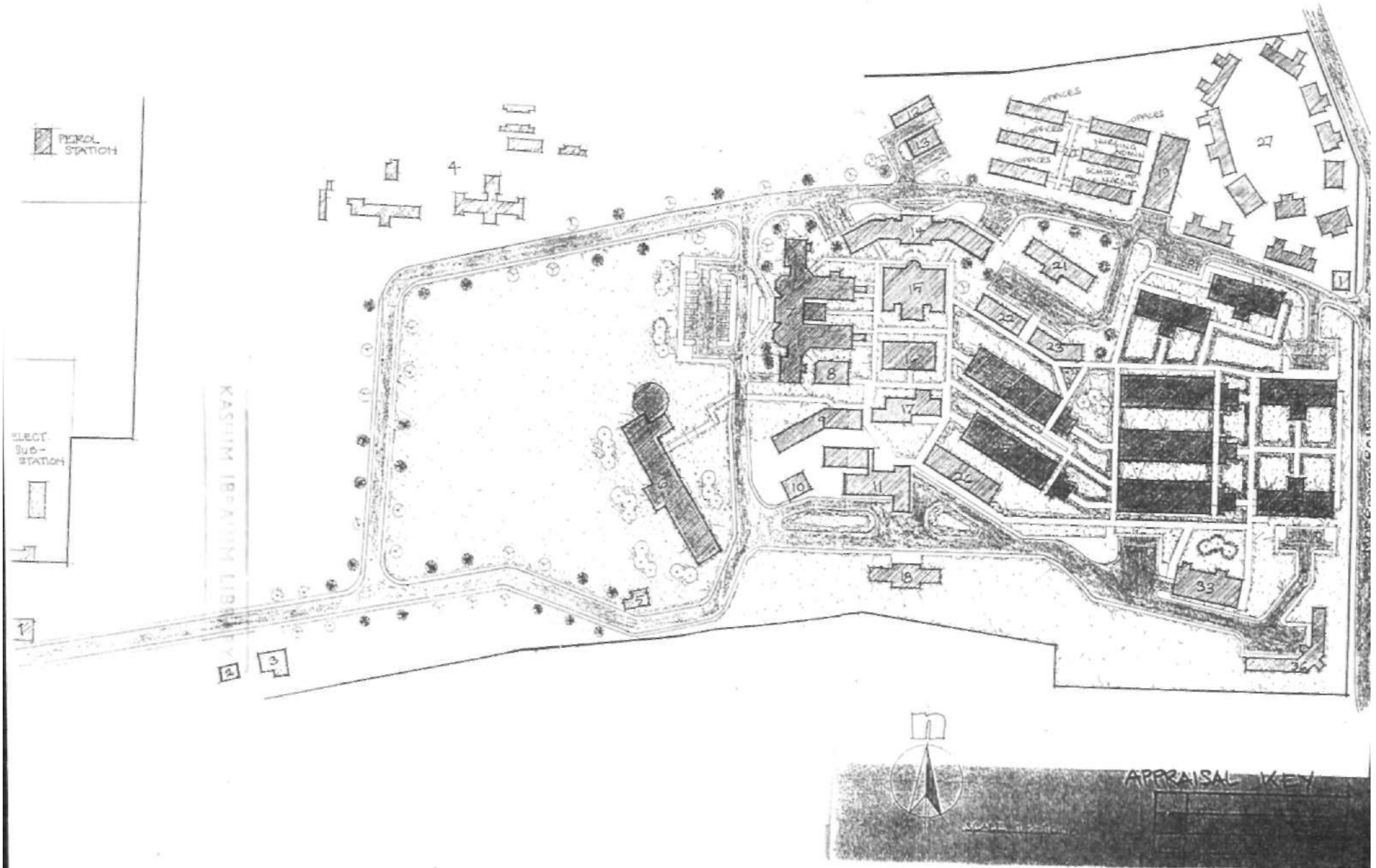
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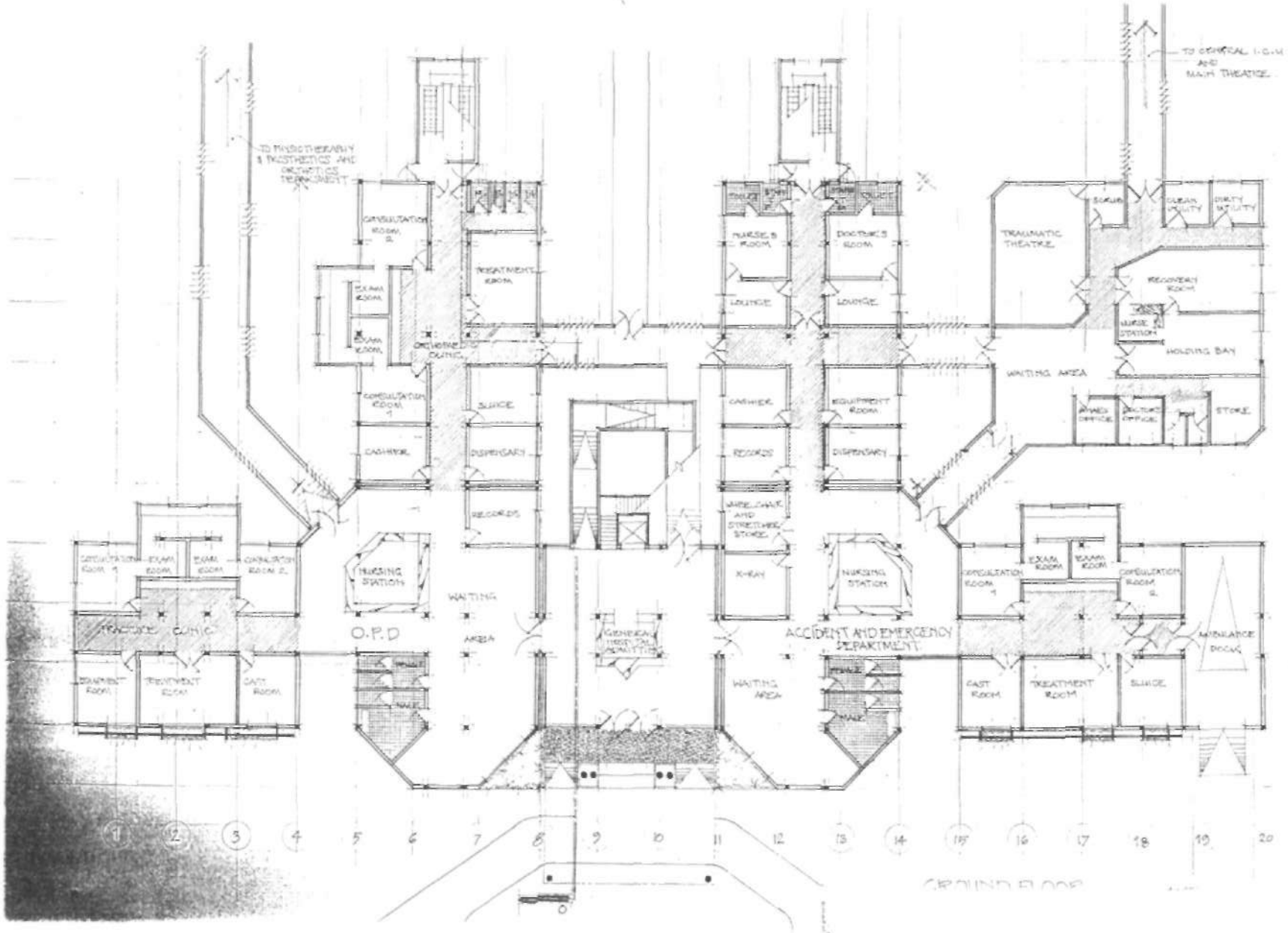
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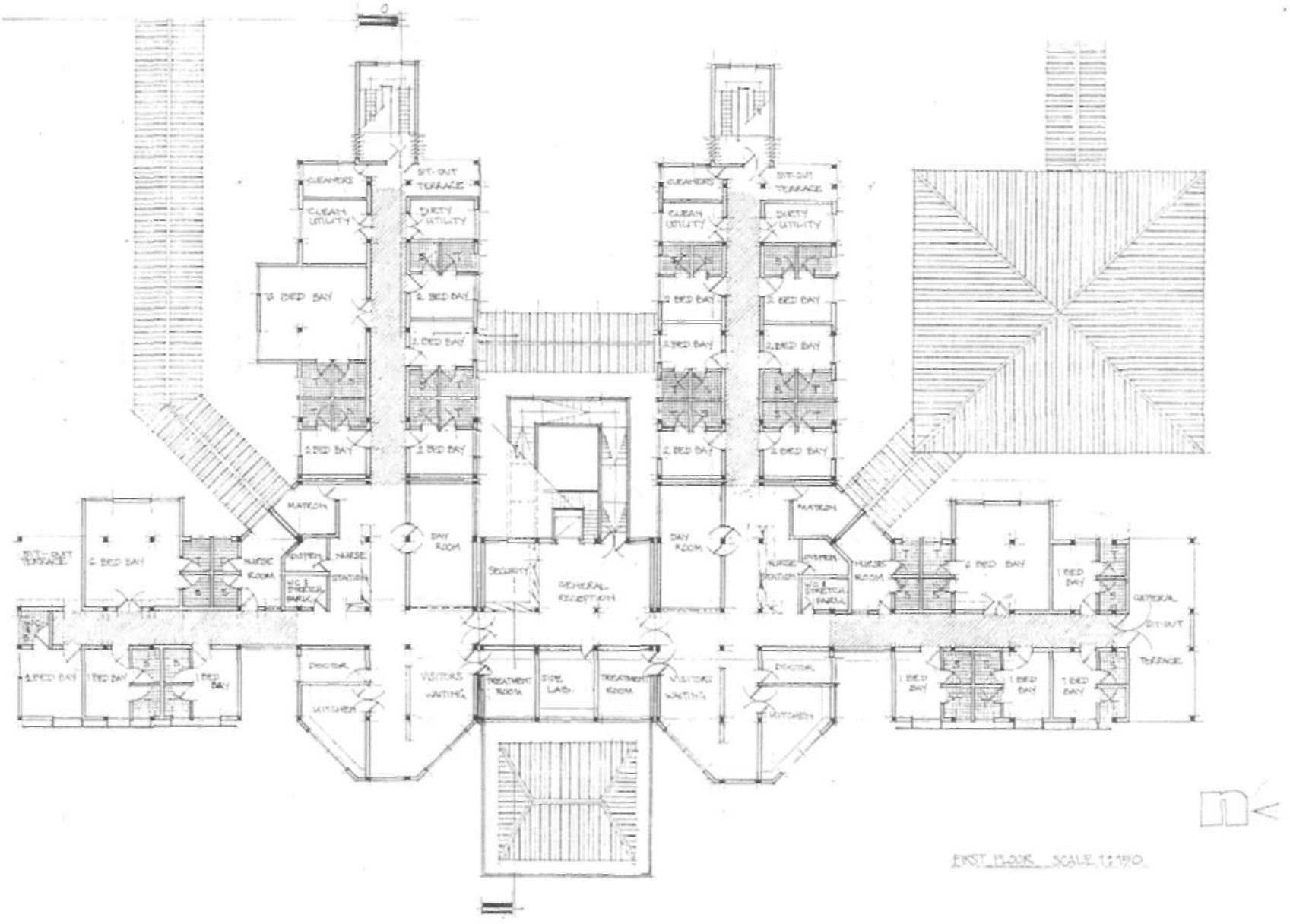
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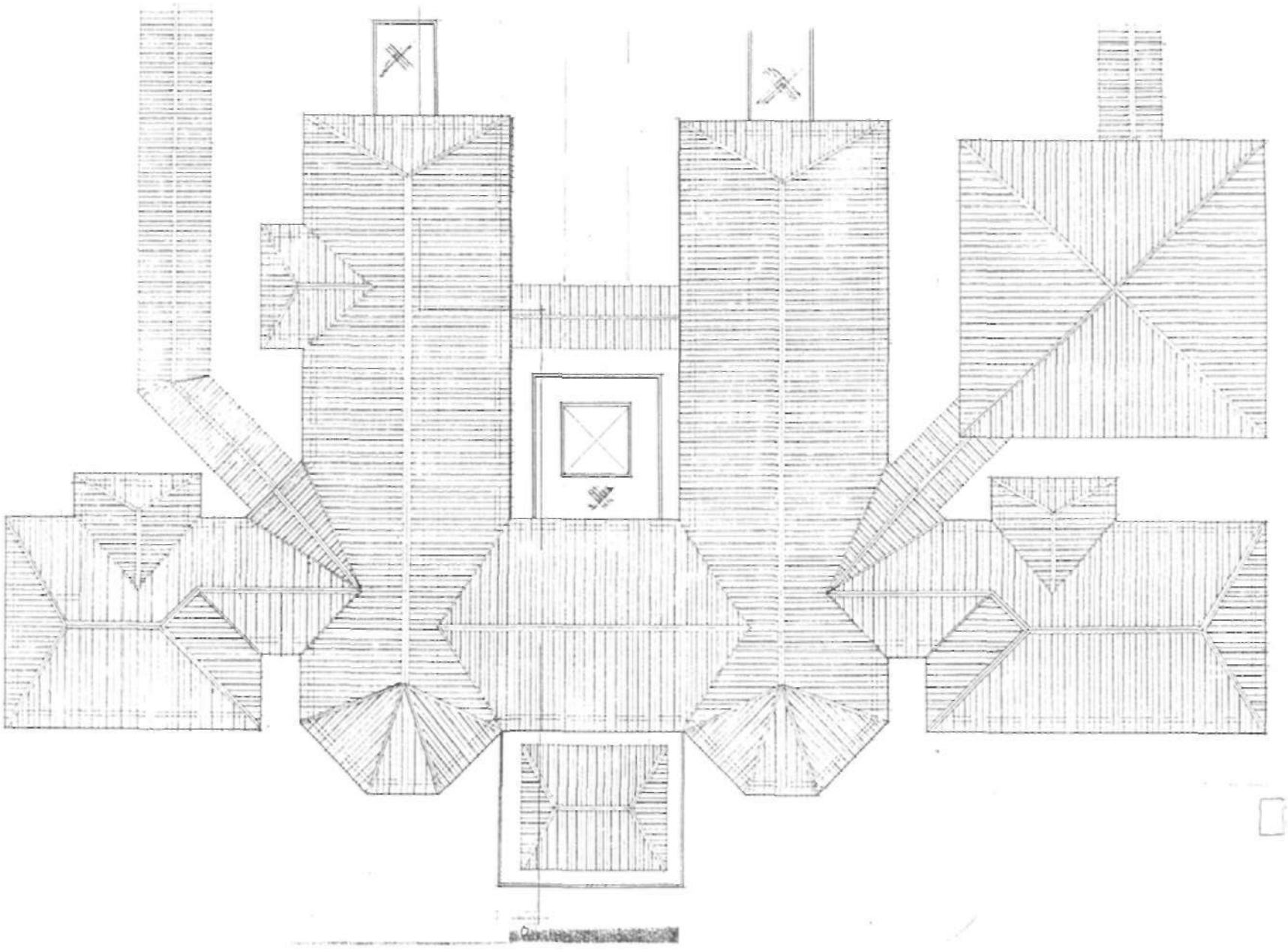
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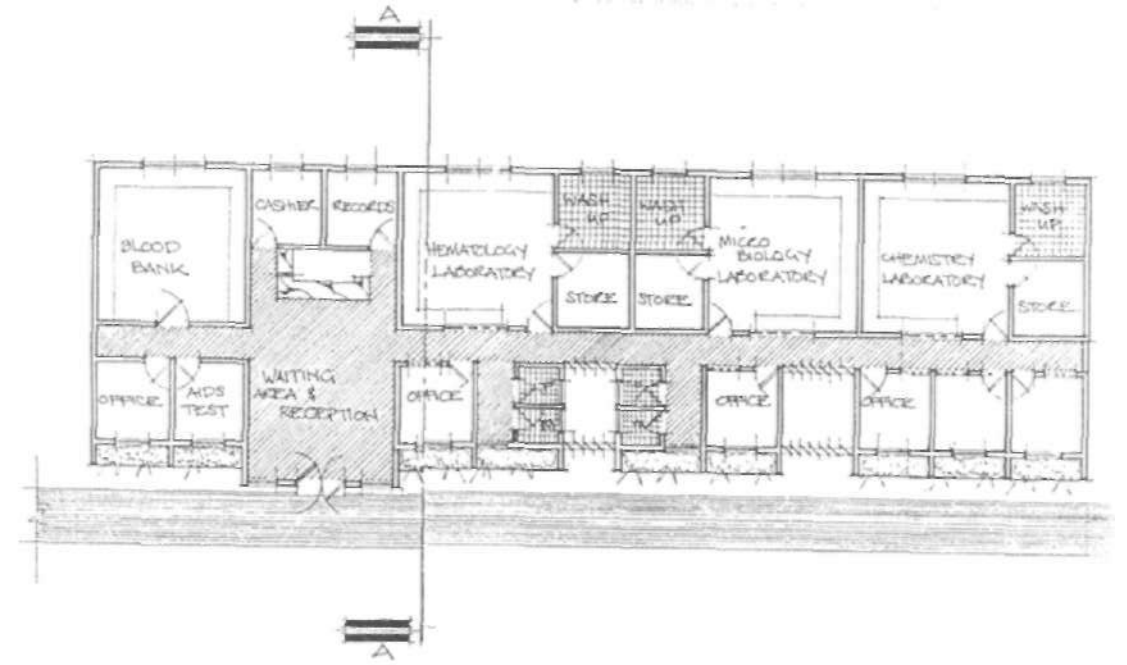

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TO CENTRAL I.C.U. AND MAIN THEATRE
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EXAM ROOM
EXAM ROOM
ORTHOPAEDIC CLINIC
TREATMENT ROOM
CONSULTATION ROOM 1
CASHIER
SLUICE
DISPENSARY
RECORDS
NURSE'S ROOM
DOCTOR'S ROOM
LOUNGE
LOUNGE
CASHIER
RECORDS
WHEELCHAIR AND STRETCHER STORE
X-RAY
EQUIPMENT ROOM
DISPENSARY
NURSING STATION
TRAUMATIC THEATRE
SCRUB
CLEAN UTILITY
DIRTY UTILITY
RECOVERY ROOM
NURSE'S STATION
HOLDING BAY
WAITING AREA
ARMED OFFICER
DUTY OFFICER
STORE
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CONSULTATION ROOM 2
AMBULANCE ROOM
CAST ROOM
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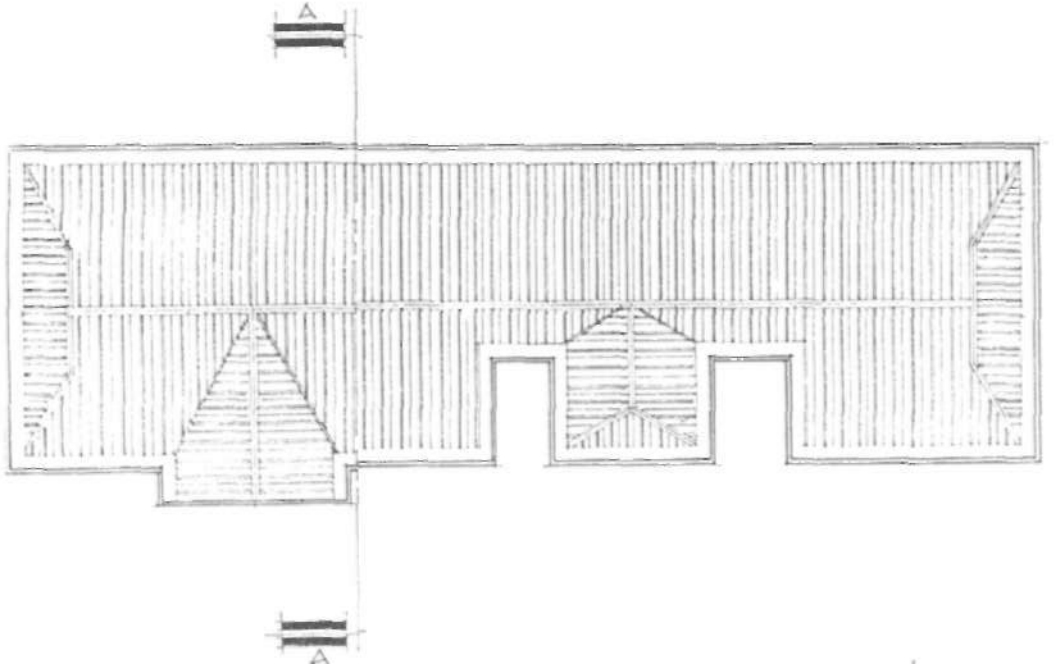


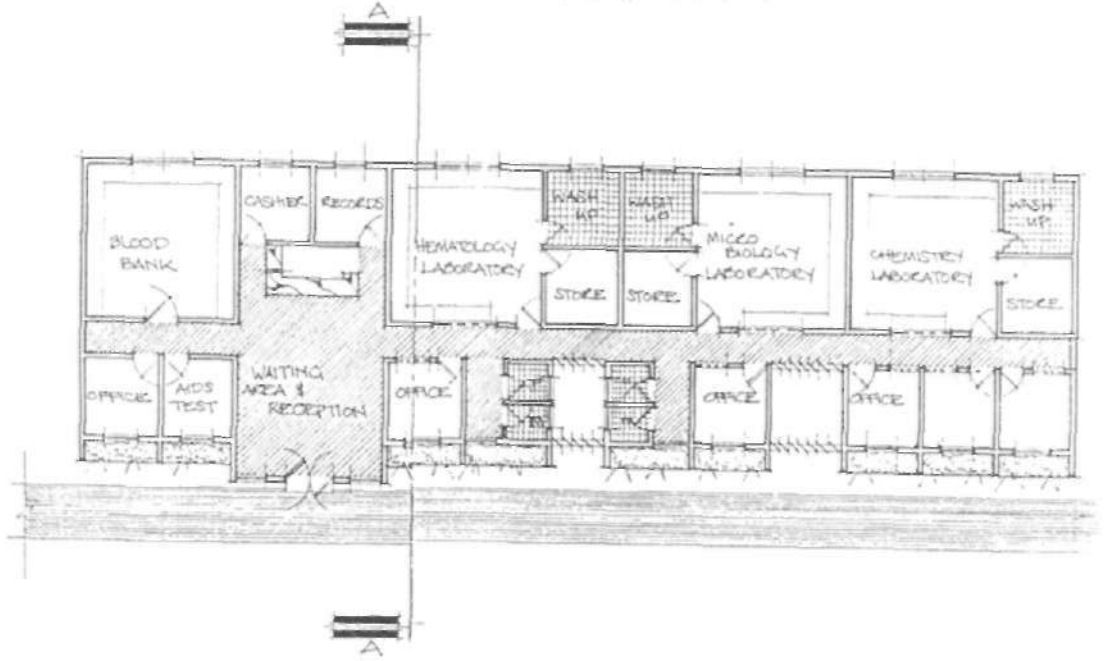
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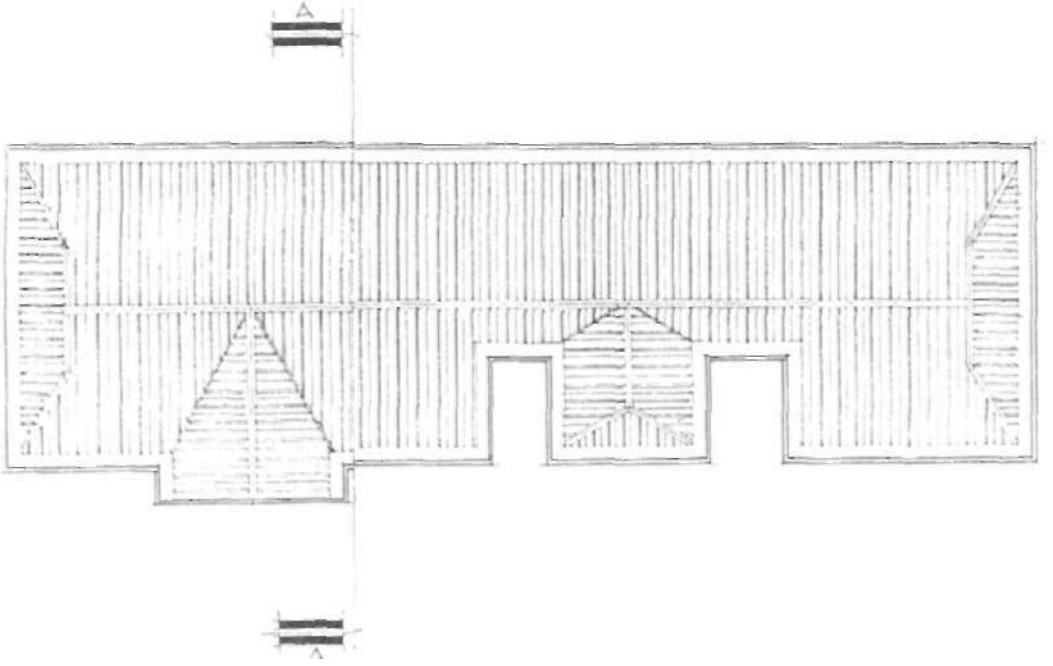


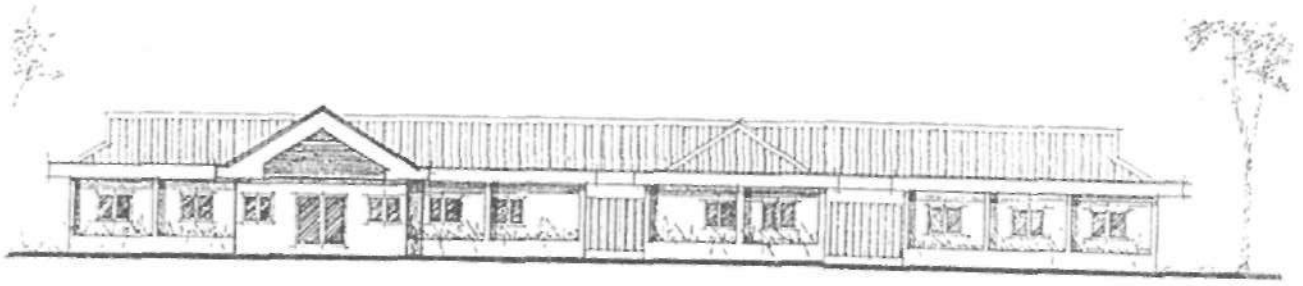
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RIGHT-SIDE ELEVATION
SECTION C-C
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CASHIER
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MICRO BIOLOGY LABORATORY
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AIDS TEST
WAITING AREA & RECEPTION
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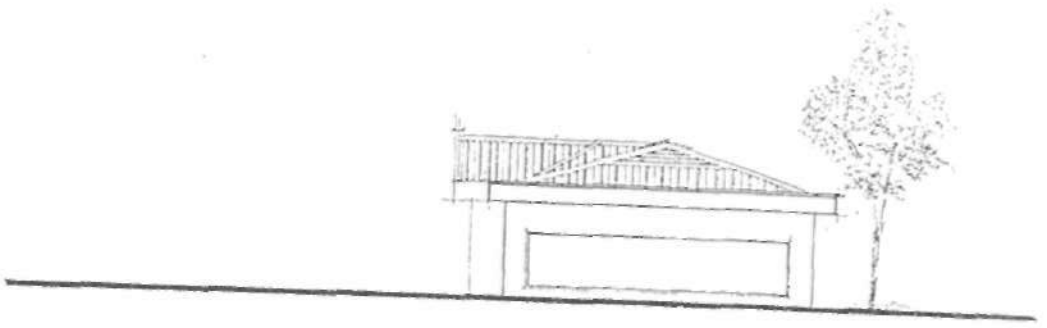

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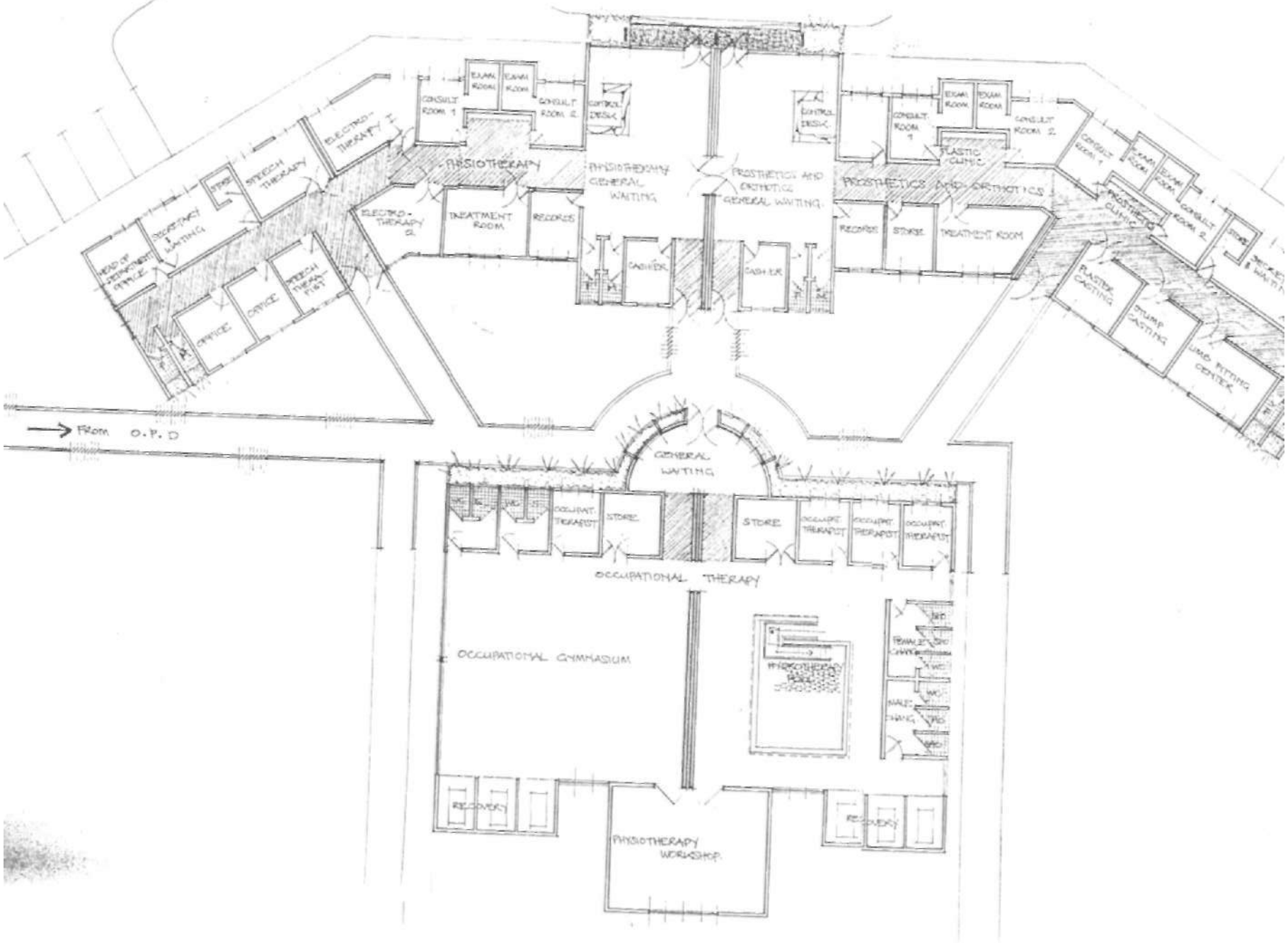


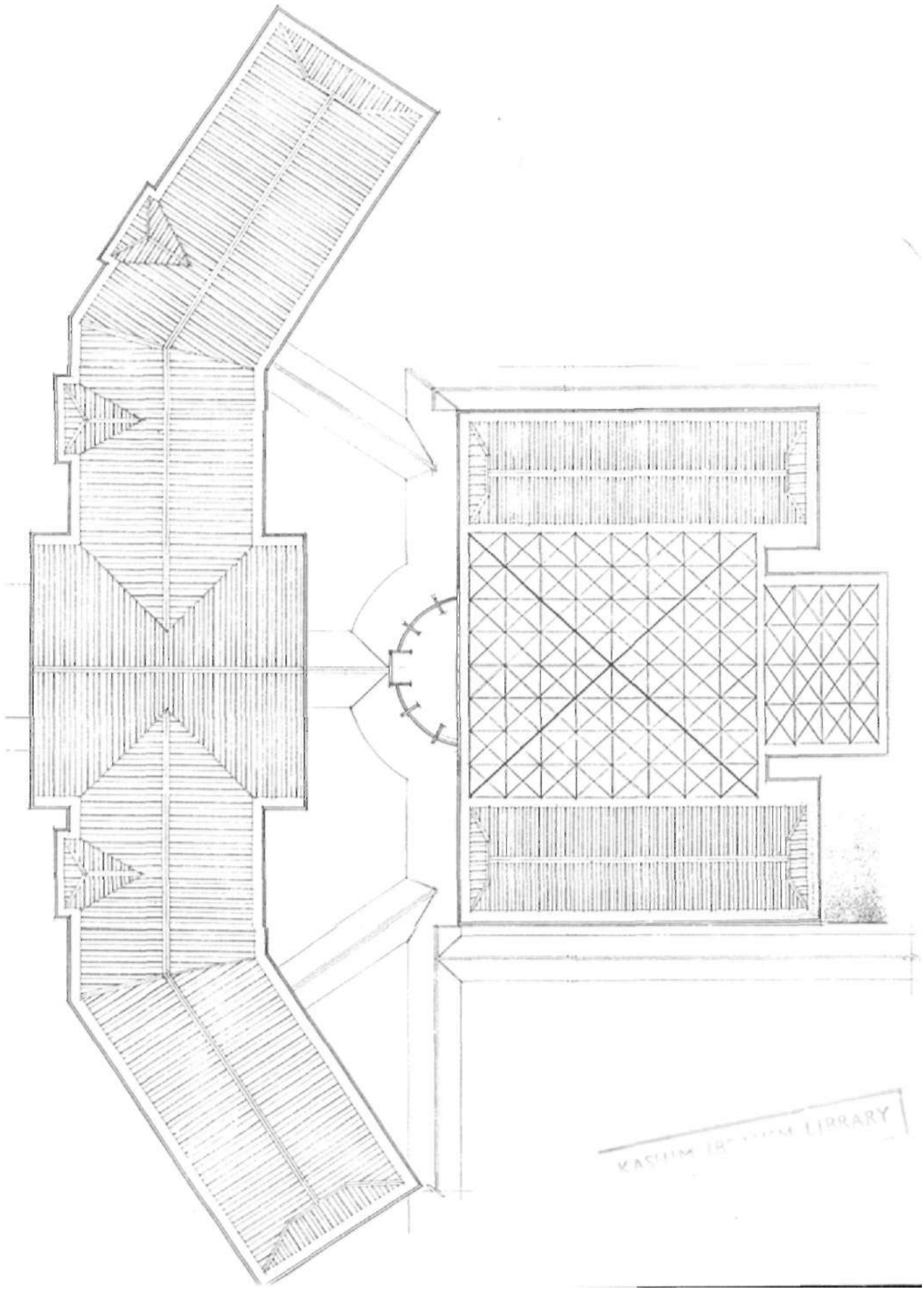
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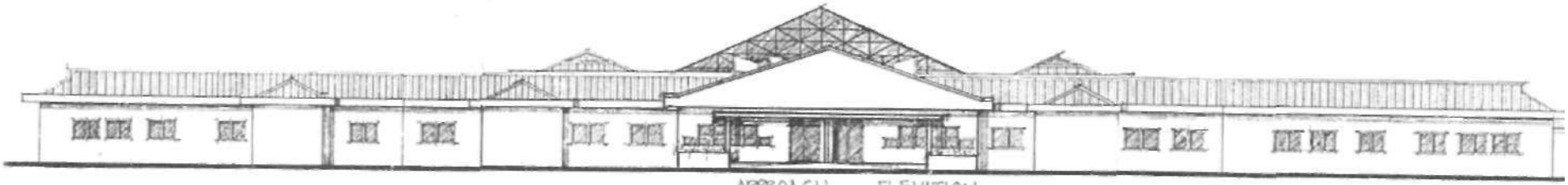


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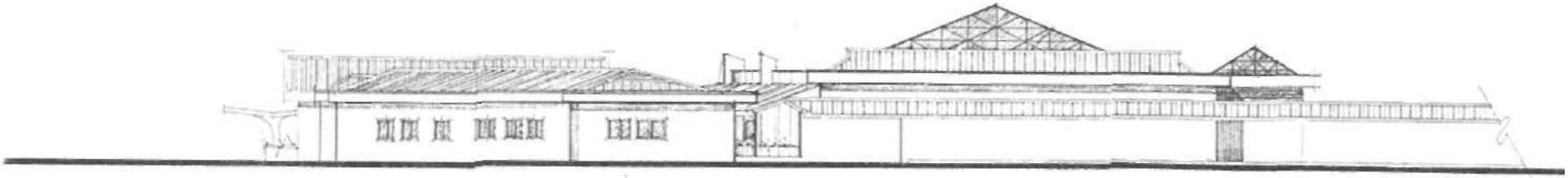



From O.P.D
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STORE
SPEECH THERAPY
ELECTRO-THERAPY
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OFFICE
SPEECH THERAPIST
ELECTRO-THERAPY
EXAM. ROOM
EXAM. ROOM
CONSULT. ROOM 1
CONSULT. ROOM 2
CONTROL DESK
PHYSIOTHERAPY
TREATMENT ROOM
RECORDS
PHYSIOTHERAPY GENERAL WAITING
CASHIER
CASHIER
PROSTHETICS AND ORTHOTICS GENERAL WAITING
CONTROL DESK
EXAM. ROOM
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CONSULT. ROOM 1
PLASTIC CLINIC
CONSULT. ROOM 2
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PROSTHETICS AND ORTHOTICS
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CONSULT. ROOM 2
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PLASTER CASTING
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LIMB FITTING CENTER
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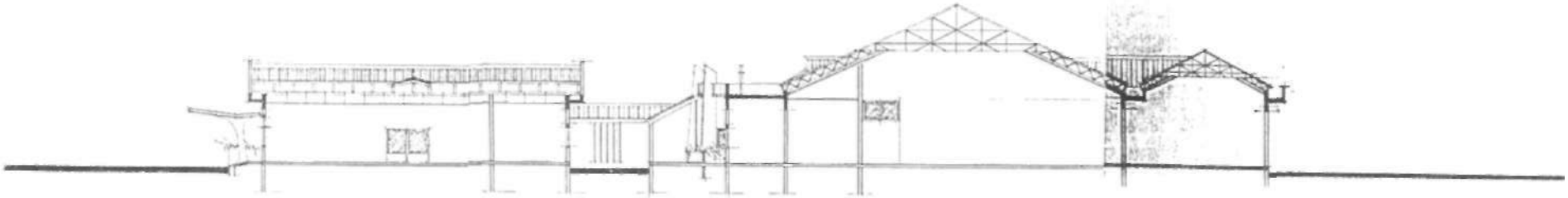

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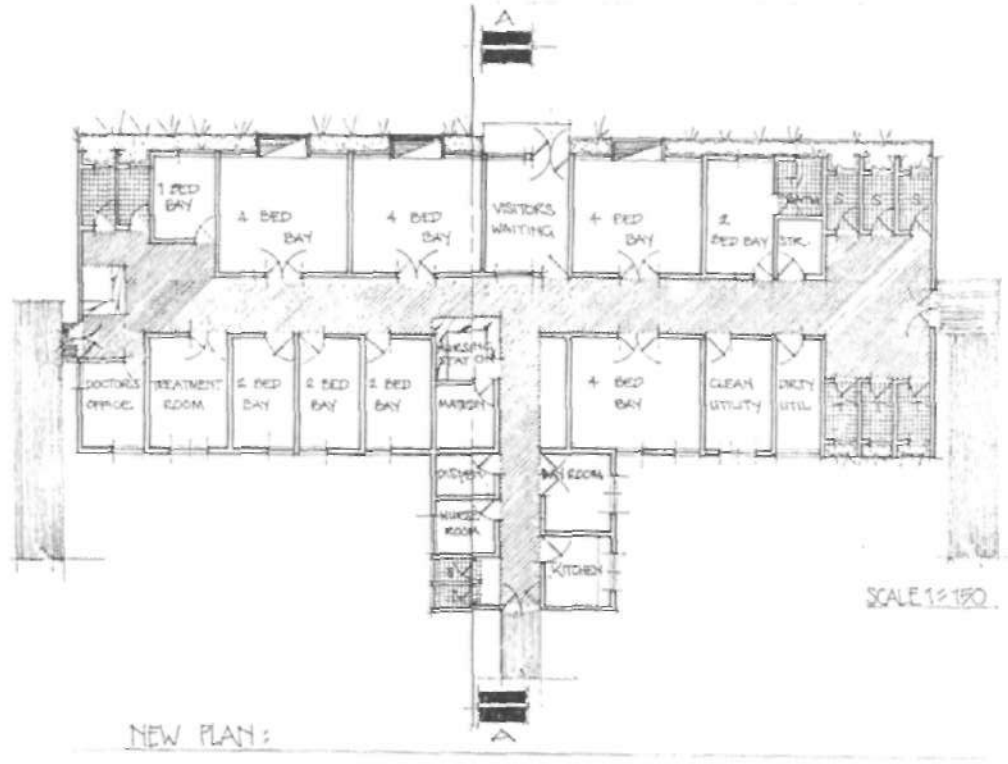
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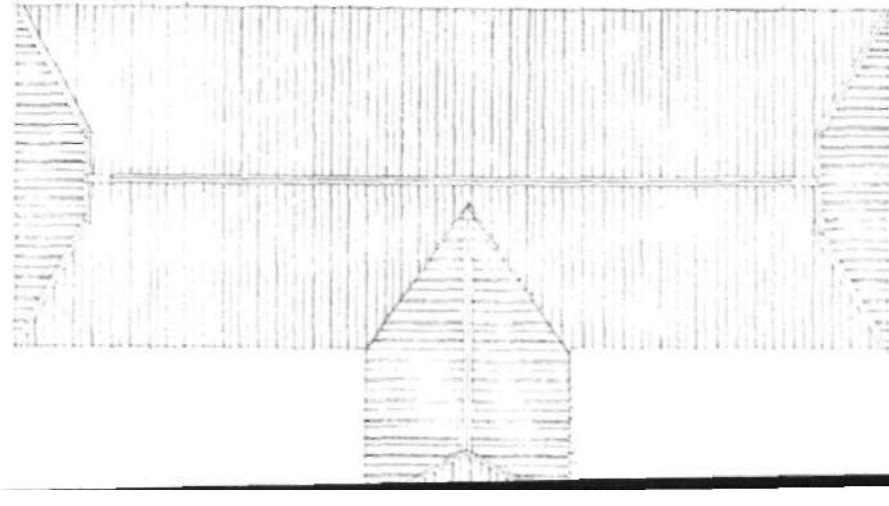
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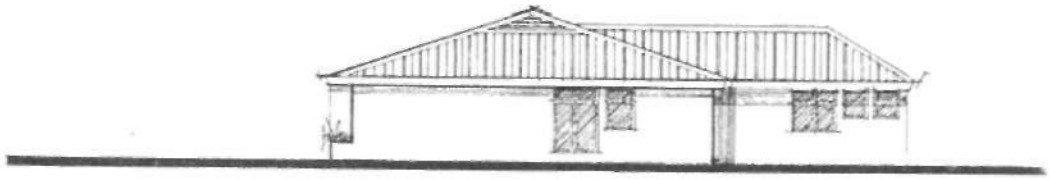


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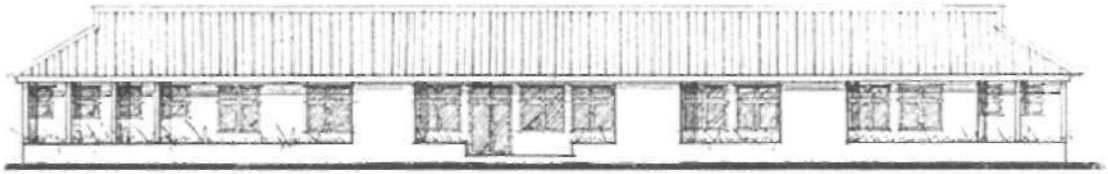

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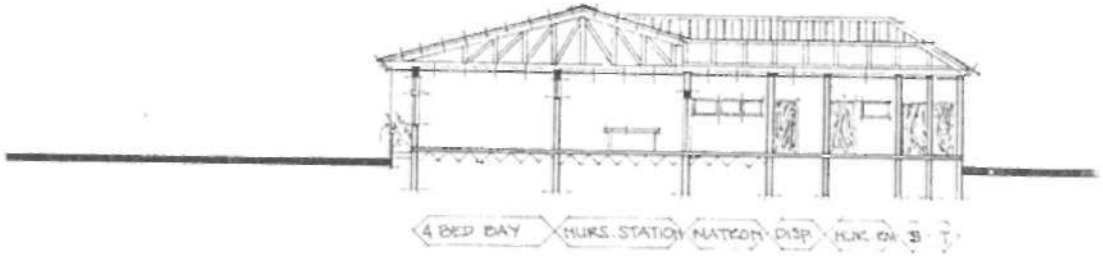




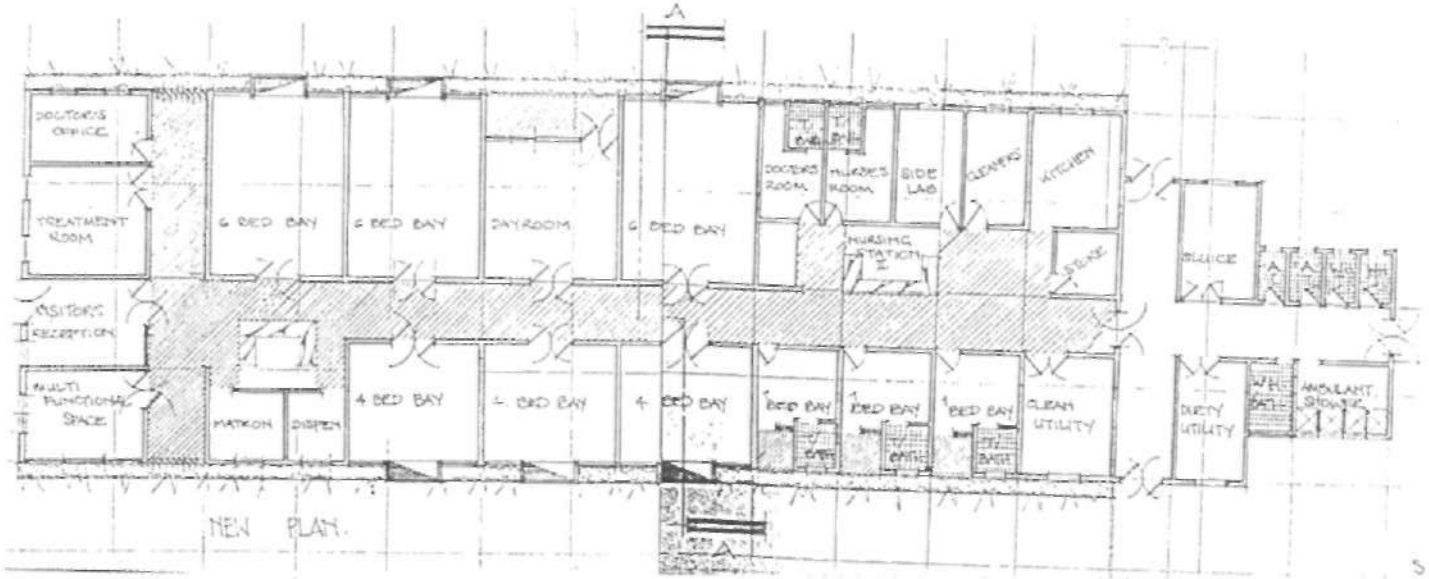
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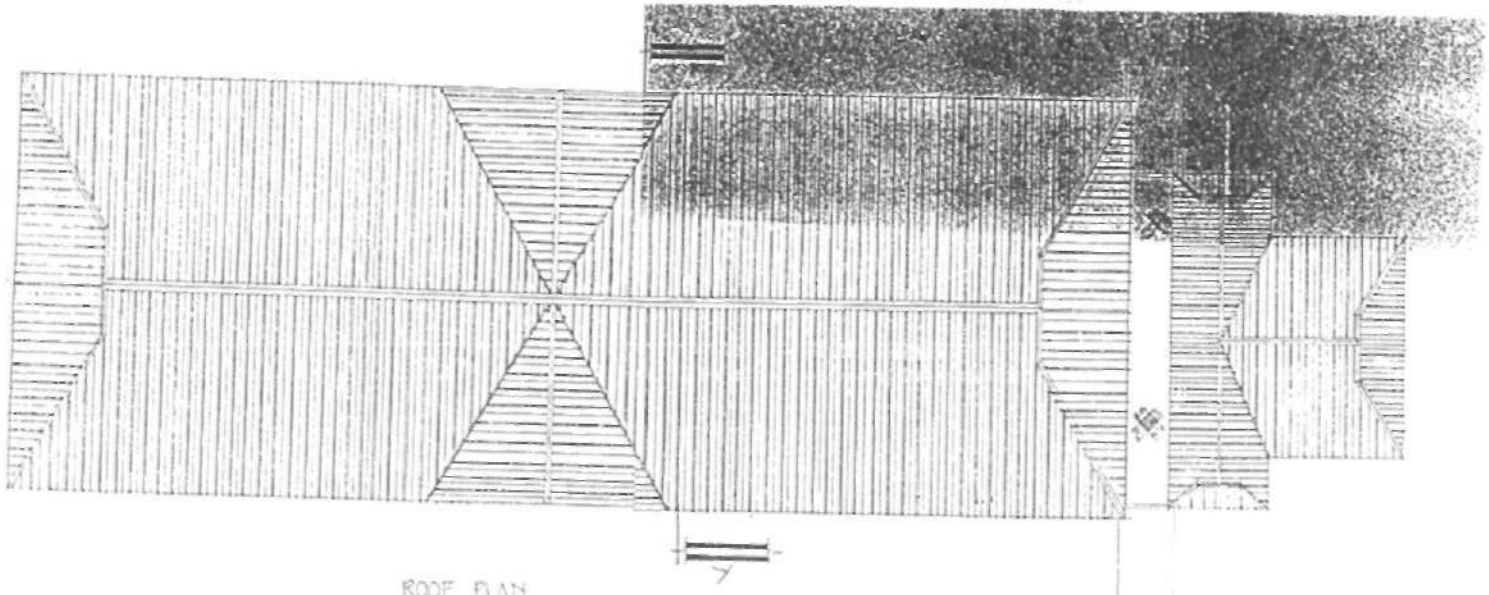
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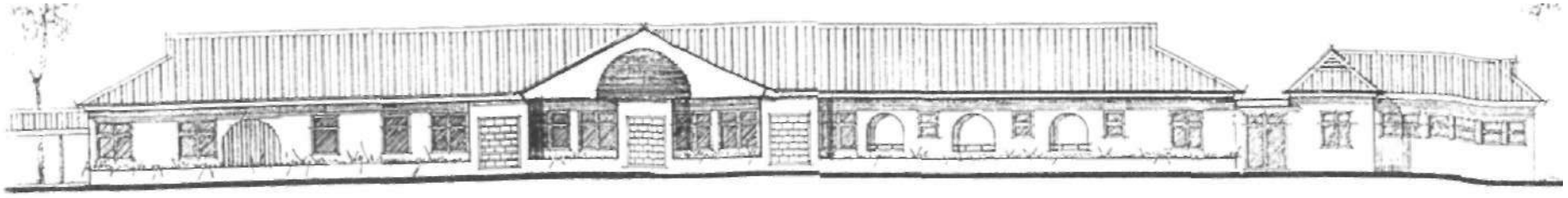
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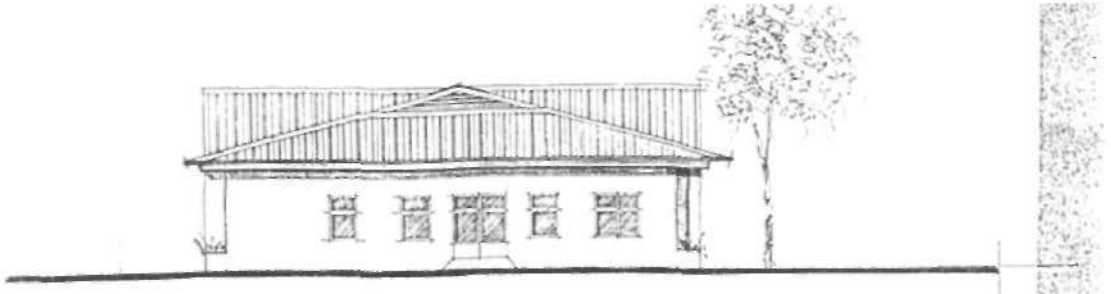
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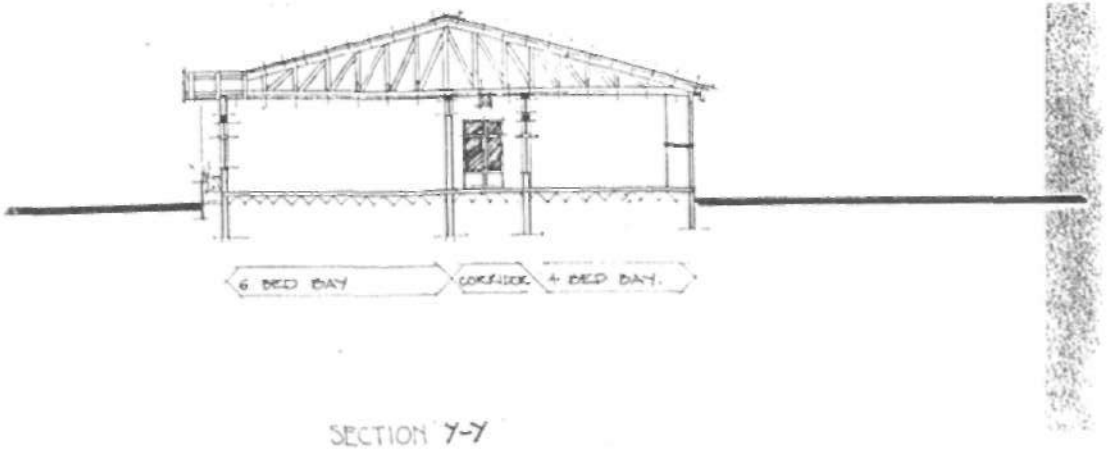
ROOF PLAN



RIGHT ELEVATION



FRONT ELEVATION



SECTION Y-Y