DEDICATION

This design thesis is dedicated to all persons with mental illness in Ghana

ACKNOWLEDGEMENT

This report and the whole project would not have been possible without the contribution, advice and support of many persons.

I am grateful to God for his mercies and guidance throughout my six year programme. My heartfelt appreciation and thanks goes to Mr R.K. Asante and Mrs. Edna Asante for their prayers and financial support.

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I want to express my gratitude to the following people for their support: Nana samy, Daniel Asante and Emmanuel Asante

DECLARATION

I declare that, I have personally undertaken this study under the supervision of Prof.G.W.K Intsiful and that no portion of this study has been presented to any university for any degree.

18-09-09
Date

Asante Philip Budjah

I declare that I have supervised the student above in undertaking the study

18-09-09
Date

Prof.G.W.K Intsiful

ABSTRACT

Psychiatric rehabilitation is the second stage in mental health delivery. Ghana has three psychiatry hospital but no rehabilitation facility.

Many of the homeless in our urban areas are ex-psychiatric in patients who receive little or no follow-up outpatient care. There is need for supportive housing and/or treatment facilities for ex-psychiatric patients.

There is also a great need for effective treatment of drug addiction and alcoholism. The genesis of drug and alcohol addiction is the perception as being a social and moral problem, instead of been clinical sickness.

Developing countries face many challenges in trying to establish and offer psychiatric rehabilitation services. Many of these countries cannot commit to health the minimum of US$ 12 per capita recommended by the World Health Organization (WHO) and also face severe human resource constraints, making the running of a Western style psychiatric rehabilitation service virtually impossible, few established are more like prison in disguise.

Ghana as developing country cannot boast of alcohol and drug rehabilitation though, abuse of these drugs are sky rocketing and its adverse effecting is visibly devastating.successive Government have over the years turn blind eye to the implementation of the mental bill. Added to this, is the phenomenon of ex-psychiatric patients relapsing due to absence of psychiatry after care (rehabilitation centre).also there is the absence of community intergeration; hence mentally-ill patients are stigmatized

Mentally-ill patients and facilities that accommodate them are of two conflicting school of thought within psychiatry fraternity, the traditionalist who recommends institutionalization of mentally-ill (secluded from the society). The other approach which, is out-patient system which blends both medical and community integration to help the mentally-ill patient recover to their normal state. Basically, the later approach is much efficient and medically proven.

This project seeks to bridge these conflicting schools of thought in psychiatry accommodate and help establish conducive standards to help provide a therapeutic environment for people with mental and drug addiction problems.

The philosophy behind this design is; *the break away from the "prison" ideology incoperated in most psychiatry design concept* i.e. the facility should be homey and not the stereotype hospital and clinic design, especially Pantan and Akaful psychiatric hospital in Accra and Central region respectively.

The basic guiding principles include: flexibility of design to meet individual patients needs and intergeration of the community in the healing process to eradicate stigma attached to psychiatry in Ghana.

TABLE OF CONTENT

CHAPTER THREE

CASE STUDIES

CHAPTER FOUR

CHAPTER FIVE

FINAL DESIGN

FIGURE TABLE

CHAPTER ONE

1.0 INTRODUCTION

Developing countries, such as those in sub-Saharan Africa, face many challenges in trying to establish and offer psychiatric rehabilitation services. Many of these countries cannot commit to health the minimum of US$ 12 per capita recommended by the World Health Organization (WHO) and also face severe human resource constraints, making the running of a Western style psychiatric rehabilitation service virtually impossible, few established are more like prison in disguise.

Ghana as a developing country cannot boast of alcohol and drug rehabilitation, though abuse of these drugs are sky rocketing and its adverse effecting is visibly devastating. The reasons for these are not farfetched and include the following:

•lack of political will of successive governments

•The lack of education on the adverse of effect alcohol and other hard drugs on human.

•stigma attached to mentally-ill patient and facility which accommodate them.

•pex-patients relapsing after cure from psychiatric hospital due to absence of a rehabilitation facility to reconcile the patient back to their normal state.

Given the absence of hard community based data for mental illness in Ghana it is necessary to follow the normal convention of extrapolating from WHO estimates.

Given the total population of 20 million people in Ghana the following should be true:

- **5,000,000** will suffer from neuro-psychiatric conditions during their lifetime.
- **2,000,000** will suffer from neuro-psychiatric conditions at a given time.
- **200,000** will suffer from severe mental illness.

1.1 Brief history of mental health in Ghana

Legal backing to mental health activities started with the enactment of the Lunatic Asylum Ordinance in 1888 signed by the pthen Governor of the Gold Coast, Sir Griffith

Edwards. Before this period, the mentally ill were found roaming in towns, villages, bushes and some locked up either in their homes or restrained by native doctors.

With the enactment of the ordinance, those who were found to be mentally ill were labeled "insane", arrested and put in a special prison in the capital Accra. By the beginning of the 20th Century, this prison had become full and therefore a facility named "The Lunatic Asylum, presently known as the Accra Psychiatric hospital was built in 1906.

The first psychiatrist Dr. E.F.B. Foster, a native of Gambia in posted from the colonial office in London to the Accra Psychiatric Hospital in 1951 transformed the Asylum into a hospital in conformity with the world wide changes at that time. He initiated changes and training of doctors and nurses who also became trainers. He also arranged for a number of doctors to specialize in the field of psychiatry abroad.

This led to the training of Qualified Registered Mental Nursing (Q.R.N.) in 1952 by Mrs. Higginson, a British national. The first trained mental nurse, Mr. L.L. Tamakloe joined the training school in 1965.

The Ghana Medical School started in 1962 with the inclusion of Psychiatric undergraduate training. The appointment of Doctor Asare, a UK trained Psychiatrist, coupled with interest from the Head of State in 1983, resulted in the setting up of a committee to advise the Government on improving Psychiatric services in the country and especially in the Accra Psychiatric Hospital. This was followed by the creation of the Mental Health Unit within the Ministry of Health. It heralded a new era for psychiatry.

Training of mental health nurses was further enhanced in the early 1990's. Public as awareness of mental health issues was intensified. A general drive to reduce the population of the Accra psychiatric hospital from 2,000 to 1,000 was achieved.

Mental health components in the Ghana health service

Mental health features at two levels- the institutional care and community mental health, popularly known as community psychiatry. The institutional care takes place in public psychiatric hospitals and some private psychiatric hospitals while the community component is practiced at the primary care level, championed by Community Psychiatric Nurses (CPNS).

a) Psychiatric hospitals

There are currently three psychiatric hospitals in the country namely,

1) Accra Psychiatric hospital, built in 1906 with a capacity for 800 beds but Currently accommodates 1200patients.

2) Ankaful Psychiatric hospital built in 1965 in the Central Region of Ghana. With a capacity for 500 beds but has 150 in patients now. The reduction in the number of in-patients is due to dwindling number of nurses and doctors.

3) The Pantang hospital was hurriedly commissioned in1975 to decongest the Accra Psychiatric hospital. The original intention of the then Head of state Dr. Kwame Nkrumah who initiated the building of Ankaful and Pantang was to provide a Pan-African Mental Health Village for Research. It was a grandiose project that would have recruited experts from Africa.

Currently the hospital has a capacity for 500 beds but accommodates 450 patients. It has a vast land with a number of uncompleted wards, bungalows and junior staff accommodation left in the bush. Both Ankaful and Pantang have nursing training schools attached, producing Registered Mental Nurses.

b) Other psychiatric services

There has been a policy of creating beds in the Regional capitals for psychiatric cases. Since this policy was formulated, some beds have been created in **five** of the ten Regions of Ghana even though each of the other five Regions provides beds in medical wards for psychiatric cases.

Regions and number of beds provided

- **10** beds have been provided in Volta Regional Capital, Ho in their Regional General Hospital.
- **15** beds in Ashanti Region, (Komfo Anokye Teaching Hospital).
- **10** beds Upper West Regional Capital Wa.

- **22** beds in Sunyani Regional hospital at,
- **20** beds Koforidua ,Eastern Regional capital

Source: Mental profile (Ghana) 2003 who.int/countries/ gh /publication/mental_health_profile,

c) Private services

There are two private hospitals in Kumasi;

Ashanti Region –Pankrono Neuro-Psychiatric hospital.

Adom Clinic at Santase.

In Accra, there is one private hospital –Valley View Clinic and in the Port city of Tema, the Alberto clinic. All the private clinics are manned by psychiatric specialists except Adom Clinic which is manned by an experienced nurse.

d) Activities of psychiatric Hospitals

Psychiatric hospitals undertake assessment treatment and have rehabilitation facilities for long stay patients. They also offer both in and out-patients facilities.

In the Accra psychiatric hospital, there are a few patients who attend the Occupational Therapy Department as day patients. Ankaful and Pantang hospitals are located in a rural setting and therefore provide outpatient cover for primary health care, physical ailments including Maternal and child Health.

The Accra psychiatric hospital has an overcrowded forensic facility for both men and women in two separate wards .Postgraduate and undergraduate medical training takes place mainly at the Accra Psychiatric Hospital. Ankaful is accredited for Diploma in Mental Health Training. Various types of assessments and counseling are undertaken by the clinical Psychologist.

All of the psychiatric hospitals are used for nursing affiliation programmes, social welfare training and training of clinical psychologists to the Masters.

Legislations for mental health in Ghana

Substance Abuse Policy (formulated 1990) On substance abuse there are three main laws. The Narcotic Drugs Control, Enforcement and Sanctions Law (1990), PNDC Law 236 and Pharmacy & Drugs Act (1961).National Mental Health Policy and programmes were formulated in 1994 and revised in 2000.

National Therapeutic Drug Policy/Essential List of Drugs is available and was formulated in 1986 Mental Health Legislation The NRC Decree 1972, Mental Health Law, was revised in 1992 and 1995 but has not been rectified by parliament as yet. The mental health law, though an improvement on the Mental Health Act, puts a lot of responsibilities on the head of the institution of the psychiatric hospital which was mainly the Accra Psychiatric hospital without taking into consideration the presence of other psychiatric hospitals and psychiatrist's in the system.

It is also institutional based oriented with no consideration towards community mental health and rehabilitation of the mentally ill. Provisions of facilities in general hospitals were not also considered and it does not deal with specific Human Rights of the patients. There are no laws governing the care of the mentally ill outside psychiatric hospitals particularly in traditional healing centers and spiritual homes.

Substance abuse policy (formulated 1990)

On substance abuse there are three main laws. The Narcotic Drugs Control, Enforcement and Sanctions Law (1990); PNDC Law 236 and Pharmacy & Drugs Act (1961).

Reference: Ghana Health Service, Accra, Ghana: Mental profile (Ghana), 2003

It is against this background the design thesis topic "Alcohol and drug rehabilitation centre was taken. The main rationale behind this design thesis is to come out with a therapeutic Architectural space and environment which aids recuperation and management of mentally ill people.

1.2 **Problem statement**

Mental illness cannot be cured but it is simply managed through a stipulated period by series of therapies, medical assistance, and community integration. With the escalating mental and drug abuse cases, coupled with high back log of mentally relapsed patient with nowhere to go, the situation seems doom and hence, needs urgent attention.

Given the absence of hard community based data for mental illness in Ghana it is necessary to follow the normal convention of extrapolating from WHO estimates.

Thus:

25% of the population suffers from neuro-psychiatric conditions during their lifetime.

10% of any population is suffering from neuro-psychiatric conditions at any time.

1% of that population is suffering from severe mental illness.

Added to these frightening UN mental statistics, is the phenomenon of huge back locked of ex- psychiatric patients who have relapsed as the result of lack of mental rehabilitation facility in the entire country (Ghana).

Added is the escalating problem of substance and specifically alcohol abuse our institutions and homes. In addition to few psychiatric facilities which are even marginalized along the southern sector, there are huge back log of ex-psychiatric patients in various homes and on our streets. Unfortunately due to the stigma attached to mental illness and psychiatry facilities, drug abuser and alcoholics stay away from medication. It is therefore necessary that a facility which will be centrally located (Ashanti Region) to serve the middle and northern belt of Ghana.

Based on sky rocketing of mental health cases in Ghana coupled with inadequate psychiatric facilities, attention on mental health is abysmal. The nominal trend of mentally ill patients each year can't equate the facility provided.

Reference: Ghana Health Service, Accra, Ghana: Mental profile (Ghana), 2003

Therapeutic Architectural space, healing environment and effective mental therapies are the eminent measures left out in psychiatry services in Ghana. Hence, this design thesis tends to rectify these anomalies.

1.3. **Justifications**

There is a law on drugs and narcotic substances. But the mental health Law of1972 has not been reviewed yet. This is something that needs to be addressed. There have been two unsuccessful attempts to review the law in 1992 and 1996.

Currently, there have been a review of the 1972 mental bill but it has not pass as Bill in Parliament and left to left to gather dust whiles problems in the mental health piles up from inadequate mental facilities, disparities in staff-patients ratio across the country.

The draft of the mental bill tends to subvert the current abysmal mental problems in Ghana, through decentralization of mental health centers and its respective rehabilitation centers across the country. It also fills up most of the loop holes in the current trend of mental health situation in the country.

Mental health professionals, the private sector, NGO'S, churches and other traditionalist have all been drafted in the reviewed bill to aid mental health in Ghana.

1.4. **Objectives**

- Creating a therapeutic environment devoid of institutional "prison mentality" attached to psychiatric design concept.
- The design tends to encourage the community and group integration in mental health services.
- The design champions the use of horticulture therapy in mental health delivery
- The design tends to break away from the stereotype special hospital design (rehabilitation and psychiatric) and makes it more homely, hence reducing the stigmatization.

- The design encourages relatives and families of mentally challenged persons to opt for seeking help at therapeutic rehabilitation center instead of taking them to spiritualist.

1.5. **Scope**

The project will cover both medical and social detoxification of drug abuse patients and the mentally disabled people. It will comprise of; horticultural therapy, physiotherapy, speech therapy, occupational therapy and recreational therapy. The design will provide a serene environment for both outpatient and in patients with emphasis on facilities which support mentally ill out patient.

1.6. **Target group**

The facility will admit and aids recover patients with the following cases:

- People with drug addiction problem
- Alcoholics
- Patients with both acute and mild schizophrenia.
- Bipolar patients
- People with chronic depression and
- Anxiety

Targeted location is at Nyinahin within Atwima Mponna District in the Ashanti Region. The location will serve Brong-Ahafo, Western and the Ashanti Regions.

REFERENCE

1. Reference: Ghana Health Service, Accra, Ghana: Mental profile (Ghana), 2003

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1. Defining mental illness

No universally accepted definition of mental illness exists. In general, the definition of mental illness depends on a society's norms, or rules of behavior. Behaviours that violate these norms are considered signs of deviance or, in some cases, of mental illness.

Because norms vary between cultures, behaviors considered signs of mental illness in one culture may be considered normal in other cultures. For example, in the United States, a person who experiences trance and possession states (altered states of consciousness) is usually diagnosed as suffering from a mental illness. Yet, in many non-Western countries, people consider such states an essential part of human experience. In Native American culture, it is common for people to hear the voices of recently deceased loved ones. In contrast, most mental health professionals in Western cultures would consider such behavior a possible symptom of schizophrenia or psychosis.

The variation in behavioral norms does not mean, however, that definitions of mental illness are necessarily incompatible across cultures. Many behaviors are recognized throughout the world as being indicative of mental illness. These include extreme social withdrawal, violence to oneself, hallucinations (false sensory perceptions), and delusions (fixed, false ideas).

Another way of defining mental illness is based on whether a person's behaviors are maladaptive—that is, whether they cause a person to experience problems in coping with common life demands. For example, people with social phobia may avoid

interacting with other people and experience problems at work as a result. Critics note that under this definition, political dissidents could be considered mentally ill for refusing to accept the dictates of their government.

Mental Illness, disorder characterized by disturbances in a person's thoughts, emotions, or behavior. The term mental illness can refer to a wide variety of disorders, ranging from those that cause mild distress to those that severely impair a person's ability to function. Mental health professionals sometimes use the terms psychiatric disorder or psychopathology to refer to mental illness

2.1. Alcohol and Other Addictive drugs

2.1.1. Introduction

Drug dependence, psychological and sometimes physical state characterized by a compulsion to use a drug to experience psychological or physical effects. Drug dependence takes several forms: tolerance, habituation, and addiction.

Tolerance, a form of physical dependence, occurs when the body becomes accustomed to a drug and requires ever-increasing amounts of it to achieve the same pharmacological effects. This condition is worsened when certain drugs are used at high doses for long periods (weeks or months), and may lead to more frequent use of the drug. However, when use of the drug is stopped, drug withdrawal may result, which is characterized by nausea, headaches, restlessness, sweating, and difficulty sleeping. The severity of drug withdrawal symptoms varies depending on the drug involved.

Habituation, a form of psychological dependence, is characterized by the continued desire for a drug, even after physical dependence is gone. A drug often produces an elated emotional state, and a person abusing drugs soon believes the drug is needed to

function at work or home. Addiction is a severe craving for the substance and interferes with a person's ability to function normally. It may also involve physical dependence.The drugs that are commonly abused, except alcohol and tobacco, can be grouped into six classes: the opioids, sedative-hypnotics stimulants, hallucinogens, cannabis, and inhalants.

2.1 .2. **Prevalence**

Alcohol dependence affects a broad cross section of society around the world. Statistics show that alcohol dependence touches successful business executives, skilled mechanics, laborers, homemakers, and church members of all denominations. Scientists have not identified a typical alcoholic personality, and they cannot predict with absolute certainty which drinkers will progress to alcohol dependence.

Alcohol use varies depending on an individual's social, cultural, or religious background. Some individuals do not drink at all—about one-third of adults in the United States who are 18 and older, for example, abstain from alcohol. Others drink as part of social custom. Still others drink frequently and in substantial amounts. Those suffering from alcohol dependence drink to appease an uncontrolled craving for alcohol or to avoid experiencing the unpleasant symptoms of withdrawal.

WHO estimates that about 76 million people worldwide suffer from alcohol-related disorders. The prevalence of the illness varies in different countries. In the United States about 15 percent of the population experiences problems related to their use of alcohol. Of these, alcohol dependence affects about 12.5 million men and women, or almost 4 percent of the population. Men are three times more likely than women to become alcoholics, while people aged 65 and older have the lowest rates of alcohol dependence.

In the United States, people who start to drink at an early age are at particular risk for developing alcohol dependence. Estimates indicate that 40 percent of people who begin to drink before age 15 will become alcohol dependent at some point in their lives. These individuals are four times more likely to become alcohol dependent than those who delay drinking until age 21.

TOP TEN CASES OF ADMISSION TO PSYCHIATRIC HOSPITALS 2002

1	Schizophrenia	-	1599
2	Substance Abuse	-	1101
3	Depression	-	736
4	Hypomania	-	629
5	Acute Organic Brain Syndrome	-	495
6	Manic Depressive Psychosis	-	343
7	Schizo –Affective Psychosis	-	284
8	Alcohol Dependency Syndrome	-	215
9	Epilepsy	-	191
10	Dementia		131

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64	

DRUG RELATED ADMISSIONS TO ACCRA PSYCH HOSP. YR 2002

ADMISSIONS		COCAINE		HEROIN		CANNABIS		ALCOHOL		MULTIPLE	
M	F	M	F	M	F	M	F	M	F	M	F
692	27	3	1	7	0	483	2	152	22	46	1
719		4		7		485		174		47	

Reference: Phelps Michael / Baxton Lewis, 'Hard Drugs' Encarta Encyclopaedia, Redmond, Wa, microsoft Coperation, 2008

DRUG RELATED ADMISSIONS TO ACCRA PSYCH. HOSPITAL YR 2000

ADMISSIONS		COCAINE		HEROIN		CANNABIS		ALCOHOL		MULTIPLE	
M	F	M	F	M	F	M	F	M	F	M	F
502	23	2	0	6	1	348	6	112	13	33	3
525		2		7		254		125		36	

Fig.1

Reference: Ghana Health Service, Accra, Ghana: Mental profile (Ghana), 2003

2.2. REHABILITATION PROGRAMMES

Assist people with severe mental illnesses in learning independent living skills and in obtaining community services. Counselors may teach them personal hygiene skills, home cleaning and maintenance, meal preparation, social skills, and employment skills. In addition, case managers or social workers may help people with mental illnesses obtain employment, medical care, housing, education, and social services. Some intensive rehabilitation programs strive to provide active follow-up and social support to prevent hospitalization.

Therapists often use *play therapy* to treat young children with depression, anxiety disorders, and problems stemming from child abuse and neglect. The therapist spends time with the child in a playroom filled with dolls, puppets, and drawing materials, which the child may use to act out personal and family conflicts. The therapist helps the child recognize and confront his or her feelings. These and other programs are enacted to help reconcile the mentally-ill patient back to the community.

2.2.1. Group and Family Therapies

In group therapy, a number of people gather together to discuss problems under the guidance of a therapist. By sharing their feelings and experiences with others, group members learn their problems are not unique, receive emotional support, and learn ways to cope with their problems. Psychodrama is a type of group therapy in which participants act out emotional conflicts, often on a stage, with the goals of increasing their understanding of their behaviors and resolving conflicts. Group therapy generally costs less per person than individual psychotherapy.

Family intervention programs help families learn to cope with and manage a family member's chronic mental illness, such as schizophrenia. Family members learn to monitor the illness, help with daily life problems, ensure adherence to medication, and cope with stigma.

Reference:Phelps Michael / Baxton Lewis, 'Hard Drugs' Encarta Encyclopaedia,Redmond,Wa,microsoft Coperation, 2008

2.2.2. Electroconvulsive Therapy

Electroconvulsive therapy (ECT) is a treatment for severe depression in which an electrical current is passed through the patient's brain for one or two seconds to induce a controlled seizure. The treatments are repeated over a period of several weeks. For unknown reasons, ECT often relieves severe depression even when drug therapy and psychotherapy have failed. The treatment has created controversy because its side effects may include confusion and memory loss. Both of these effects, however, are usually temporary.

2.3. TREATMENT FACILITIES FOR MENTALLY CHALLENGED PATIENT

A significant portion of the homeless population in the Ghana suffers from a chronic mental illness, such as schizophrenia. The shortage of mental health treatment centers in many cities and towns may partly account for the large number of mentally ill people who are homeless or in jail.

Mental hospitals or psychiatric wards in general hospitals are used to treat patients in acute phases of their illnesses and when the severity of their symptoms requires constant supervision. Most individuals who suffer from severe mental illness, however, do not require such close attention, and they can usually receive treatment in community settings.

Often, patients who have just completed a period of hospitalization go to group homes or halfway houses before returning to independent living. These facilities offer patients the opportunity to take part in group activities and to receive training in social and job skills. In supportive housing, mentally ill individuals can live independently in an environment that offers an array of mental health and social services. Some people with Chronic and severe mental illnesses require care in long-term facilities, such as nursing homes, where they can receive close supervision.

Unfortunately, many areas have a shortage of treatment centers, especially community mental health centers and supportive housing environments. This shortage may partly account for the large number of mentally ill people who are homeless or in jail.

2.4. THE RELATIONS OF TREATMENT GOALS TO BUILDING PROGRAMME

There are a number of modern psychiatric hospitals types, but all of them accommodate patients based on institutionalization or out patient system and sometimes both systems are blended and utilized.

2.4.1 Crisis Stabilization

One type is the crisis stabilization unit, which is in effect an emergency room for mental disorders. Laws in many jurisdictions providing for involuntary commitment require a commitment order issued by a judge within a short time (often 72 hours) of the patient's entry to the unit.

2.4.2 Open Units

Open units are psychiatric units that are less secure than crisis stabilization units

They are not used for acutely suicidal persons; the focus in these units is to make

life as normal as possible for patients while continuing treatment to the point where they can be discharged. However, patients are usually still not allowed to hold their own medications in their rooms, because of the risk of an impulsive overdose. While some open units are physically unlocked, other open units still use locked entrances and exits. This is to keep patients from escaping, which may be described as "leaving impulsively," or leaving without being discharged from the unit.

2.4.3. **Medium-term**

Another type of psychiatric hospital is a medium term, which provides care lasting several weeks. Most drugs used for psychiatric purposes take several weeks to take effect, and the main purpose of these hospitals is to watch over the patient while the drugs begin their expected effect and the patient can be discharged.

2.4.4 **Juvenile wards**

Juvenile wards are sections of psychiatric hospitals or psychiatric wards set aside for children and/or adolescents with mental illness. These usually consist of anyone aged under eighteen (18).

2.4.5. **Long term care facilities**

In the UK long-term care facilities are now being replaced with smaller secure units (some within the hospitals listed above). Modern buildings, modern security and being locally sited to help with reintegration into society once medication has stabilized the condition are often features of such units. An example of this is the Three Bridges Unit, in the grounds of Hanwell Asylum in West London and the John Munroe Hospital in Staffordshire. However these modern units have the goal of treatment and rehabilitation back into society within a short time-frame (two or three years) and not all forensic patients' treatment can meet this criterion, so the large hospitals mentioned above often retain this role.

2.4.6. **Halfway houses**

One type of institution for the mentally ill is a community-based halfway house. These houses provide assisted living for patients with mental illnesses for an extended period of time. These institutions are considered to be one of the most important parts of a mental health system by many psychiatrists, although some localities fail to provide sufficient funding for them, such provision being seen as costly.

2.4.7. Used as a form of prison

In some countries the mental institution may be used for the incarceration of political prisoners, as a form of punishment In the United States, more so in the past than now (although it still happens) a 72 hour hold would be placed on a person by police when that person had committed no crime, but the police still wanted to take action against that person.

2.5. HOSPITALIZATION IN PSYCHIATRY(TYPES)

2.5.1 Outpatient clinic

In a community-oriented service it is necessary to make greatly increased provision for outpatient clinics, not only for new and short-term patients, but to accommodate the large proportions of chronically ill patients who are maintained outside hospital as part of the community care programmes.

2.5.2 Emergencies

Evidence both from hospitals running a crisis intervention team and from local experience of running an emergency clinic shows that an effective service for dealing with emergencies plays a large part in avoiding admission to hospital. What is not clear is what type of service is best for dealing with emergencies. What is most effective may well depend on the area being served. Crisis intervention has been extensively written up, is well established and has proven its worth. An emergency clinic might not reach all those helped by a crisis intervention service, but it is somewhat more economic to run and probably better at dealing with short-term problems. A third possibility for emergencies is a community mental health centre. It is not entirely clear how for this type of emergency service deals with mentally ill people who, under other arrangements, come to the notice of psychiatrists, and how far it attracts part of the wider range of people showing 'conspicuous psychiatric morbidity'

Reference: Phelps Michael / Baxton Lewis, 'Hard Drugs' Encarta Encyclopaedia, Redmond, WA, Microsoft Coperation, 2008

2.5.3. **Day hospitals and rehabilitation**

Separate day hospital services for elderly and younger patients are necessary. Ideally these day hospitals should be organized separately from the occupational therapy facilities for in-patients. The shorter-term aims of inpatient occupational therapy frequently conflict with the longer-term aims and programmes of the day hospital treatment. In addition to more traditional occupational therapy, emphasis must be placed on learning social skills and on handling social relationships. Conventional attitudes towards rehabilitation have tended to emphasis the needs for occupational rehabilitation, and to have been 'prescribed' as a course of treatment over a defined period of time, after which the patient may be considered to have 'failed' if, the outcome is not immediately successful. This should no longer be true either for 'old' long-stay or for younger chronically mentally ill patients. For this latter group it is important to ensure that the patient has the opportunity to settle in satisfactory accommodation outside the hospital, as a base for developing social and working skills.

2.5.4. **Old long-stay patients'**

In the development comprehensive district-based services it could be argued that it would be ideal for each district to manage locally all the old long-stay patients from the big psychiatric hospitals. Two main factors prevent patients returning to the district from which they originated. Firstly, there are some patients who are not well enough to be discharged. Secondly, there are other patients, probably the larger number, who no longer have any meaningful contact in their area of origin, and who refuse to be returned on the basis of a 'settlement certificate' to a place they left perhaps 40 years ago. This is an attitude with which clinicians and planners should be entirely in sympathy.

Reference: Journals: Health and Social Behavior, UK, (1993)

2.6. PSYCHIATRY BUILDING MORPHOLOGY

Introduction

The architectural principle "form follows function" implies that the planning processes be organize the function duties and activities in terms of a written programme. It is an exercise to generalize the needs perculiar to the treatment and care provided by mental health programme from which the principles of form may be developed. The patient in addition to receiving somatic and psychological type of treatment is also given the opportunities for strengthening the self thought social **intersaction** and problem – solving.

Emphasis on using various groups is one of the most striking developments in modern treatment of the mentally ill. The facilities must provide not only shelter, peace and privacy to small groups and then to a larger group.

Special consideration should be given to privacy, familiarity or recognisability of surroundings identity, orientation and normal activities of daily living. This condition reduces the feelings of strangeness that accommodates mental illness. The rooms occupy by the patients should reflect his/her normal experiences and the standards prevailing in his/her community.

2.6.1. HOUSING

Mentally ill patient in psychiatric hospital who is fully ambulant, a considerable degree of self-care may be assumed his need for privacy is greater than other categories of patients. Privacy and shelter are of obvious importance as most of the mental patients have fantasies-crape, persaution and similar fearful experiences .

Design details such as privacy doors or **awilains** for bath and wc cubicles are very important in response to his needs.

Journals: Health and Social Behavior, UK, (1993)

Identity individuality,dignity and worth are often left out in psychiatric hospitals.this could be corrected by letting out the patient patient retain as many of his personal effect

as possible-provide individual walldrobes,drawers and dressers space in patient rooms.orientation of patients to time and place may have been impaired.this disorientation can be reduced by maps of the facilities,clocks and calenders.provide facilities which are similar in function like housing.

In-patient rooms should replicate the norms in normal hospital i.e.-multilpe bedrooms which are appropriate for adult accommodation in psychiatric hospital to eet the normal requirements for flexibility of use such as segregation of sexes,patient quiet and privacy. These should be supported by various categories of nursing care.

Various research study showed that although some patients had been in psychiatric wards for up to four years, there was no-one for whom their consultant thought this is the most suitable provision. In order to act on this, and use hospital wards as, at most, a relatively short-stay provision, other types of buildings will be needed. We have identified a range of needs; which can be set out as a progression from the total dependence of the psychiatric ward through to the independence associated with an ordinary flat. Ideally there should be enough places at each point on the progression to enable people to move relatively quickly from one to another as their needs change ,One solution to the problem of moving people from one building to another is to develop a system, which moves the support rather than the client. These basic elements range of accommodation are ordinary council flats in which a person can be given more or less support (according to his/her needs at any time) in addition to this accommodation there are a number of special projects which cater for specific needs.

2.10.2. **Hostel type** accommodation with less support

Hostel and communal accommodation of a variety of styles is needed for quite a large number of people with disabilities and chronic mental illness. Some should have a definite rehabilitative approach, others should place less emphasis on rehabilitation but provide a tolerant and homely atmosphere, allowing residents to find a comfortable life-style according to their individual capabilities.

2.10.3. **Group homes and flat shares**

It provides for a wide range of needs with absolutely standard flats or houses, let to two or more people who are able to give each other some mutual support and company. All costs, including the nominal rent are covered by the charge paid by residents, most of who live on supplementary or invalidity benefit.

2.10. 4.**Cluster flats**

The latest experiment is to try to offer several flats on the same estate to people who have been mentally ill. These flats are scattered rather than concentrated, but are within easy reach of each other. Initially support services will be provided in collaboration with the staff of the local social services hostels that will provide some training in domestic skills as well as continuing support for ex-hostel residents. It also opens other avenues for patients to find friendly neighbours who are able to provide low-key support through informal social contact.

While some studies have found that moderate use of alcohol has beneficial health effects, including protection from coronary heart disease, heavy and prolonged intake of alcohol can seriously disturb body chemistry. Heavy drinkers lose their appetite and tend to obtain calories from alcohol rather than from ordinary foods. Alcohol is rich in calories and can provide substantial amounts of energy. However, if it constitutes the primary source of calories in place of food, the body will lack vitamins, minerals, and other essential nutrients

2.7. **Architectural Design Considerations in psychiatry Design**

The character of the immediate surroundings can have a profound effect on the psyche of a psychiatric patient. The New York Psychiatric Institute reports a dramatic drop in the number of patients who need to be restrained since occupying their new facility with its bright open spaces. Every effort should be made to create a therapeutic environment the architectural design of facilities for mentally ill should create an environment appropriate to their special need.the functional requirement may be complex and may not always be compactible with the creation of an informal atmosphere of warmth and

Reference: Dr Wilson frank, American sociological Review, 2001

intimacy that is so desirable in these facilities.However,every effort will be made to eliminate an institutional character in the physical setting. The single-storey building are most preferred as my observation and analysis have shown for ease of access and interior circulation and present more intimate environment .Building will be modest in size and function /will avoid rigid uniformity in planning,and the skilled use of form,materials and colour will contribute to an informal atmosphere.this informality will further be enhance by incorporating,patios,courtyard and landscape areas in relation to the buildings.there will be an attractive outdoor spaces for superviser.Architecturally then building being proposed will recognize community standards,harmony with built – in-environment and comform to applicable regulations and the importance of aesthetic appearance will never be ignored or overemphasized,economy and efficient operation and maintenance of the proposed facility will be an important consideration in the design.

By

- Using familiar and non-institutional materials with cheerful and varied colors and textures, keeping in mind that some colors and patterns are inappropriate and can disorient older impaired patients, or agitate patients and staff.the preferred colours include:white,cream,light brown and shouting colours like red, yellow etc should be avoided..
- Admitting ample natural light wherever possible.
- Providing a window for every patient bed, and views of the outdoors from other spaces wherever possible. Views of nature can be restorative.
- Providing inpatients with direct and easy access to controlled outdoor areas
- Providing adequate separation and sound insulation to prevent confidential but loud conversation from traveling beyond consulting offices and group therapy rooms.
- Giving each patient as much acoustic privacy as possible—from noises of other patients, toilet noises, mechanical noises, etc.
- Giving each patient as much visual privacy, and control over it, as is consistent with the need for supervision.

- Giving each inpatient the ability to control his immediate environment as much as possible, i.e. lighting, radio, TV, etc.
- Providing computer stations for patient use when patient profile and treatment program allow.
- Designing features to assist patient orientation, such as direct and obvious travel paths, key locations for clocks and calendars, avoidance of glare, and avoidance of unusual configurations and excessive corridor lengths.
- Designing a "way-finding" process into every project. A patient's sense of competence is encouraged by making spaces easy to find, identify, and use without asking for help. Color, texture, and pattern, as well as artwork and signage, can all give cues.
- Providing exercise equipment for patient use where appropriate for the program of care (physiotherapy).
- Provide domestic facilities for use by patients

2.11.1. **Aesthetics**

Aesthetics of building should be pleasing. It is also a major factor in a facility's public image and is thus, an important marketing tool for patients and staff. Aesthetic considerations include:

- Use of new lighting systems, high performance glazing, increased use of natural light, natural materials, and colors
- Use of (soothing, not exciting) artwork
- Attention to details, proportions, color, and scale
- Bright and open public and congregate spaces
- Comfortable and intimately scaled nursing units and offices
- Compatibility of exterior design with surroundings

Reference: Robert F Carr: Psychiatry building standards, NY,USA, 2009

2.11.2. **Security and Safety**

The potential suicide of patients is a special concern of psychiatric facilities. The facility must not unwittingly create opportunities for suicide. Design to address this and other safety and security issues includes:

- Plumbing, electrical, and mechanical devices designed to be tamper-proof
- Provide breakaway shower-rods and bars, no clothes hooks
- Elimination of all jumping opportunities
- Entrance and exit should be controlled and secured.
- Provision for patient bedroom doors to be opened by staff in case of emergency
- Laminated glass for windows in inpatient units to prevent accident
- Fiber-reinforced gypsum board for walls
- Special features in seclusion rooms to eliminate all opportunities for self-injury, including outward opening door with no inside hardware
- Careful consideration of appropriate locations for grab bars and handrails. Where they must be used in unsupervised spaces, and patient profile justifies extra care, special designs are available that preclude their use for self-injury.
- Eliminate the use of door knobs and handles
- Solid material specified ceilings

2.11.3. **Cleanliness**

Psychiatric facilities should be easy to clean and maintain. This is facilitated by:

- Appropriate, durable finishes for each functional space
- Proper detailing of such features as doorframes, casework, and finish transitions to avoid dirt-catching and hard-to-clean crevices and joints
- Adequate and appropriately located housekeeping spaces

Reference: Robert F Carr: Psychiatry building standards, NY,USA, 2009

2.11.4. **Efficiency and Cost-Effectiveness**

The design of a successful psychiatric facility should:

- Promote staff efficiency by minimizing distance of necessary travel between frequently used spaces
- Allow easy visual supervision of patients by limited staff. Nurse stations on inpatient units should be designed to provide maximum visibility of patient areas.
- Include all needed spaces, but no redundant ones. This requires careful pre-design programming.
- For inpatient units, provide a central meeting area or living room for staff and patients and provide smaller rooms where patients can visit with their families
- Make efficient use of space by locating support spaces so that they may be shared by adjacent functional areas, and by making prudent use of multi-purpose spaces.

Reference: Robert F Carr: Psychiatry building standards, NY,USA, 2009

References

1. Phelps Michael / Baxton Lewis, 'Hard Drugs' Encarta Encyclopaedia, Redmond, WA, 2.Microsoft Coperation, 2008

3. Robert F Carr: Psychiatry building standards, NY,USA, 2009

4.Wilson frank, American sociological Review, 2001

CHAPTER THREE

RESEARCH METHODOLOGY

3.0. **Research methodology**

Various research methods were employed for the collection of the data to aid in this research. This chapter elaborates on the data or information collection methods, as well as the limitations and constraints faced the research.

This chapter documents cases both local and foreign rehabilitation design facilities which aided the designer in coming up with design for the mentally-challenged patients. Several sources of information were explored and was then intensively taken through analysis and synthesis to result in actual data needed in the design process.

Basically, both primary and secondary sources of information were carried out.

3.1.1 **Primary data**

The collection of primary data involved:

The primary sources of information comprise of photographs, visual observations, and measured drawings, interviewing through interactions and precedent studies or case studies on existing rehabilitation centres.

3.1.2. **Interviews**

An interview was carried out by the use of an interview guide. It involved the interview of psychiatric doctors, psychologists, psychiatric nurses and mentally ill patients.

3.1.3. **Photographic recordings**

This includes photographic documentation of the site and its surroundings. In addition photographic recording were also captured on case studies and precedent studies in and outside the country based on its relevant to the proposed facility.

3.1.4. **Visual Observations**

Visual observations were basically the personal observations I made during my visits to the court facilities in the course of the study. My initial observations started with a reconnaissance survey before doing a critical observation in and around the facilities. Exterior observations included a study of all the accesses and exits to the site, parking and the circulation patterns of the users of the facility from where they park to where they enter the facility.

Interior observations included the circulation zones and how they are interlinked to ensure that the users are safe and secure.

3.1.5. **Measured drawings**

A measured drawing was done on the Tamale High Court building because the original drawings were unavailable. This was also done to have a rough idea of the spatial

requirements for such facilities. The drawings for the other facilities were obtained to aid in the study.

3.1.6. **Secondary sources**

The secondary sources of information include information from the library, journals and also from internet searches.

3.1.7. **Library**

A lot of information for the research was obtained from the library. The pieces of information were obtained from both published and unpublished articles on the topic under research. Though most of the information was not directly related to the topic under research, useful information was extracted. For example, most of the documents were about how many countries and states in the United States of America were treating their rehabilitation and how they employed standards to guide the construction of new rehabilitation centre. These standards are to be adhered to by any architect who will be contracted to design any new rehabilitation centre. These standards were studied to inform this study.

3.1.8. **Journals**

Journals in the form of periodic publications by the Ghana Health Service were also utilized. They aided in getting information on the prerequisite of rehabilitation centers in Ghana, information on the number of cases of mentally ill patient in the three psychiatric hospitals in the country . The information gotten formed the premise of most of conclusions drawn during the research.

3.1.9. Internet

The internet was used on many occasions to get lots of information especially with those information which were not available locally. For instance, it assisted in my study of the Brain and spinal cord centre in Basel (Switzerland) and also threw much light on design standards and security details of most of the rehabilitation centre around the world.

3.1.10. LIMITATIONS

This research work was not devoid of limitations. Some information about Ghanaian rehabilitation centre and their standards were not readily available such that information on other rehabilitation centre in other parts of the world had to be depended on and well analyzed in other to extract the salient parts to aid the research work. This proved to be a flaw in the build up to this research work.

3.1. **CASE STUDY ONE**: Kumasi Cheshire home

3.2. LOCATION: Kwadaso-Edwinase, Kumasi-Ashanti Region

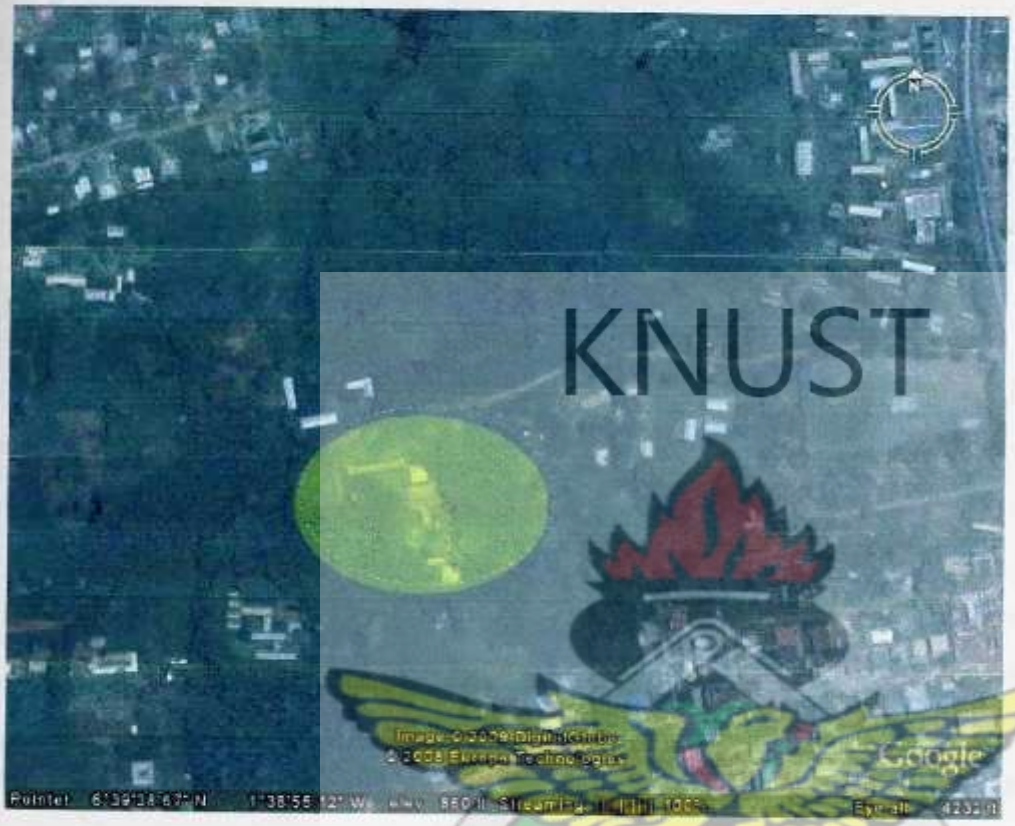


Fig.2. Arial view of Kumasi Cheshire home, Kwadaso-Edwinase

Source: Google earth

3.3. **BACKGROUND STUDIES:**

Kumasi Cheshire home is under a form of rehabilitation which is a community based where, mentally ill patient are helped to reconcile them back to their normal state. The technical name for such facility is a "half way home" which combines medical, social and other related therapies to help manage people who are mentally-ill. The half way home (Kumasi Cheshire home) was established in 1986 by a Philanthropist and is located in kwadaso-Edwinase, Kumasi. The preferred location is to serve both relapsed and other mentally-ill patient at the middle and northern portion of the country. Basically, psychiatry facilities in the country are located in the southern sector of the country and have resulted in people not having access to these facilities.kumasi

Cheshire home is manned by administrator and assisted by a head nurse, with about twelve public nurses who take care of day to day activities. Officially the facility is planned to accommodate fifty five inmates, but it currently harbours forty four due to poor maintenance and lack of psychiatric professionals.

3.4 **FORM AND STRUCTURE:** It is a combination of L shape and U shape compact facility .Walls are non load bearing sandcrete blocks rendered with cream emulsion paint. Floors are finished with rough screed to minimize accidents.

3.5 **MAIN FEATURES:** The functional spaces can be classified into offices for administration, dining hall, classroom/workshop, orthopedic, and other ancillary facilities which include: staff and public parking, courtyard garden etc.

3.6 **SPATIAL CONFIGURATION:** The layout of the design is in three segments. A wing has the dining hall and kitchen. The junction of the L shape unit is the administrator's office, secretary and accounts office. The centre of the layout contains a small therapeutic garden. The other two wings contain the wards for both males.
The females are in a separate unit behind the main structure and close to the main structure for patient with schizophrenia (acute cases).In between the two structures is the facility for occupational therapy.

3.7 **LIGHTING AND VENTILATION:** Lighting levels are relatively good in the both male and female wards. Both wards have high window bay which is (1500x800mm).
The high level windows promote good ventilation and eradicate pungent smell from inmates and medicine administered to them.

3.8 REASON FOR STUDY:

- The courtyard system utilization aids good ventilation and admission of natural lighting
- Introduction of horticultural therapy through gardening at the courtyard help in healing
- The building typology helps breakaway from the stereotype clinic design hence; the facility is rendered homely and less stigmatized.

3.9 MERITS

- The layout of the facility eradicates the prison mentality accompanying institutional rehabilitation and Psychiatric facilities
- Good ventilation and natural lighting

3.10 DEMERITS

- The facility lacks basic elements which aid healing e.g. recreational, administrative and other health facilities etc.
- The facility lacks standard security details to aid patient and medical staff, hence, users of the facility is liable to suicide and accident.

Fig.3.Male ward (Kumasi Cheshire homes)

Photograph by: Author

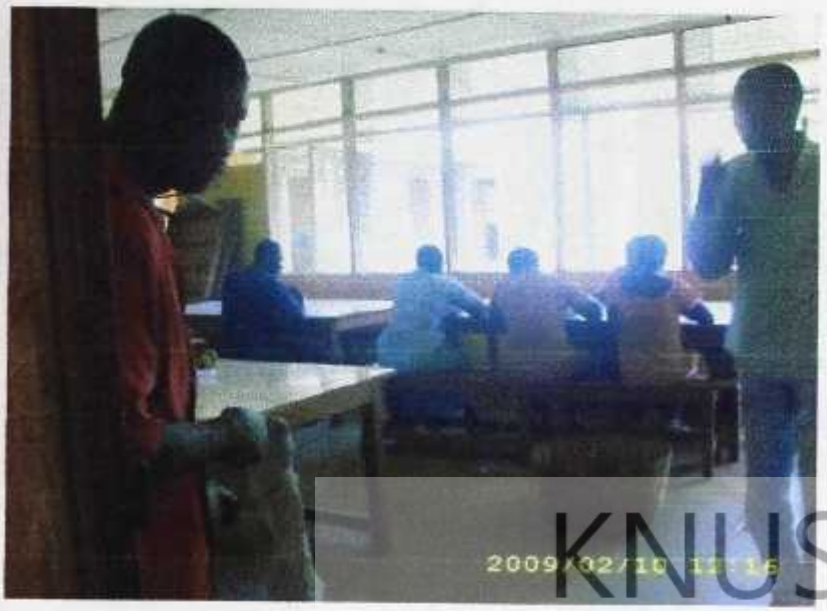


Fig.4. eating area (Kumasi Cheshire homes)

Photograph by: Author

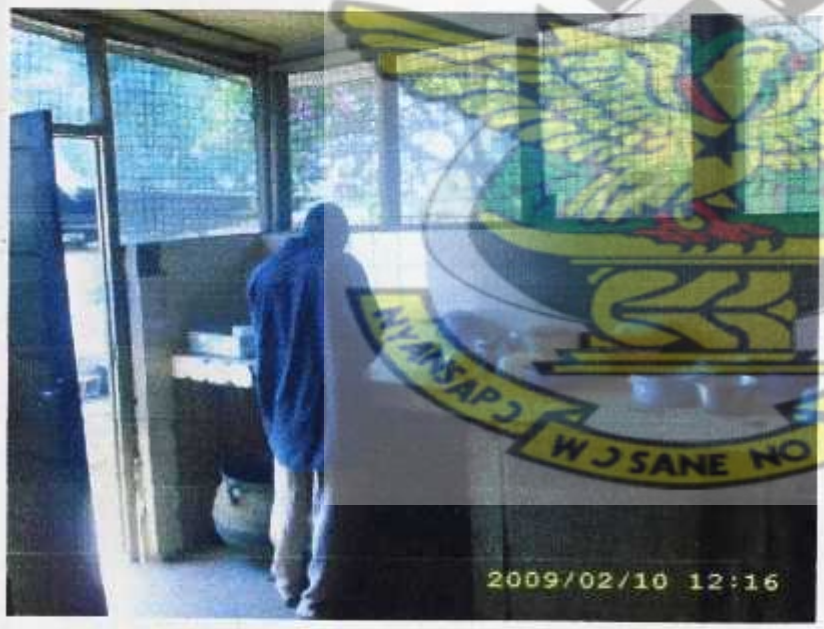


Fig.5.Kitchen (Kumasi Cheshire homes)

Photograph by: Author

Fig.6.occupation therapy (Kumasi Cheshire homes)

Photograph by : Author

Fig.3.7.Courtyard

(Kumasi Cheshire homes)

Photograph by : Author

3.11 **CASE STUDY 2:** Psychiatry and Physiotherapy Department of Okomfo Anokye

3.12 **LOCATION**:kumasi,Ashanti region

3.13 **REASON FOR STUDY**

- Their facilities are well equipped which aid mental healing
- The presence of the therapeutic pool and other waves massaging machine help calm nerves eradicate mental diseases like depression, anxiety and others
- The gymnasium is key facilities which help eradicate boredom associated with mental facilities and also enhances their physical well being.
- Patients with dual diagnosis i.e. mentally ill and having physic problem have the advantage of its usage

Fig.8. Entrance of physiotherapy Dept,
(Okomfo Anokye Hospital, Kumasi)
Photograph by : Author

Fig..9 Therapeutic pool

(Okomfo Anokye Hospital, Kumasi)

Photograph by : Author

Fig.10. electromagnetic machine

(Okomfo Anokye Hospital, Kumasi)

Photograph by : Author

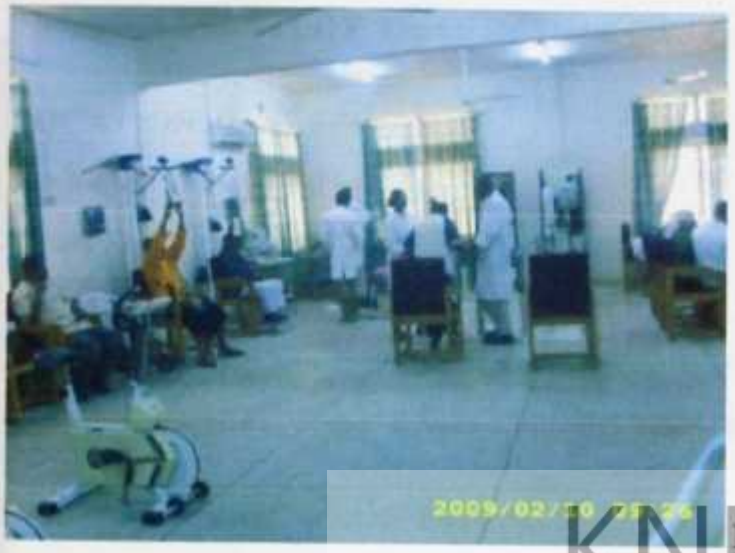


Fig.11. Main therapeutic gym
(Okomfo Anokye Hospital, Kumasi)
Photograph by : Author

Fig.12. w/c for disabled
(Okomfo Anokye Hospital, Kumasi)
Photograph by : Author

3.14. **SPECIAL STUDY**: Centre for Spinal Cord & Brain Injuries

LOCATION: Basel, Switzerland

Architect: Herzog and Meuron

Gross Square footage: 246,386sqft

Capacity: 92 beds in double and single rooms

This architecture has the significant meaning that is to revive and reconstruct. The overall architectural design is very static and has delicate details.

Fig.13.Site location highlighted

Source: Herzog and Meuron

Fig.14.Therapeutic garden

Source: Herzog and Meuron

Fig.15.wooden strips facade

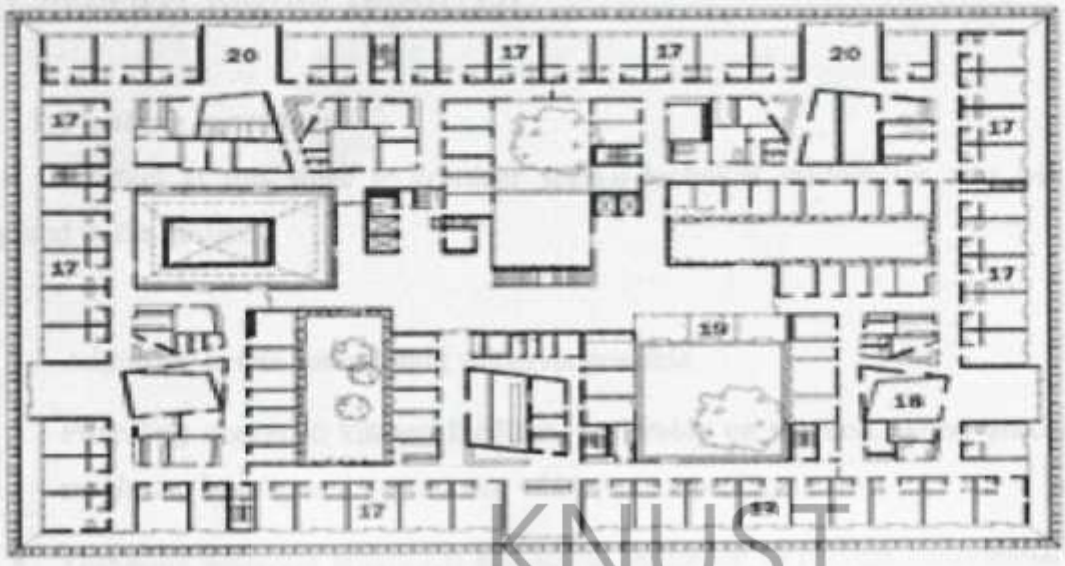
Source: Herzog and Meuron

Fig.16.courtyard view

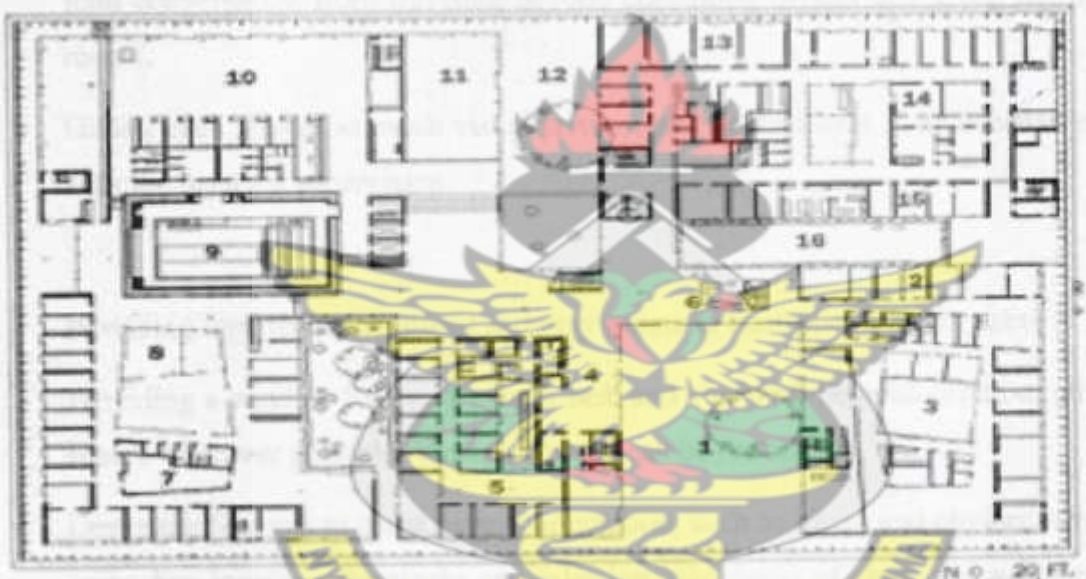
Source: Herzog and Meuron

Fig.3.16 .Front view

Source: Herzog and Meuron



SECOND FLOOR



FIRST FLOOR

1. *Entrance court*
2. *Outpatient rooms*
3. *Day hospital*
4. *Cafeteria*
5. *Administrative offices*
6. *Reception*
7. *Neuropsychology*
8. *Occupational and speech therapy*
9. *Therapy pool*
10. *Physiotherapy*
11. *Multipurpose space*
12. *French garden*
13. *Intensive care*
14. *Medical services*
15. *Diagnostics*
16. *Courtyard with pool*
17. *Patients' bedrooms*
18. *Services*
19. *Offices*
20. *Lounge/dining*

Fig.17. Ground plan

Source: Herzog and Meuron

3.15. GENERAL DESIGN APPROACH

3.15.1. Planning procedure

It is important at this stage to consider special technical information that will be required in the design.

- Admitting ample natural light wherever possible.
- Providing access to kitchen facilities, preferably on the unit, where snacks or meals can be prepared by patients, when patient profile allows.
- Providing adequate separation and sound insulation to prevent confidential but loud conversation from traveling beyond consulting offices and group therapy rooms.
- Giving each patient as much visual privacy, and control over it, as is consistent with the need for supervision.
- Providing inpatients with direct and easy access to controlled outdoor areas
- Providing a window for every patient bed, and views of the outdoors from other spaces wherever possible. Views of nature can be restorative.
- Designing features to assist patient orientation, such as direct and obvious travel paths, key locations for clocks and calendars, avoidance of glare, and avoidance of unusual configurations and excessive corridor lengths.
- Giving each inpatient the ability to control his immediate environment as much as possible, i.e. lighting, radio, TV, etc

For office design the primary consideration includes circulation constructional grid these can be taken by the dimensions of partition walls, ceiling structure and window modules. Single occupancy depth should not be less than or equal to 6m and an effective module should consider work station for easy circulation within the space.

A critical interior design criterion would be the "open plan" concept to make provision for future expansion of the facility and flexibility in internal furniture arrangement. An

-insight into functional spaces would be an aid to the basic relationships needs to be establishing by the virtual or horizontal approach adopted for the design

Reference:

1. http//:www.anupark@tiscali.it

2. Robert F Carr: Psychiatry building standards, NY, USA, 2009

3. Wilson frank, American sociological Review, 2001

CHAPTER FOUR

4.0. GEOGRAPHICAL LOCATION

4.1 Factors Considered in Site selection

There are so many factors to consider when choosing a site for construction of facilities for mentally challenged people. The most pressing factors to be considered when choosing a site purposely for providing therapeutic environment for the mentally challenged are:

a) Secluded location from the boisterous environment

b) Serene environment with enough arboretums

c) Availability of basic service amenities

d) Sizeable land ton accommodate the facility and it's other infrastructure

e) Accessibility of site to the outline region of western and Brong Ahafo regions

4.1. SITE ANALYSIS

District Map of Ashanti Region

Fig.18. Geographical location

Source: Survey Department (Kumasi)

Fig.19. (physical map)

Source: surveyors Department (Kumasi)

Merits

a) The topography of site is gentle (gradient: 0.05)

b) The site is easily accessible

c) Serene environment with enough arboretums

Demerits

- The availability of services(amenities) such as :electricity, telephone lines, portable water is currently not available
- The site currently encroached by squatters

CONCLUSION

Considering ease in accessibility, enough arboretum and serenity of site, Nyinahin site would be more appropriate to used for the proposed alcohol and drug rehabilitation centre.

The site slopes gently towards east at a gradient of 0.05 whiles it is fairly flat to the north.

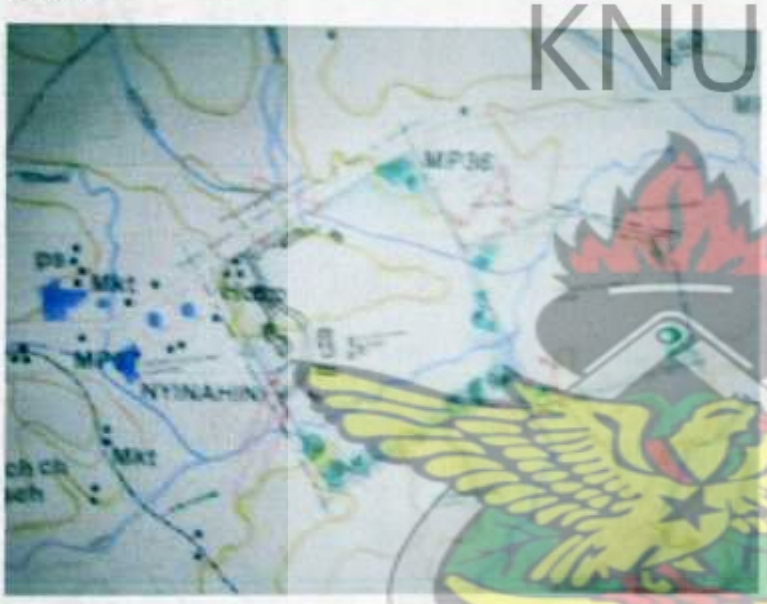


Fig.20 Site Analysis

Source: survey Department

The whole site covers an area of about 19419.9 metres square. The site presently has the high court building and a legal aid building.

4.2. SITE CONDITION AND INVENTORY

4.2.1 Architectural style of peripheral buildings

Most of the peripheral buildings have a rural form of architecture and construction. The building forms reflect the needs of the area. There are large overhangs for most of the facilities to aid in shading and ventilation. Most of the buildings have a single zone layout with the facilities located in the centre and verandas on both sides of the facilities. Parapets have also been used to aid in rain water collection since Nyinahin records high amounts of rainfall

Fig.21.District market

Source: Author

Fig.22. site entrance

Source: Author

Fig.23. Access road to site

Source: Author

Fig.24.Existing district hospital

Source: Author

Fig.25. Bibiani-Kumasi road

Source: Author

4.4. RELIEF AND DRAINAGE

The District topography generally has undulating topography dissected by plains and slopes with average height of 76 meters above sea level. The high grounds are the portion of the Atiwa- Atakpame mountain range that lay to northwest of the District. The district is drained by the Offin and Tano Rivers. These rivers flow continually throughout the year and can therefore be used for both domestic and agriculture purposes.

4.5. CLIMATE

Like most areas that lie in the wet semi-equatorial forest zone in Ghana, the District is marked by double maxima rainfall seasons. The major rainfall period begins from March to July peaking in May. The average annual rainfall for the major season is about 170 centimeters – 185 centimeters per year. The minor rainfall period, begins in August tapering off in November with an average minor annual rainfall of 100centimeters- 125 centimeters per year. December to February is drying hot and dusty. Mean annual temperatures of 27°C in August and 31* in March are recorded in the district. The climate in the District is ideal for the cultivation of cash and food crops as cocoa, cola, oil palm, maize, cocoyam, plantain, cassava, rice and all kind of vegetables.

Development implications:

Even though the rainfall is adequate for agriculture, its erratic and unpredictable nature and concentration have adverse implications for rain fed agriculture.

. References

1. Atlas, geography of Ghana, Mac millan (2000)

2. Wikipedia Encyclopedia

CHAPTER FIVE

5.1 BRIEF DEVELOPMENT:

Client's design Brief:

It was the client's intention to develop the area into a modern Regional Drug and Alcohol rehabilitation centre with facilities such as:

- Homey wards
- Outpatient department(OPD)
- Physiotherapy department
- Library
- Occupational therapy facility
- Staff lounge
- Therapeutic Garden and Spa
- Administration block

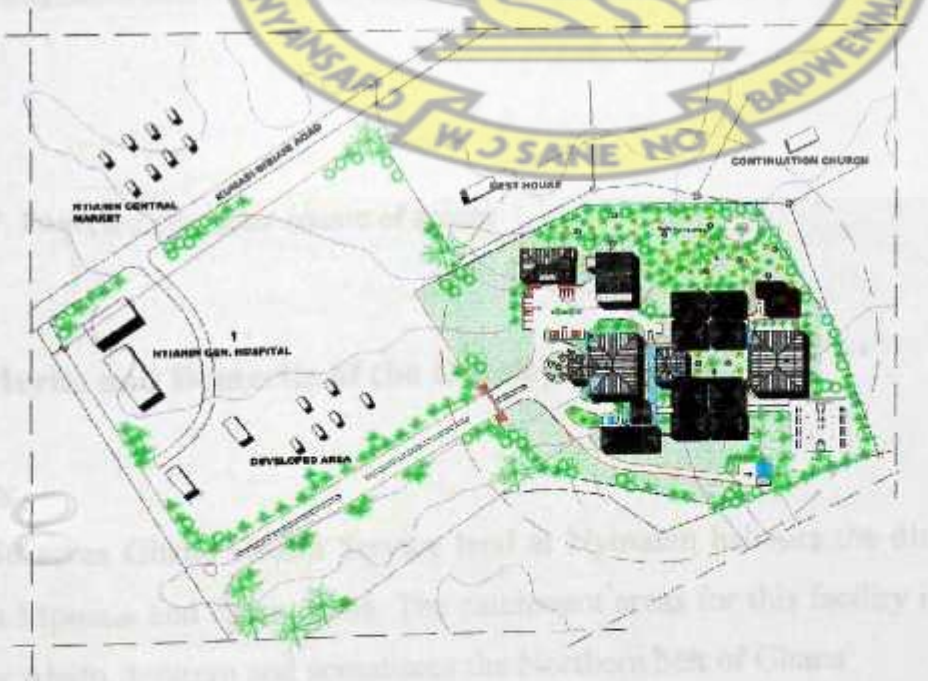


Fig.26. Block plan of the Developer's Proposal

From the block plan above, the table below was generated

Fig.27. Projected per meter square of spaces

5.2 Merits and Demerits of the Developer's Brief

Merits

The 50 acres Ghana Health Service land at Nyinahin habours the district Hospital for Atiwa Mponua and its environs. The catchment areas for this facility include: Towns in Brong Ahafo, western and sometimes the Northern belt of Ghana.

Hence, the 500 capacity Drug and Alcohol rehabilitation centre will be centrally located in its geographical location for easy access for the districts and Regions mentioned above. The developers' reason being the deviation from the marginalization of major

psychiatry services along the southern belt of Ghana. The proposed location with its facility will mob up ex-psychiatry patients in and around the Region (Ashanti Region) and will take care of referrals cases from the existing District Hospital.

Demerits

Based on the UN interpolated value of 7.2 million psychiatry cases in Ghana in which Ashanti region alone scores 23 percent of the value and the yearly increase of 5131 psychiatric cases from the three major Psychiatry Hospital in Ghana,the 500 capacity Drug Rehabilitation centre is a little below adequate

The research report outlines the following observation

Since the enactment of the Lunatic Asylum ordinance in the year 1888 ;which is the first of its kind in the country, major Psychiatric Hospital have been over stretched beyond its capacity or highly underutilized .this scenario highlight Accra Psychiatric Hospital with official capacity of 800 but currently houses over 1200
And the contradictory scenario of Ankaful which 500 capacity but houses only 150

This pattern suggests a number of mysteries:

(1) Stigma attached to mentally- ill people
(2) Facilities which houses them are more of a "prison "than a Hospital and hence, stigmatized
(3) Psychiatric facilities are not decentralized across the country
(4) Lack of supporting psychiatric facilities such as Rehabilitation centers and half – homes across the country which result in relapsing of psychiatric patient.

5.3. Brief Development

The finished project will create a conducive therapeutic environment which have much community involvement in the healing and management of mentally ill patients,

The developed brief was based on the following:

- **Site of location:**

  The location is at 60km north-west of Kumasi in the Ashanti Region

- **Activities around the site:**

  Based on the peripheral study, facilities such as: the main District Hospital bounded at the western portion of the site, the District market at the north and residential facility at the far west .

- **Global and environment consideration:**

  The design and specifically the location approximately falls within the UN standard of 16km radius in relations to its towns and villages .The immediate environment with enough greenery and good views are conducive for healing.

5.4. Design Brief

(I)Speech and library therapy

(ii)Technical areas

(iii)Doctor's lounge

(vi)Outpatient department (OPD)

(v)Physiotherapy

(vi)Ward

(VI). Ancillary

- Administration
- Canteen

5.5. Accommodation schedule

NB: All dimensions are in meters

Administration

SPACE	UNITS	QUANTITY	TOTAL
Conference room	11.4x5.8	1	66.1
Boardroom	5.9x5.8	1	34.2
Office for accountant	6.2x5.7	1	35.3
Staff common room	6.2x5.7	1	35.3
Human resource office	6.2x5.7	1	35.3

Wards

Space	Unit	Quantity	Total
Waiting room	10.4.2x	4	43
Nurses station	4.3x2.5	4	10.8
Intensive care units	9.8x5.7	4	55.9
Sleeping rooms	6.9x5.3	16	14.3
Sanitary	2.6x2.5	16	6.5

Entertainment halls	8.1x5.8	2	47
Kitchenettes	5.9x2.6	2	15.3
Eating areas	5.8x5.3	2	30.7

Occupational therapy department

Workshop	15.3x10.2	1	156.1
Changing rooms	4.5x4.3	2	12.9
Store	5.6x3.0	1	16.8

Physiotherapy department

Main hall	11.2x8.2	1	91.8
Changing rooms	4.7x4.4	2	20.7

Outpatient department (OPD)

Consulting room(medical)	5.5x5.3	3	29.2
Dispensary	5.5x5.3	1	29.2
Physiotherapist office	5.5x5.3	1	29.2
Head of nurse office	5.5x5.3	1	29.2
Psychologist office	5.5x5.3	1	29.2

Staffs lounge

Resting area	8.9x5.4	1	48
Eating area	10.9x8.7	1	94.8
Kitchen	6.6x5.4	5.4	35.6
Changing room	4.3x2.5	1	10.8
Ambulance bay	5.8x3.8	1	22
Drivers resting room	5.8x4	1	23
Lecture hall	10.7x8.7	1	93

Fig.28. Accommodation schedule

Source: Author

5.6. Design philosophy

The guiding philosophy of this design thesis is: design concept which tends to break away from the stereotype clinical designs and "prison" design ideology attached to psychiatric design. This philosophy emerge from the preamble in the introduction page which states that: *People with mental and other neurologic illnesses can be cured and rehabilitated back to his or her normal state, when given the right therapeutic Architectural space.*

The therapeutic Architectural space here refers to inclusive environment which is designed to provide confidentiality, freedom and comfortability for its occupants.

Basically, therapeutic Architectural space is human centered environment which provides assistance and therapeutic ambience for its inhabitants and hence aid healing.

5.6.1. Attributes of a therapeutic Architectural space

a) It should be human centered

b) Highly confidential and comfortable

c) It should harness natural elements (natural ventilation, lighting and sometimes go green in its energy usage)

b) It should be easily accessible but highly secured.

5.6.2. **General design concepts**

The concepts that are going to aid me achieve the above philosophy are:

a) Safety: the safety of user in a facility is a prerequisite in every design.

- To achieve safety guardrails and handrails would be provided.
- There would be no obstruction in circulation areas.
- Reinforced-fibre glass should be used for much day light in the window.
- Bath and other sanitary fixtures should be tightly fixed to prevent removal
- Bright colours should be prevented as much as possible.

b) Pedestrianization: pedestrian would be given ultimate priority in terms of circulation in the environment. Vehicular and pedestrian conflicts would be reduced to the barest minimum .The layout of the spaces should be as simple as possible to prevent confusion

c) Accessibility for all: All steps would be taken to make sure that all users have easy access to the facility. In view of this; ramps and stairs are provided in almost all the facilities.

5.7. **Conceptual Site Design and Planning**

The ultimate aim of the planning was to ensure an excellent system that would function effectively and efficiently. Care was taken to arrange the various blocks to suit the site terrain and vehicular-pedestrian conflict has been addressed to a significant level. The final decision was to develop a concept that would take into consideration other detailed factors and elements and creates enough therapeutic garden around the facility.

OPTION ONE

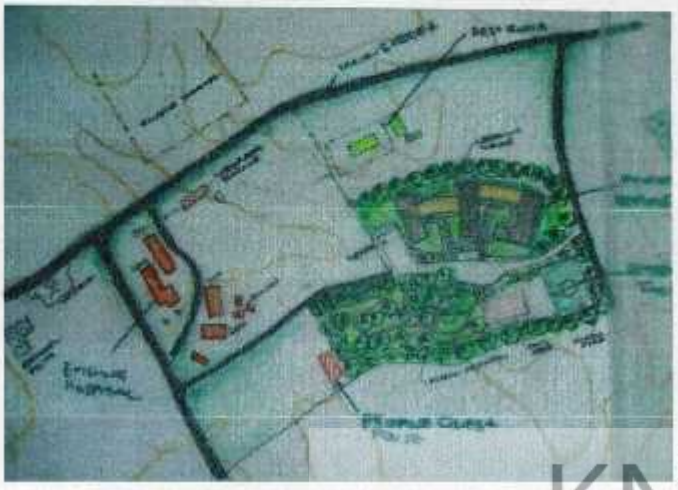


Fig. 29. Conceptual site planning
Source: Author

OPTION TWO

Fig. 30. Conceptual site planning

Concepts for the design

These are the various architectural elements which aided to the fulfillment of the design philosophy:

Design concept which tends to break away from the stereotype clinical designs and "prison" design ideology attached to psychiatric design i.e. the design looks more homely than stereotype hospital and clinic design.

Conscious use of courtyards to admit much ventilation and natural lighting and hence rendering the facility much homey.

Architecture and nature (greenery) was utilized since greenery (nature) has psycho therapeutic effect on healing and management of mentally challenged patient

OPTION ONE

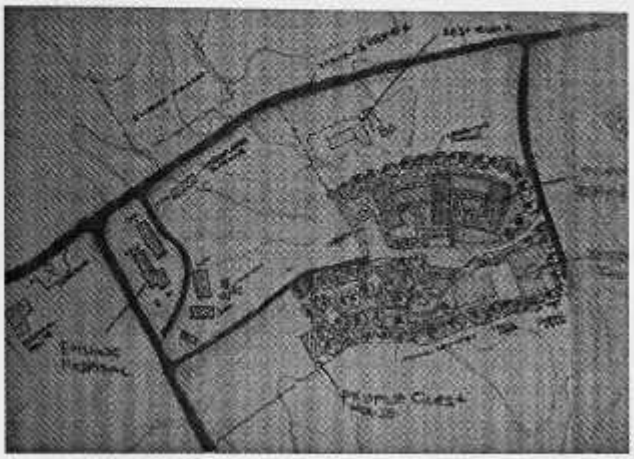


Fig. 29. Conceptual site planning

Source: Author

OPTION TWO

Fig. 30. Conceptual site planning

Concepts for the design

These are the various architectural elements which aided to the fulfillment of the design philosophy:

Design concept which tends to break away from the stereotype clinical designs and "prison" design ideology attached to psychiatric design i.e. the design looks more homely than stereotype hospital and clinic design.

Conscious use of courtyards to admit much ventilation and natural lighting and hence rendering the facility much homey.

Architecture and nature (greenery) was utilized since greenery (nature) has psycho therapeutic effect on healing and management of mentally challenged patient

Conclusion

Option 2 was finally settled on as the final site planning. This was based on the following reasons:

- Vehicular – pedestrian conflict is reduced to the minimal
- The main facility has north-south orientation to cut away sun ingress
- Enough spaces were for therapeutic garden and other ancillary facilities

Fig.31. Site plan

Source: Author

Fig. 32. Elevations

Source: Author

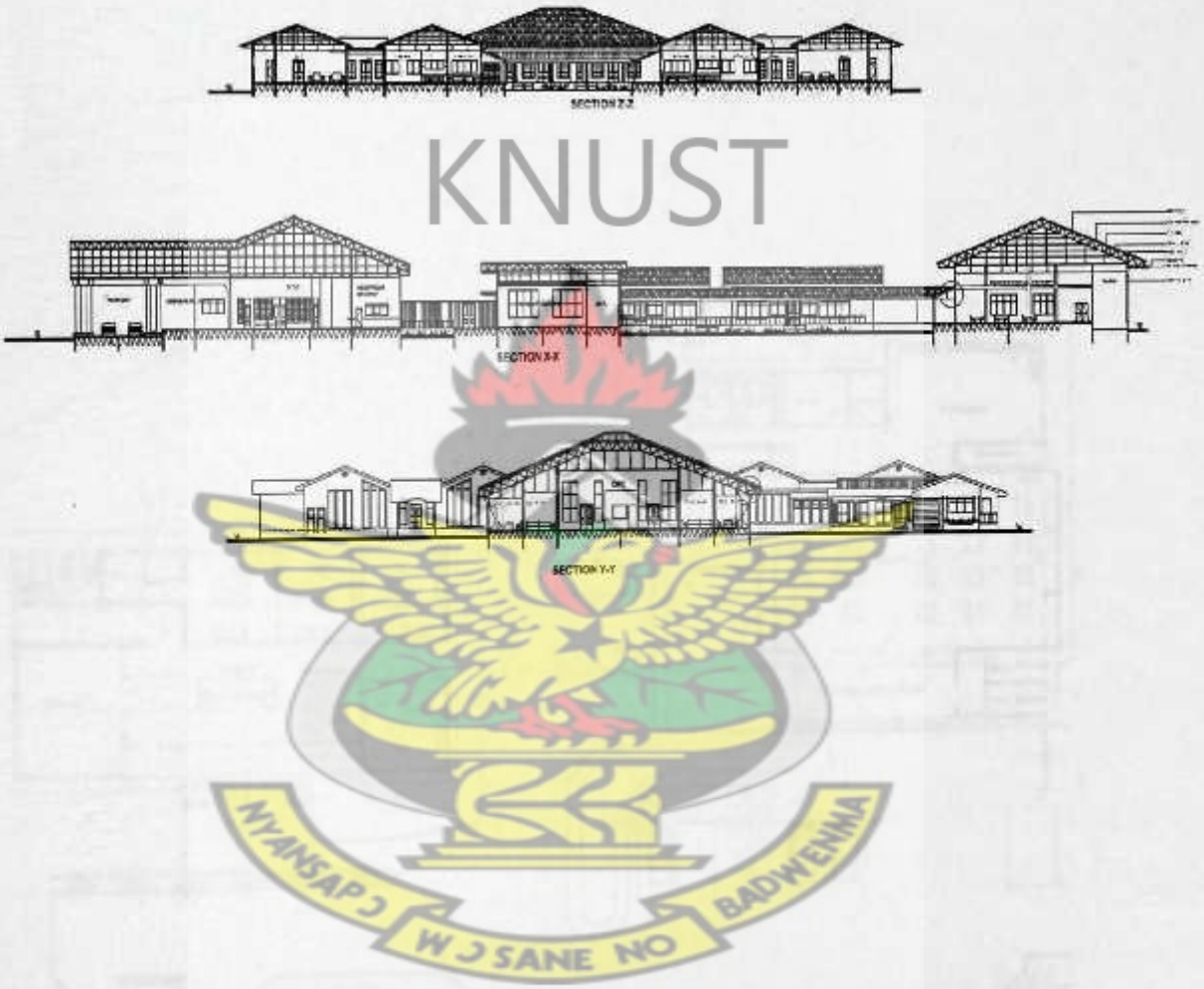


Fig. 33.Section

Source: Author

Administration

The administration is the first point of call so it was located immediately after the main entrance to the facility. The longest side of the administration faces north-south orientation. The entrance foyer has majestic columns which makes it stand out among other facilities provided

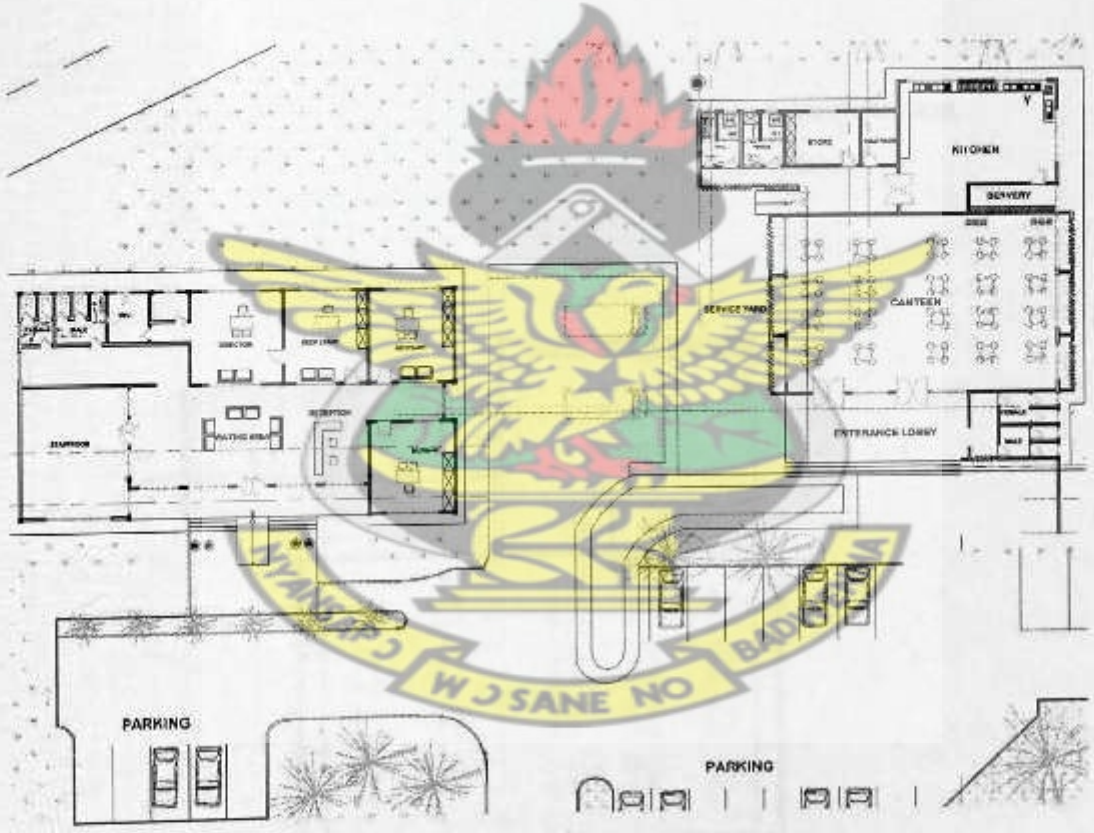


Fig.34. Administration and canteen

Source: Author

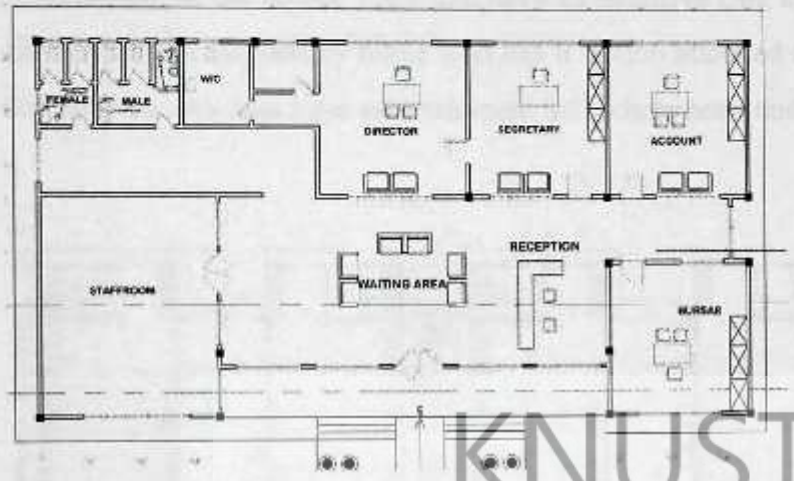
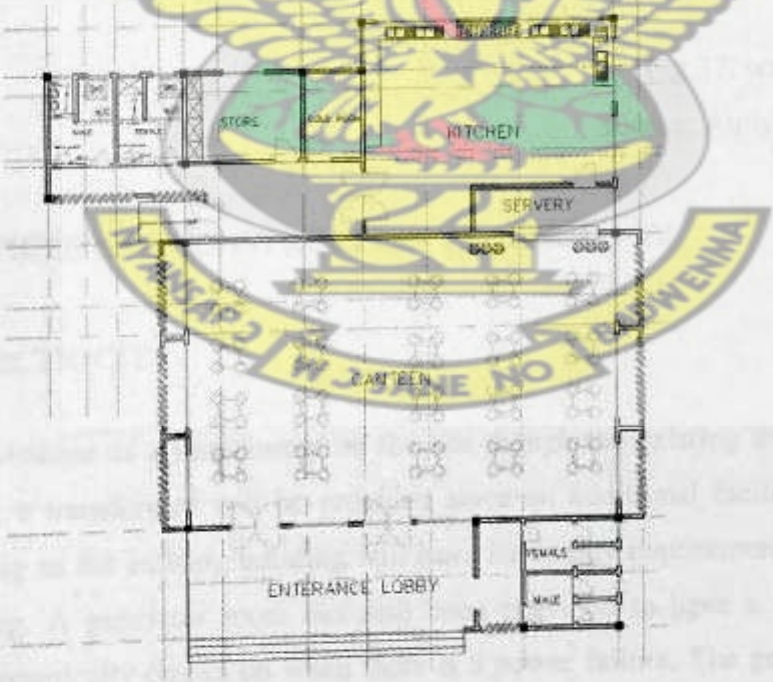


Fig.35. Administration

Source: Author



PLAN

Fig.36

Source: Author

Wards

The wards for the inpatients accommodate both males and females left and right respectively on the layout. Each unit have an intensive care units to cater for the specific illness and it's manned by nurse who has it station attached to it. Apart from the spaces for sleeping, the flats have entertainment hall, kitchenette and a eating area

Fig.37. wards for patients

Source: Author

5.8. SERVICES AND CONSTRUCTION TECHNOLOGY

5.8.1. ELECTRICITY

With the absence of a transformer on the site though the existing district hospital has electricity, a transformer will be provided since an additional facility which is three times as big as the existing building will have its energy requirement being more than the existing. A generator room has also been provided to have a standby generator which automatically comes on when there is a power failure. The generator room will have the switch boards from where connections will be made to the main facility. There will be three phases in all to be distributed to the entire building.

5.8.2. LIGHTING AND VENTILATION

- **Ventilation**

As a measure of prudence in a developing country, the rehabilitation centre been primarily designed around architectural principles which will enable a full operation on natural ventilation. The orientation of the facility allows the building to capture the south-western and north-eastern winds. Operable windows have been provided to allow for natural ventilation.

Since natural ventilation alone cannot provide the entire thermal comfort needed, they are supplemented by artificial ventilation systems like air conditioners and extractor fans for the sanitary areas

- **Lighting**

Natural lighting will be the main form of lighting in the facility during the day. This has been achieved through the use of openings so as to cut down on artificial lighting. Emergency lights within the facility will be provided by separate battery operated system and positioned at specific locations in accordance with fire regulations. This is to help people evacuate people if there is any fire emergency and all the lights go off. External lights will also be provided to light the place at night. They will mainly be located at the entrances to the site, along the pavements and driveways and at the car parks

.

5.8.3 SECURITY

Security in the rehabilitation center is very essential. Close-circuit television cameras will be provided in all rooms and circulation areas to monitor activities in those spaces. They are going to be monitored from the computer room and records kept there. All the Security check points have also been provided at the entrances and exits to also control the caliber of people coming to the facility.Doors and windows should be highly detailed to conserve peace.

5.8.4. **FIRE**

- **Protection and Prevention**

Fire controls systems such as smoke detectors and fire alarms systems are controlled from the service room located at the ground floor. The electrical system where the building has been sectioned into independent load centres act as fire protection. Here, electrically induced fire outbreak can be prevented from one area to other. Sprinkler heads and Hose reels supplied by mains are placed at strategic location within the facility as a fire fighting measure.

Automatic fire alarm systems are installed. These operate on the principle of heat sensing and smoke detection. It consists of fire alarm initiators, indication panels and bells. Smoke detectors are located at vantage point. Fire extinguishers also located at strategic intervals within the facility is an additional source of fire control. Fire hydrants are located strategically on site to aid fire fighters when the need arises.

- **Fire and smoke detection**

Automatic sprinkler and standpipe water flow indicators will be provided in the facility. Area smoke detectors will be provided in all electrical and telecommunication equipment rooms and elevator machine rooms. Duct smoke detectors will be provided in recirculation air systems as required by code. Smoke detectors will be provided in all elevator lobbies. Activation of this detector will initiate automatic elevator recall to the designated floor.

5.8.5 **INFORMATION SYSTEMS**

Information systems are very important and vital in health facility. Public Address systems will be provided in the OPD.

5.8.6 **WATER SUPPLY**

The main source of water supply will be from Ghana Water Company. The water from the GWC will go to the service room from where it will be pumped to storage tanks on the roofs. The water from there will be allowed to flow under gravity to the various spaces where they are needed.

5.8.7 DRAINAGE

Covered surface drains have been provided to help drain rainwater to the main drains bounding the site. Since the site slopes by a gradient of .05, all the drains will be directed in the direction of the slope so as to allow water to move off the site easily.

5.8.8 TELECOMMUNICATION

Information relay is also vital in courthouses. All the computers in facility will be networked. This will enable people to get access to information easily. Proper networking will aid in the automated case tracking process since the public will be able to check the status of their cases from computers at the reception area. Telephone outlets will also be provided in each space.

5.18.9 SEWERAGE

Soil wastes from all the sanitary areas will be discharged by underground pipe work into a septic tank and filtration bed which has been located at the lowest point on the site.

5.9. Conclusion

Having researched thoroughly into the mentally challenged people and how their immediate environment affects their healing, it can be deducted that mental illness and its associated social and economic issues attracts limited or low attention in Ghana.

The design thesis tends to focus attention on this important issue through the shift from institutionalization to outpatient psychiatry (modern trend). Also, the thesis tends to introduce modern facilities and therapies with its respective facilities.

This intervention will go a long way to alleviate and reduce mental illness and its associated social stigma.

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APPENDIX

QUESTIONNAIRE

PROPOSED DRUG AND ALCOHOL REHABILITATION CENTRE IN KUMASI

1. What is alcohol and drug rehabilitation centre?

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.....

2. What are the objectives and philosophies behind Kumasi Cheshire home.....
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.....

3. Stipulate the various therapies used for healing in Kumasi Cheshire home.

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4. What effective therapy are absent in the rehabilitation centre, why absent?

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5. What are the stages of healing mentally-ill patient?

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6. What is the duration for healing for both in and outpatient mentally challenged patient.....
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7. What is the current carrying capacity of the rehabilitation centre, against the official carrying capacity?

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.....

8. What is the official patient-medical staff ratio?

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9. What is the current medical staff to patient ratio?

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10. Is the facility utilized or underutilized, why is that?

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11. What is the accommdational system employed in Kumasi Cheshire home facility.

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12. What security details are employed in the Kumasi Cheshire home?

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13. How are patients monitored to check their recuraperation process?

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14. Has there been the incidence of suicide, what are the cause and statistic of incidence?.....

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15. Do Kumasi Cheshire home have patients suffering from schizophrenia?

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16. Do the rehabilitation have special treatment facility for patients with schizophrenia?

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17. What are the architectural considerations that enhance healing of mentally-ill patient i.e. according to special pattern, colour of building etc?.....

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18. Is the location of rehabilitation favorable for healing and how is it able to cope with stigma from the general public?.....

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.....

19. Are staff accommodated and well equipped with laboratory and other research facilities?

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.....

.....20. How is the rehabilitation centre financed?

SECTIONS