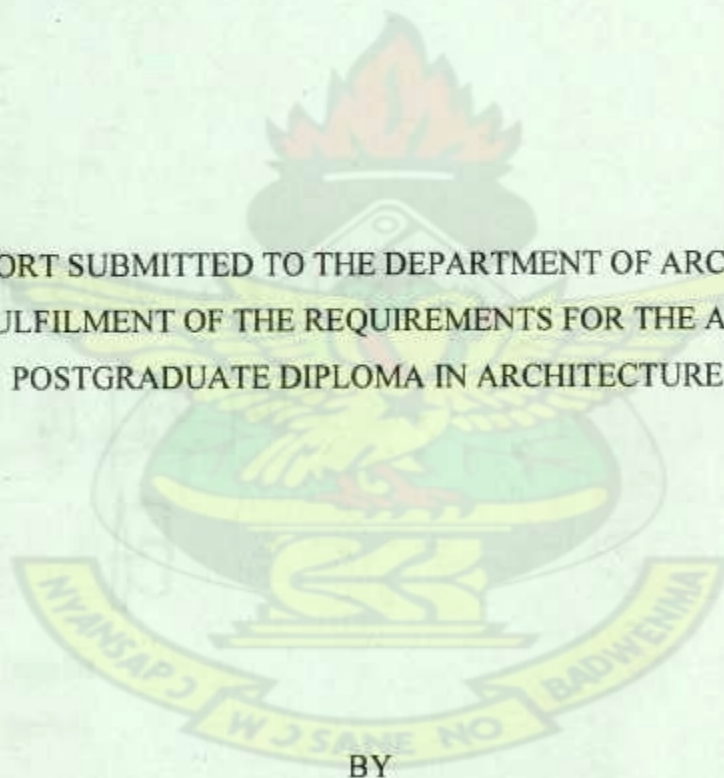


KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI  
COLLEGE OF ARCHITECTURE AND PLANNING  
DEPARTMENT OF ARCHITECTURE

**CAMP CORRECTIONAL INSTITUTION-  
TITRINU, VOLTA REGION**

A THESIS REPORT SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE IN  
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A  
POSTGRADUATE DIPLOMA IN ARCHITECTURE



BY

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MAY, 2009

## DECLARATION

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I hereby declare that I have personally, under supervision, undertaken the thesis herein submitted.

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16-10-2009

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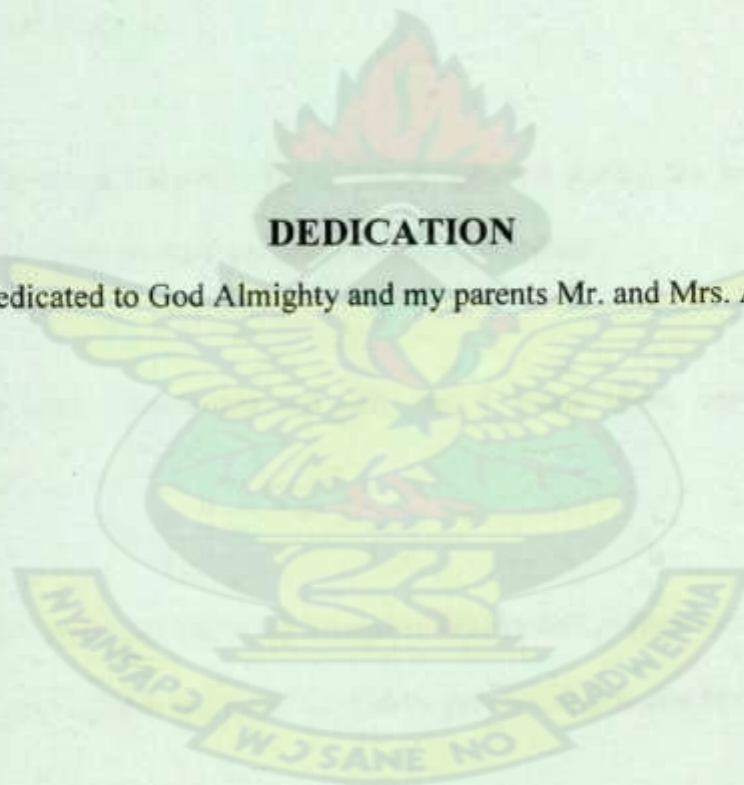
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## ACKNOWLEDGEMENTS

# KNUST

## DEDICATION

This thesis is dedicated to God Almighty and my parents Mr. and Mrs. Akumia





## ACKNOWLEDGEMENTS

My greatest appreciation goes to God Almighty for His care and protection throughout my six years' stay in school; without whom the completion of this thesis would have been a mirage.

My sincere gratitude also goes to my supervisor, Mr. Samuel Amos-Abanyie whom with much patience and dedication took time off his tight schedule and guided me through the completion of this thesis.

I salute Mr. Amoateng Mensah for his encouragement during the initial stages of this thesis when everything seemed so bleak. It really helped me.

My colleagues and friends are not left out. I thank them very much for their encouragements.

To Mr. and Mrs. Akumia I know no amount of thanks will suffice to complement all that you have than so all I have to say is "God bless you for all that you have done for me"

My final appreciation goes to Mr. Stephen Kofi Mensah for his immense contributions towards my education in every aspect. May God richly bless you for everything and replenish all your expenses in a thousand folds.



## ABSTRACT

Deviant behaviour is inevitable in every society because of individual differences that emanate as a result of environmental or societal influences or inherent characteristics. These deviant behaviours are the eventual results of crimes in society.

In order to curb these crimes society has made conscious efforts to isolate the perpetrators of such activities from its fabric in order to prevent other people from being influenced by these deviants.

Unfortunately, the intervention of isolation has not been very effective considering the number of recidivist prisoners recorded in the country's prisons. This probably is as a result of inadequate reformation process within the prison system and the unsuitable environment within which they are being reformed.

Inherent in the theory of punishing offences/crimes, where the system(s) and infrastructure is modelled on isolating and "keeping at bay" the offender, lies an irony; people convicted of crimes are catered for with the meagre resources of the society, and ex-convicts commit more heinous crimes upon their release sparking off a vicious cycle where society pays dearly with the loss of lives and property, and are sent back into the prison systems paid for by the meagre resources of society. It is in this view that there is the need to root for a revolution in the correctional system that lays more emphasis on transforming criminals and providing them with opportunities to develop and generate



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enough income for themselves, their families and finally contribute meaningfully to the advancement of society.

This thesis therefore discusses the need for a new prison reform and also the need for an integration center for prisoners before they finish serving their sentences so as to prepare them to fit and be accepted back into society. The focus is thus on occupational rehabilitation as a course of action to reduce crime in society.



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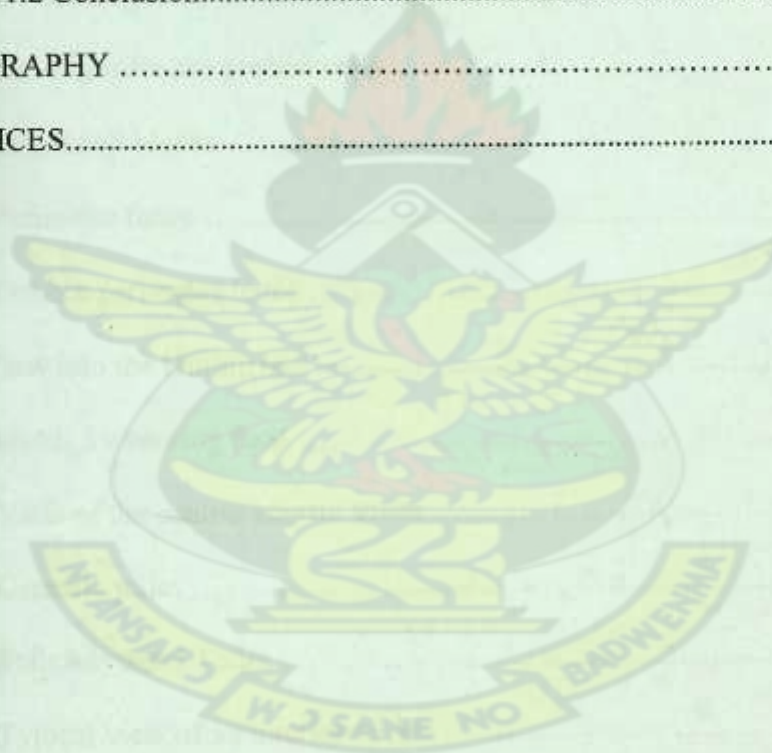
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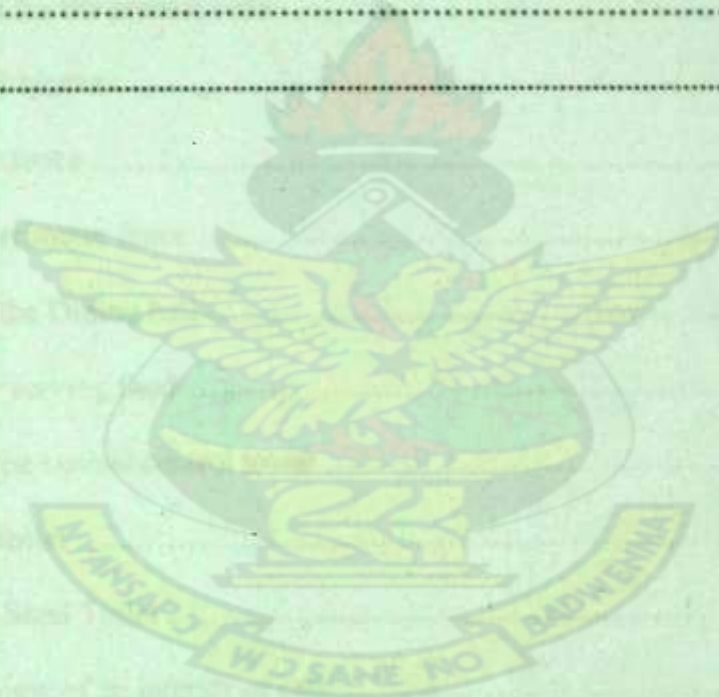
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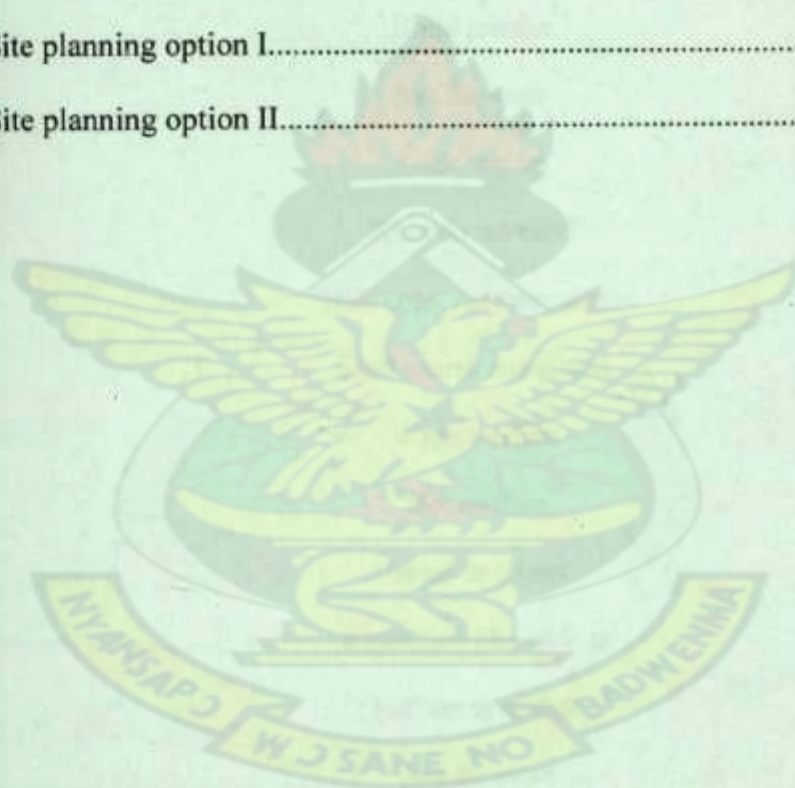


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## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **Poetic Justice**

Build prisons

Not day-care

Lock 'em up

What do we care?

Hire cops, not counselors

Staff courts, not clinics

Wage warfare

Not welfare

Invest in felons

Ripen 'em like melons

Eat 'em raw, then

Ask for more

More poverty

More crime

More men in prison

More fear in the street

More ex-cons among us

Poetic justice

*Robert Johnson*



## **CHAPTER ONE**

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## 1.1 BACKGROUND STUDY

The primary purpose for the existence of prisons is that society, finds it necessary to separate and isolate some people, who have broken the law through the means of court. The concept of this segregation has been in existence since and as old as society itself. Conventionally, prisons have been used for punitive purposes only and it is only recently that public opinion has come round to accept the notion of using imprisonment to reform inmates. Prior to this the word "prison" spontaneously evoked mental images of stark, forbidding walls spiked with watchtowers; inmates banging on the bars of their cells; the suspicious eyes of armed, uniformed guards and any such unpleasant condition of living. But centuries of development and debate lie behind the prison as we now know it - a rich history that reveals how our ideas of crime and punishment have changed over time. Penalties other than incarceration were once much more common, from such bizarre death sentences as the Roman culleus (sealing a convict in a sack with an ape, a dog, and a snake, and throwing the lot in the sea) to fines, various corporal punishments, and forms of public ridicule<sup>1</sup>. The nineteenth century saw the rise of the full-blown prison system - and along with it came the idea of prison reform.

When imprisoned, men and women do not cease to be human beings. Therefore the material and moral standards by which society lives must apply to them as far as possible. As a consequence to this fact, it follows that what happens to people in custody must always have regard to their likely conditions during as well as after release. Apart from the humane and secure containment of inmates, the prison environment should provide controlled conditions in which they can move towards a better understanding of themselves and learn to accept and deal responsibly with the consequences of their own behaviour. The design and architecture of the prison can certainly



play a pivotal role in this respect. Needless to say, if prisoners are held in drab surroundings for extended periods of time, their mental (and physical) condition degrades. This certainly does not mean that they be given luxurious settings. But this is where the architect steps in. He can attempt to strike a good balance which satisfies not only the primary requirement of security but also the secondary requirements in such a way that all inmates can have a sense of dignity even in their containment. Since the inmates are to be reformed, it becomes essential to provide them with a built environment that gives them a chance to introspect, and not an environment that leads to a loss of self control, self confidence and self esteem. A traditional jail environment cultivates a fear hate syndrome, which means that the inmates and the staff hate each other and at the same time are afraid of each other. This happens because of the fact that in the traditional jail setting, the basic inequality between the prisoners and the staff is emphasized, and there is undue subjugation of the personality of the inmates.

## **1.2 PROBLEM STATEMENT**

There is an increase in the incidence of crime in the global system as a result of instability in socio-economic development and rapid population growth. The crime rate is also compounded by advancement in technology. This fact has necessitated the need for frantic efforts to be made by various national and international organizations to fight it through a thorough collaboration. Every country has also made efforts to protect its citizens from crimes through strict adherence and execution of laws that govern the society.

Ghana is no exception in this regard and has established the criminal justice system to deal with characters that may cause a breach of her laws. As an adjunct of the Criminal Justice Administration in Ghana, the Ghana Prisons Service contributes to the maintenance of internal security and public safety as well as the safeguarding of efficient, humane and safe reformatory penal system operated within the laws of Ghana.

However, a lot more is required in terms of policies and programmes to enhance the current correctional system which is basically geared towards providing practical skills is lacking. It is evident the desired results of total character transformation and capable independence is not being achieved hence the recording of recidivist cases and the increment of crimes in general.

It is in this light that this report seeks to propose industrialization (skills training) as an essential part of the correctional system to make useful the practical skills to be acquired by providing a medium where skills can be manifested into material production and generation of income. This intervention would ensure access to startup capital and adequately reintegrate the ex-convicts into the society.

### 1.3 OBJECTIVES

- To harness convicts' potentials and translate them for use in national development.
- To study the evolution of prison architecture
- To provide convicts with appropriate skills that will make them self reliant economically as they prepare to be reintegrated with society.



- To create an environment where convicts could reflect on their lives emphasizing societal norms and ethics and thus make their reformation a meaningful one.
- To give convicts the opportunity to “pay” back to society what they have purportedly taken from it through services they will render.
- To create a transitional buffer environment for convicts to be reformed through discipline and restraint as well as bridging the gap between the prison and society.

#### 1.4 JUSTIFICATION

- Congestion and overcrowding in existing prison cannot be denied.
- Prisoners continue to be a burden to society as most of them have no skills to generate income for themselves and participate in economic development.
- The prisons service has no policy and programmes to transform prisoners into useful citizens.
- The way prisons are designed and constructed focus on punishment and not reformation.
- Large amount of the tax payers’ money used for the upkeep of prisoners could be reduced if the new prison reform should be directed towards providing convicts with requisite skills that could be harnessed for national development.
- Prisons should be designed to include facilities for learning skills- carpentry, masonry, welding, etc.

## **1.5 LOCATION**

In order to achieve my main objective of providing a skills and income generation centered correctional institution, the site selected is at Titrinu, a community in the Ho Municipality of the Volta Region.

The relatively flat land surface and services (water and electricity) and large stretch of relatively flat land surface put the site in a strategic position. Large stretch of clay deposit in the area should provide readily available source of raw material for use in the clay industry in the correctional institution with which will be the spine of income generation to run the facility.

## **1.6 SCOPE OF THESIS**

To reinforce the basis for the creation of a new correctional facility poised at the provision of requisite skills for the prisoners and then harnesses these skills for national development and eventually pave way for the adoption of this system as a new prison reform, the focus of this thesis will be on the appropriate layout and housing units designs which bridges the gap between current harsh prison environment and the 'free' environment (outside prison). It will also discuss the commercialization of industry/training facilities provided for optimum utilization and income generation for running the facility.

## **1.7 TARGET GROUP**

- All convicts

## **1.8 CLIENT**

- Government of the Republic of Ghana and Ghana Prisons Service.



## **1.9 CLIENT'S BRIEF**

- Housing units
- Workshop
- Staff accommodation
- Administration
- Education block
- Chapel and Mosque
- Infirmary

## **1.10 FINANCIERS**

The project will be funded by the Government of the Republic of Ghana.

## **1.11 RESEARCH METHODOLOGY**

- Literature research
- Case, precedence and special studies
- Photographic recordings
- Interviews
- Survey and data collection
- Personal observation

## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 DEFINITION

A prison, penitentiary, or correctional facility is a place in which individuals are physically confined or interned and usually deprived of a range of personal freedoms. Prisons are conventionally institutions, which form part of the criminal justice system of a country, such that imprisonment or incarceration is a legal penalty that may be imposed by the state for the commission of a crime. A prison is also a place for the confinement of persons in lawful detention, especially persons convicted of crimes.<sup>1</sup>

#### 2.2 PHILOSOPHY OF PUNISHMENT

**Punishment**, by definition, involves the infliction of pain on a wrongdoer. This in itself does not make punishment wrong but had generated a lot of controversies among philosophers. One school of thought believes that inflicting pain as punishment is fundamentally different from inflicting pain on innocents, and therefore is not inherently wrong. Another group believes that punishment is a wrong that can be justified only if it results in a "greater good". The former school of thought feels it is unnecessary to justify punishment beyond the fact that the individual deserves it and is called the *retributive* approach<sup>2</sup>. The latter ideology justifies punishment through the secondary rationales of deterrence, incapacitation, or rehabilitation and is referred to as the *utilitarian* approach.<sup>3</sup>



### 2.2.1 Retributive Rationale

The first philosophical approach defines punishment as strictly not evil and suggests a means of balancing a wrong through punishment. Revenge on the other hand is considered personal and not necessarily proportional to the victim's injury; retribution is impersonal and balanced. "Punishment is a pain or other unpleasant consequence that results from an offense against a rule and that is administered by others, who represent legal authority, to the offender who broke the rule".<sup>4</sup>

**Retributive rationale** in summary is the justification for punishment that proposes that society has a right to punish, as long as it is done lawfully and proportionally to the wrong committed by the offender which lies within the social contract- a view that seeks to explain that all people freely and willingly enter into an agreement to form society by giving up a portion of their individual freedom for the return benefit of protection. If one transgresses against the rights of others, one has broken the social contract, and society has the right to punish.<sup>5</sup> Another element of the retributive rationale is that the criminal *deserves* the punishment and, indeed, has a *right* to be punished. Only by forcing the individual to suffer the consequences of his actions does one accord them the rights of an equal citizen. This was explained by Herbert Morris that:

*First, . . . we have a right to punishment; second . . . this right derives from a fundamental human right to be treated as a person; third . . . this fundamental right is a natural, inalienable, and absolute right; and, fourth, . . . the denial of this right implies the denial of all moral rights and duties.*<sup>6</sup>

To do anything other than to punish is to treat the person as less than equal, perhaps even less than human. Under this view, correctional treatment is infinitely more intrusive than punitive



because it doesn't respect the individual's ability and right to make choices. It regards their behavior as "controlled" by factors that can be influenced by the intervention.<sup>7</sup>

In conclusion, the **retributive rationale** for punishment holds that because of natural law and the social contract, society has the right to punish, and the criminal has the right to be punished. It is not an evil to be justified, but rather, represents the natural order of things. According to Newman (1978, 287), "There is little grace in punishment; only justice."<sup>8</sup>

### 2.2.2 Utilitarian Rationale

The **utilitarian rationale** defines punishment as essentially evil, and seeks to justify it by the greater benefits that result. Under a utilitarian philosophical system, or utilitarianism, what is good is that which benefits "the many." Thus, even if it were painful to the individual, if the majority benefit from a certain act, then utilitarianism would define that act as good. The Utilitarian rationale therefore is the justification for punishment that proposes that society has a right to punish, as long as it results in a greater good for the majority of the population.

**Utilitarianism** is the ethical system whereby good is defined as that which results in the greatest good for the greatest number.<sup>9</sup>

Jeremy Bentham (1748–1832), the classical advocate of utilitarian punishment, believed that punishment could be calibrated to deter crime. His idea of a **hedonistic calculus** involved two concepts: first, that mankind was essentially rational and hedonistic (pleasure-seeking), and would seek to maximize pleasure and reduce pain in all behavior decisions; and second, that a legal system could accurately determine exactly what measure of punishment was necessary to slightly outweigh the potential pleasure or profit from any criminal act. Thus, if done correctly,



the potential pain of punishment would be sufficient to outweigh the potential pleasure or profit from crime, and all people would rationally choose to be law-abiding.

The utilitarian approach of punishment sees it as a means to an end—the end being deterrence (general or specific), incapacitation, or rehabilitation (reform).<sup>10</sup>

### **2.3 PURPOSE OF PRISONS**

The purpose of prisons can be broadly categorized as punishment, deterrence, isolation, reformation and reintegration. Though society has become benign, rational and more concerned with the rehabilitation of the offender, prisons still act as agents of punishment on behalf of the society. The very existence of prisons prevents the general public from indulging in unlawful activities. This is due to the fact that most people have a fear of being imprisoned, which is considered a social stigma. Also, a convicted prisoner is deterred from taking to crime after his sentence is over<sup>11</sup>. The idea behind isolation of the criminal is to prevent contamination of law-abiding members of society and also to protect them from potential danger to their lives or property. Reformation has received a major emphasis in the recent years with advances in penology. The concept of reformation begins with the fact that deviant human behaviour has specific physical, moral, mental, social, vocational or academic causes. Therefore, if the cause for the errant behaviour can be ascertained, the offender can be treated by suitable psychological therapy and counseling. Reintegration of the offender is only a more practical and realistic extension of the reformation philosophy. Like the reformatory model, it views the offender as needing help and at the same time realizes that errant behaviour is often a result of disjunction between the offender and society. Reintegration thus attempts to bring the offender close to the society by exposing him to the positive elements of a free environment<sup>12</sup>.



### 2.3.1 Deterrence

Here the criminal is used as a "threat to themselves and others". By subjecting prisoners to harsh conditions, authorities hope to convince them to avoid future criminal behavior and to exemplify for others the rewards for avoiding such behavior; that is, the fear of punishment will win over whatever benefit or pleasure the illegal activity might bring. The deterrence model frequently goes far beyond "an eye for an eye", exacting a more severe punishment than would seem to be indicated by the crime. Torture has been used in the past as a deterrent, as has the public embarrassment and discomfort of stocks, and, in religious communities, excommunication. Executions, particularly gruesome ones (such as hanging or beheading), often for petty offenses, are further examples of attempts at deterrence. One criticism of the deterrence model is that criminals typically have a rather short-term orientation, and the possibility of long-term consequences is of little importance to them. Also, their quality of life may be so horrific that any treatment within the criminal justice system (which is compatible with human rights law) will only be seen as an improvement over their previous situation. However, if that's the case, this points to a far more severe social problem.<sup>13</sup>

### 2.3.2 Rehabilitation/Reformation/Correction

("Reform" here refers to reform of the individual, not to reform of the penal system.) The goal is to "repair" the deficiencies in the individual and return them as productive members of society. Education, work skills, deferred gratification, treating others with respect, and self-discipline are stressed. Younger criminals who have committed fewer and less severe crimes are most likely to be successfully reformed. "Reform schools" and "boot camps" are set up according to this model.



One criticism of this model is that criminals are rewarded with training and other items which would not have been available to them had they not committed a crime. However, it must be noted that criminals or potential criminals who do not have access to such educational resources are only acting in their best interests by gaining access to these prisons; if a prison is successful at providing resources to individuals who were unable to get these resources through "acceptable" channels, then perhaps what would be next needed, in the implementation of this model, is *societal* reform<sup>14</sup>.

### **2.3.3 Removal From Society**

The goal here is simply to keep criminals away from potential victims, thus reducing the number of crimes they can commit. The criticism of this model is that others increase the number and severity of crimes they commit to make up for the "vacuum" left by the removed criminal. For example, incarcerating a drug dealer will result in an unmet demand for drugs at that locale, and an existing or new drug dealer will then appear, to fill the void. This new drug dealer may have been innocent of any crimes before this opportunity, or may have been guilty of less serious crimes, such as being a look-out for the previous drug dealer<sup>15</sup>.

### **2.3.4 Restitution/Repayment**

Prisoners are forced to repay their "debt" to society. Unpaid or low pay work is common in many prisons, often to the benefit of the community. In some countries prisons operate as labour camps. Critics say that the repayment model gives government an economic incentive to send more people to prison. In corrupt or authoritarian regimes, such as the former Soviet Union under the control of Joseph Stalin, many citizens are sentenced to forced labour for minor



breaches of the law, simply because the government requires the labour camps as a source of income. Community service is increasingly being used as an alternative to prison for petty criminals<sup>16</sup>.

## 2.4 HISTORY OF PRISONS

The word *prison* can be traced back to the Latin word *prēnsiō*, "the action or power of making an arrest." This in turn is derived from the verb *prehendere* or *prēndere*, which meant "to take hold of, take into custody, arrest." *Prēnsiō* then surfaces in the Old French of the 12th century with the form *prison* and the senses "capture" and "place of imprisonment." This new sense could have already been developed in Latin and not been recorded, but we have to wait until the 12th century to see it, the sense "captivity" being added in the same century. From Old French as well as the Medieval Latin word *priso*, "prison," derived from Old French, came our Middle English word *prisoun*, first recorded in a work written before 1121 in the sense "imprisonment." The sense "place of imprisonment" is recorded shortly afterward in a text copied down before 1225 but perhaps actually written in the Old English period before the Norman Conquest.<sup>17</sup>

For most of history, imprisoning has not been a punishment in itself, but rather a way to confine criminals until corporal or capital punishment was administered. There were prisons used for detention in Jerusalem in Old Testament times. Dungeons were used to hold prisoners; those who were not killed or left to die there often became galley slaves or faced penal transportations. In other cases debtors were often thrown into debtor's prisons, until they paid their jailers enough money in exchange for a limited degree of freedom.<sup>18</sup>



Only in the 19th century, beginning in Britain, did prisons as we know them today become commonplace. The modern prison system was born in London, as a result of the views of Jeremy Bentham. The notion of prisoners being incarcerated as part of their punishment, and not simply as a holding state till trial or hanging, was at the time revolutionary.<sup>19</sup>

The first "modern" prisons of the early 19th Century were sometimes known by the term "penitentiary" (a term still used by some prisons in the USA today): as the name suggests, the goal of these facilities was that of penance by the prisoners, through a regimen of strict disciplines, silent reflections, and perhaps forced and deliberately pointless labor on treadwheels and the like. This "Auburn system" of prisoner management was often reinforced by elaborate prison architectures, such as the separate system and the panopticon. It was not until the late 19th Century that rehabilitation through education and skilled labor became the standard goal of prisons.<sup>20</sup>

## **2.5 PRISONS SYTEM IN GHANA**

There was no prison system in traditional Ghanaian society. In the mid-nineteenth century, the British council of merchants established a network of harsh prisons in forts and castles such as the Cape Coast Castle. By 1850 four such prisons could hold up to 129 prisoners. Convicts usually worked on road gangs. The Prisons Ordinance of 1860 outlined regulations for the safe-keeping of prisoners. Later ordinances further defined the nature of the colony's prison regimen, or "separate system," which required solitary confinement by night, penal labor, and a minimum diet. By the early 1900s, British colonial officials administered the country's prisons and

employed Europeans to work as guards in the prisons. After World War II, Ghanaians gradually replaced these individuals. By 1962 Ghanaians staffed all positions in the prison system.<sup>21</sup>

Ministerial responsibility for the prison system has shifted periodically since independence, but the operation of prisons is fixed by statute and is divided into adult and juvenile correction. The former is governed by the Prisons Ordinance, which outlines rules for prison operation and treatment of prisoners. The constitution of 1969 established a Prison Service, the director of which is appointed by the president and is responsible to the minister of interior. The Criminal Procedure Code determines procedures for handling young offenders.

The Prisons Service Board formulates prison policy and regulations. The board consists of a Public Services Commission member as chairman, the prison services director, a medical officer of the Ghana Medical Association, a representative of the attorney general, the principal secretary of the Ministry of Employment and Social Welfare, and three other appointed members, one of whom must be a woman and two of whom must be representatives of religious organizations.<sup>22</sup>

To ensure the welfare and the proper treatment of prisoners, the constitution requires the Prisons Service Board to make regulations for the review of prison conditions at intervals of not less than two years. Reports of unjustified treatment of prisoners and recommendations for reform measures are required of the board.



The Prisons Service Board also administers the country's prisons. As at 1992, the prison system consisted of twenty-seven institutions, including six central prisons for men at Accra (Ussher Fort and James Fort), Sekondi, Kumasi, Tamale, and Nsawam; two for women at Ekuasi near Sekondi and at Ho; fifteen local prisons sited throughout the country, six of which have annexes for women; and two open prisons, one at James Camp near Accra, and the other at Ankaful near Cape Coast. About 70 percent of commitments are for less than six months. Outside the criminal justice system, the Ministry of Employment and Social Welfare operates probation homes in Accra and Jakabu Ashanti for boys and in Kumasi for girls; and detention centers in Accra, Sekondi, Cape Coast, and Kumasi handle juveniles of both sexes.<sup>23</sup>

However, according to the 2007 Annual Report of the Ghana Prisons Service, there is an increase in the number of prison establishments from twenty-seven (27) recorded in 1992, to forty-five(45). The following is a break down of the 45 prison establishments;

- Prisons Headquarters
- Prison Officer's Training School
- Senior Correctional Centre, SCC(Formerly Ghana Borstal Institution)
- 7 Female Prisons
- 7 Central Prisons
- 15 Local Prisons
- 2 Open Camp Prisons
- 10 Agricultural Settlements Camp Prisons
- 1 Medium security Prison

## 2.6 PRISON DESIGN CONSIDERATIONS

Security considerations make prisons expensive buildings. It is worthwhile to make imaginative efforts to ensure that capital costs and recurring expenditure required for construction and operation of prisons be utilized for objectives other than merely detaining inmates.<sup>24</sup> There has to be scope for education, training and opportunities for physical and mental growth of prisoners leading to their integration within society as productive, responsible citizens. Prisons have a complex structure and they must be designed after taking into account several factors, such as

- Secure accommodation
- segregation of various categories of inmates
- sanitation and hygiene
- daily routines of inmates
- opportunity for exercise and physical activity
- medical services
- education and religion
- social behaviour and factors influencing it

Designers need to become aware of the problems associated with correctional facilities. With a better understanding of inmates, staff and user needs, they can develop a model prison that will incorporate skills training<sup>25</sup>. The resultant effect will be new ex-convicts sufficient with skills to participate in economic development. Thus value for money that has been spent on them whilst in prison. The bottom line is that skills training should complement incarceration in the new correctional facility.



## 2.7 PHILOSOPHY OF IMPRISONMENT

Imprisonment is a complex form of punishment. It affects a person's material possessions because they can earn little or no income. While in confinement, prisoners may lose their jobs or livelihood, spend their life savings, and have their total lifetime earning capacity affected. It affects the prisoner's body because he or she is under the control of others and very little freedom exists. Imprisonment may result in actual physical harm, from attacks by correctional officers or other inmates or from illnesses or injuries left untreated. Prison also attacks the psyche by attempts at reformation and through the mental deterioration that occurs because of the negative environment of the prison. Many describe prison as a "psychological punishment".<sup>26</sup> According to some, prison in its most severe form attacks "the soul"; it acts on the "heart, the thoughts, the will, the inclinations of the prisoner".<sup>27</sup> Prison critics allege that the most detrimental effects are not physical deterioration, but mental and moral deterioration. "You are nothing!" is a theme that prison inmates live with during the course of their imprisonment, and the mental toll that prison takes on its population is very difficult to measure.

## 2.8 PRISON CLASSIFICATION

Based on the level of security consideration, which is dependent on the kind of crime committed by the incoming inmates, prisons could be classified mainly as maximum, medium and minimum security prison. Also Pre-Release system could also be considered in some cases.<sup>28</sup>



### **2.8.1 Maximum Security**

A custody level in which both design/construction as well as inmate classification reflect the need to provide maximum external and internal control and supervision of inmates primarily through the use of high security parameters and extensive use of internal physical barriers and check points. Inmates accorded this status present serious escape risks or pose serious threats to themselves, to other inmates, to staff, or the orderly running of the institution. Supervision of inmates is direct and constant.<sup>28</sup>

### **2.8.2 Medium Security**

A custody level in which design/construction as well as inmate classification reflect the need to provide maximum external and internal control and supervision of inmates. Inmates accorded to this status may present an escape risk or pose a threat to other inmates, staff, or the orderly running of the institution. Supervision remains constant and direct. Under this system, job and program opportunities exist but an inmate's access to these facilities is dependent on his/her willingness to comply with institutional rules and regulations.<sup>28</sup>

### **2.8.3 Minimum Security**

A custody level in which both the design/construction as well as inmate classification reflect the goal of returning to the inmate a greater sense of personal responsibility and autonomy while still providing for supervision and monitoring of behavior and activity. Inmates within this security level are not considered a serious risk to the safety of staff, inmates or to the public. Program participation is mandated and geared toward their potential reintegration into the community. Access to the community is limited and under constant direct staff supervision.<sup>28</sup>



#### **2.8.4 Pre-Release**

A custody level in which both design/construction as well as inmate classification reflect the goal of restoring to the inmate maximum responsibility and control of their own behavior and actions prior to their release. Direct supervision of these inmates is not required, but intermittent observation may be appropriate under certain conditions. Inmates within this level may be permitted to access the community unescorted to participate in programming to include, work release, educational release and others in like regard. However, they are not limited to these designated programmes. The prison establishment may use their discretion where applicable.<sup>29</sup>

### **2.9 DESIGN OF PRISONS- LAYOUTS**

Throughout the history of prison construction, there have been basically four models of prisons. The layouts are the radial design, the telephone-pole design, the courtyard style, and the campus style layout.<sup>30</sup>

#### **2.9.1 The Radial Design**

The radial design looks a lot like an asterisk. This is a linear design with cells aligned in rows down the cell blocks. In the radial design, the cell blocks and program buildings extend from a central hub. This design has not been copied in prisons built over the past 75 years. This is probably because that all the inmate traffic and movement comes to one point in the prison. This congestion in the prison presents a dangerous situation, particularly in high-security prisons.<sup>30</sup>



### **2.9.2 The Telephone Pole**

The telephone-pole design is another linear style. This was used extensively between the 1920s and 1970s. Inmates and staff move along a main corridor down the center or the pole, and the cell blocks and program buildings extend from that corridor. It was popular mostly because it was easy to erect barred grills across the "pole," and close them to isolate smaller groups of offenders in case of a riot or disturbance. These telephone-pole designed prisons were designed specifically to control prison violence. They were built like fortresses that appeared to be quite secure. Unfortunately, on the inside there were many hard-to-monitor corners and other places that were ideal for stabbings, beatings and other forms of violence.<sup>30</sup>

### **2.9.3 The Campus Style**

Campus style prisons have been used more recently. This style was first initiated by the Federal Bureau of Prisons (FBP), in the United States of America. The first of these designs included the buildings being separated and spread out over several acres within the secure perimeter. It was believed that forcing inmates to move from one building to another, walking outside instead of within a corridor, has a positive effect on the environment of the prison. Also, with the decentralized location of the buildings, there is little inmate congestion as they move through the prison. This decreases the likelihood of dangerous tension. The campus style prisons remain very popular today, as institutions adapt the design to best fit their purpose.<sup>30</sup>

### **2.9.4 The Courtyard Type**

The last common model of prison design is known as the courtyard design. This model was developed to take advantage of the benefits available from both the telephone-pole and campus



designs. With the courtyard style, buildings are attached to a corridor that runs around the prison, leaving a courtyard in the middle. The corridor can be used for inmate movement during much of the day, allowing prison administrators to contain and isolate inmates in the corridor by closing grills across it. The recreation yard is in the middle of the courtyard. This style is often used in high-security institutions.<sup>30</sup>

# KNUST



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## **CHAPTER THREE**

### **3.0 RESEARCH METHODOLOGY**

In order to reinforce the basis for the creation of a new correctional facility poised at skills training and to study the evolutionary history of prison architecture, along with various prison layouts and systems all around the world, various research methods were employed.

### **3.1 LITERATURE RESEARCH**

Literature was collected from various libraries and the internet and presented in a systematic manner.

### **3.2 CASE STUDY AND PRECEDENCE STUDY**

To identify special considerations necessary for correctional institution designs, case studies of facilities in like manner were undertaken. For this purpose, the Sekondi Central prison in the Western region of Ghana and the North Branch Correctional Institution (NBCI), Baltimore, USA were selected.

The central sewage system of the 66 Artillery Regiment (Volta Barrack in Ho) was studied and the information on such was of immense help in my quest to provide a self sustaining environment.



The rain water storey system of Mawuli School (a Senior High School in Ho, Volta region) has also been studied to be employed in the project.

Security systems employed for use in some banks in the country has also been studied to enable the implementation of the best possible system as regards cost implications.

### **3.3 PHOTOGRAPHIC RECORDINGS**

For the purpose of depicting precise conditions and situations, pictures were taken where ever possible.

### **3.4 INTERVIEWS**

To ascertain first hand information about conditions in prisons and their operations, interviews were conducted with some prison officers in the country (Ghana). This was done on informal basis and was targeted more on the personal experiences and expectations of tin the form and the revelations, some of which were stunning, broadened my scope of what to provide in my project.

### **3.5 PERSONAL OBSERVATION**

The situations observed personally upon visit to the prisons for the purpose of this study and also visiting others there had enlightened and guided me into making meaningful and realistic interventions for the project in terms of residential accommodation for officers.





## **CHAPTER FOUR**

### **4.0 FINDINGS AND DISCUSSIONS**

This chapter emphasizes the deductions gathered from the literature on correctional institutions and facilities here in Ghana and abroad and discusses the pertinent issues relevant to the area of study.

The importance of security considerations in the design of any correctional institution cannot be underplayed as such would be given paramount attention in my design as juxtaposed to cost implications.

The type of layout to be employed to achieve best possible results for a specific security level of correctional institution has also been noted for consideration.

Previous and current data on prisons in the country and their conditions and operations were also noted to be help during decision making process for the project.

### **4.1 CASE STUDY**

Because of the importance of security considerations in the design of any correctional institution, a supermax prison which presents modern security considerations and a local prison have been studied. The intermediate between these two security extremes will be considered in the design of the new correctional institution. These are the North Branch Correctional Institution (NBCI), USA and the Sekondi Central prison in Ghana.

## 4.2 CASE STUDY 1-NORTH BRANCH CORRECTIONAL INSTITUTION (NBCI)

### 4.2.1 Reason for study

The decision to use NBCI as a case study was influenced by the fact that it introduces a new revolution in the design of prison security systems. Better acquaintance with the security system and how it affects the design will be considered in the provision of security systems in the design of a correctional institution in a tropical country like Ghana.

### 4.2.2 Location

NBCI is a maximum security prison located in the Maryland state near an existing correctional facility- Western Correctional Institution (WCI) in the United States of America.



Figure 4.1a



Figure 4.1b

Figure 4.1 a and b Location of NBCI





**Figure 4.2** Aerial view of NBCI and WCI

#### **4.2.3 Site Characteristics**

Large stretch of land with unobstructed view characterizes the location of NBCI. Total land area occupied by NBCI is 80 acres out of the total 160 acres of land designated for two facilities – The Western Correctional Institution occupies the other half. The site is bounded by Mountains on the Eastern side which hampers any escape attempts through that side.

The Potomac River provides a barrier against escapees.



**Figure 4.3** Mountains on the Eastern side of site



**Figure 4.4 Potomac River**

#### **4.2.4 Design Concept**

The concept of the design of NBCI is "INVERTED FORTRESS".

Fortresses are built to inhibit entry from outside. Turning this inside-out means securing the facility to prevent escape by occupants.

#### **4.2.5 Layout**

The facility is made up of four housing units with a massive support building at the center with a central control tower at the mid section. This separation of the housing units from one another increases visibility and reduces the tendency of massive revolting by inmates of the various housing units.





Figure 4.5 four housing units surrounding support building

#### 4.2.6 Construction Techniques

The cells of the various housing units are constructed with thick reinforced concrete walls.

They are constructed under ultra control, highly specialized conditions by companies specialized in precast cell construction. The precast cells (which have already been fitted with services) are then put together to complete the construction process



Figure 4.6 Steel cages for the precast cells



Figure 4.7 Precast cell blocks

#### 4.2.7 Security considerations

High double fence stainless steel walls connected to electricity. Motion detectors are also placed beneath ground level to breach any escape attempt through the ground.



Figure 4.8a Perimeter fence



Figure 4.8b Double perimeter fence

There is maisonnette floor where officers are constantly monitoring activities within the Dining Hall. Tear gas pores are also located within the dining hall to help control riots.



Food is also served through a small serving hatch to prevent inmates from attacking the kitchen staff.



Figure 4.9 View into the Dining hall



Figure 4.10 Hatch for serving food

The use of surveillance cameras which are controlled from the central control tower also helps officers to constantly monitor inmate activities.



Figure 4.11a



Figure 4.11b

Figure 4.11 View of the central control tower

#### 4.2.8 Findings

The use of stainless steel sanitary wares instead of ceramic ones to reduce the risk of vandalism by inmates was a main feature of the cell blocks.



Figure 4.12 Ceramic toilet



Figure 4.13 stainless steel toilets

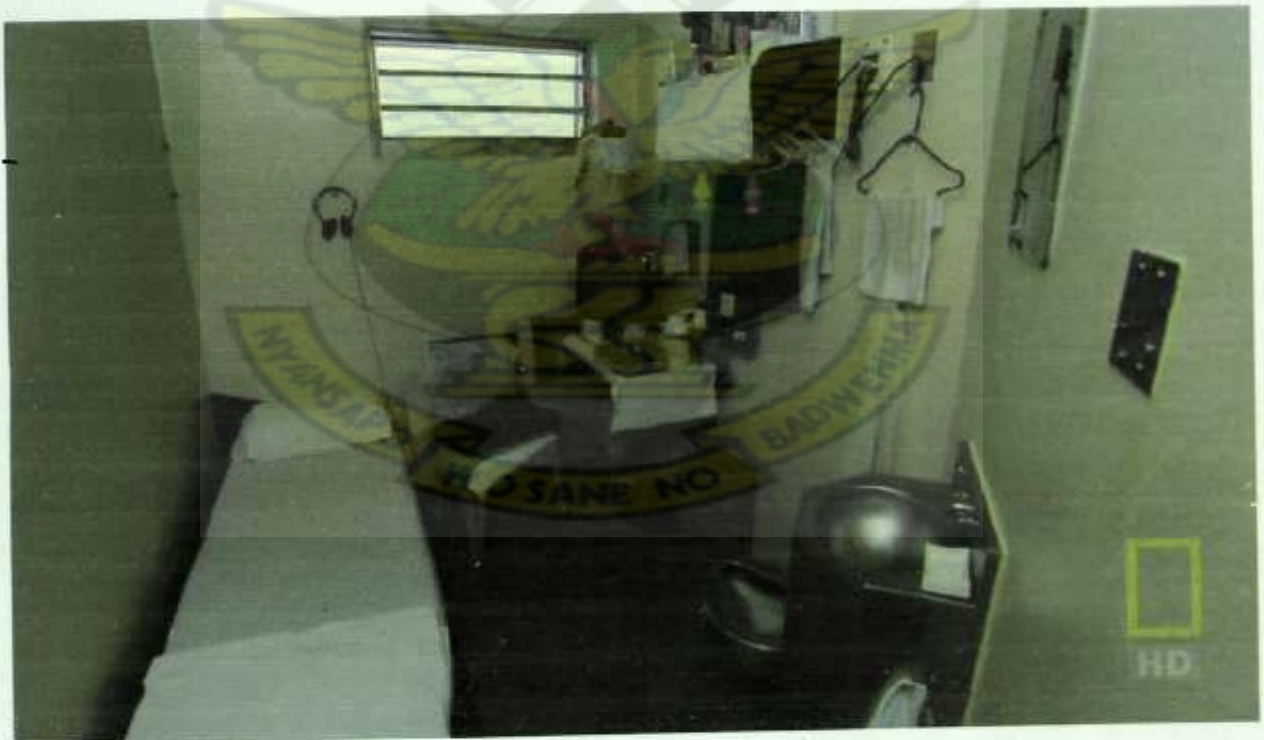


Figure 4.14 Typical view of an interior of cell



#### **4.2.9 CONCLUSION AND IMPLICATIONS**

The security systems used in the facility, especially the perimeter fence wall and the use of closed circuit television cameras is necessary to forestall attempts at escaping. The use of stainless steel toilet bowls in cell rooms is considered to be a way of reducing vandalism and cost (in the long term). Food for prisoners is served through hatches to prevent attack by prisoners. Security and safety of staff is given priority in design of correctional institutions of such nature.

There is a high cost implication to be faced if such installations are applied to the Ghanaian scene hence the need to direct the facility towards income generation.

The positive aspects of the design of NBCI will be further investigated so as the least of facilities will be achieved whilst at the same time providing the required security.

#### **4.3 CASE STUDY 2- (AN APPRAISAL OF THE SEKONDI CENTRAL PRISON BY OLIVER MENSAH, 2006)**

##### **4.3.1 REASON FOR STUDY**

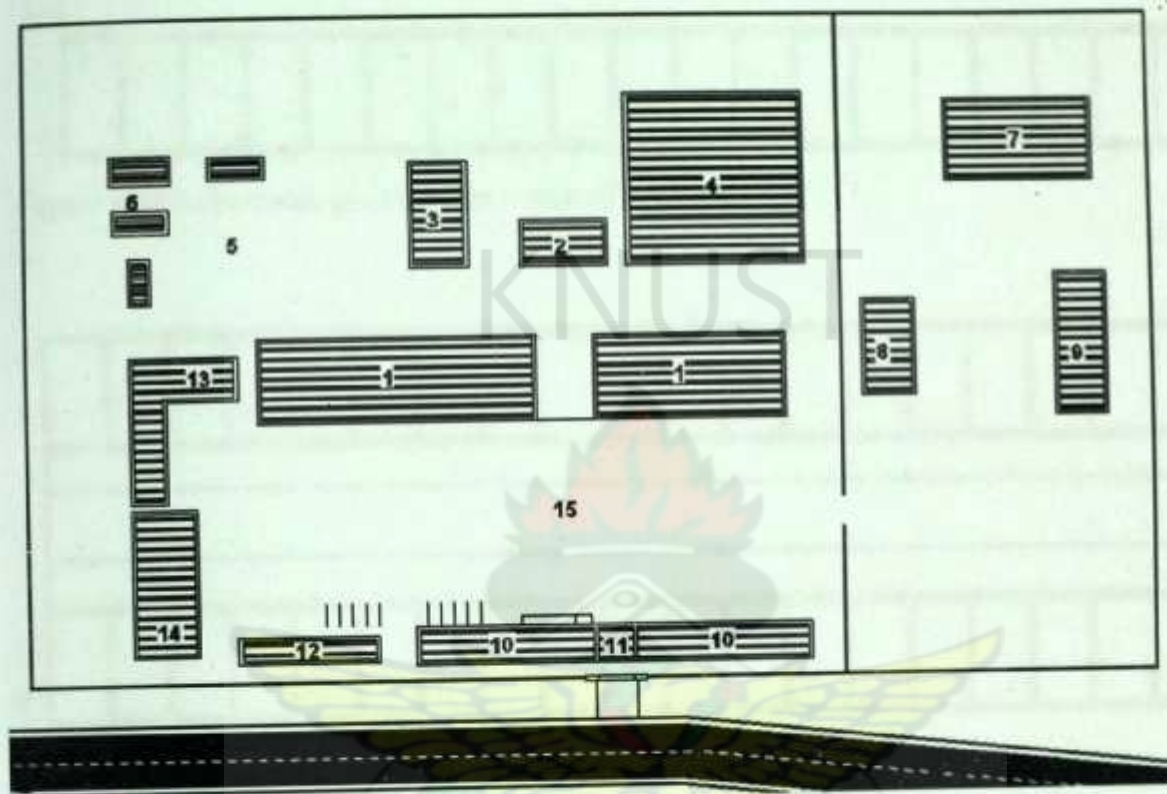
This facility offers itself for study as an account of the differences that exist between the Supermax prison and that of the Sekondi Central Prison. This is in relation to the design, material usage, the security systems and the location of the two institutions.

##### **4.3.2 LOCATION**

The Sekondi Central Prison is located off the Takoradi – Sekondi road, opposite the district assembly office at Sekondi, in the Western Region of Ghana. The absence of commercial activities in the area makes it relatively peaceful.

### 4.3.3 LAYOUT

The various blocks of the prison have been dispersed within the secure perimeter of the building. This could be described as the campus layout type.



**Figure 4.15** Layout of prison  
LEGEND.

- |                          |                       |               |
|--------------------------|-----------------------|---------------|
| 1. MAIN CELL BLOCK       | 8. CAPENTRY WORKSHOP  | 15. FORECOURT |
| 2. CHURCH                | 9. STORES             |               |
| 3. KITCHEN               | 10. ADMINISTRATION    |               |
| 4. DOOR MAT WORKSHOP     | 11. CHECKPOINT        |               |
| 5. EUROPEAN YARD         | 12. PROPOSED INFIRMRY |               |
| 6. ISOLATION             | 13. TAILORING         |               |
| 7. BLACKSMITH'S WORKSHOP | 14. INFIRMARY         |               |



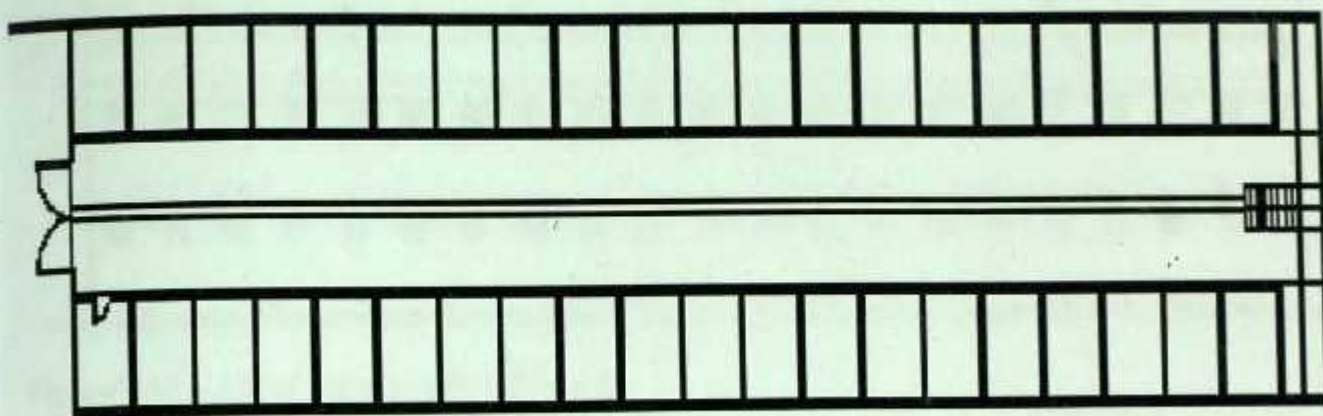


Figure 4.16 Schematic ground floor plan of cellblock



Figure 4.17 Schematic first floor plan of cellblock

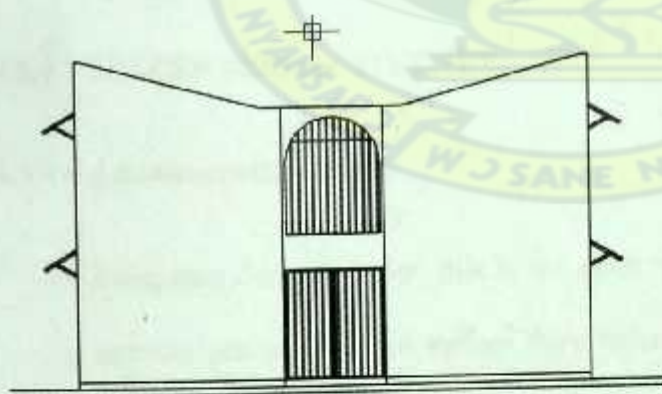


Figure 4.18 Side elevation of cell block showing main entrance

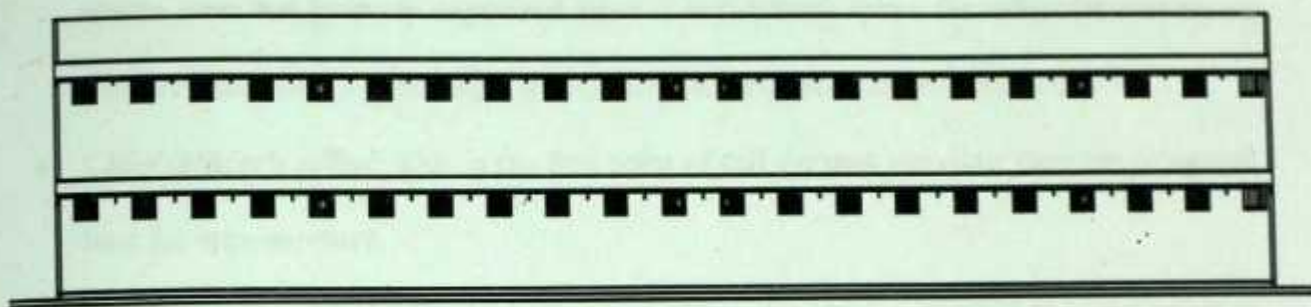


Figure 4.19 Front elevation of cell block



Figure 4.20 Typical section through cell block

#### 4.3.4 SPACES AND ACTIVITIES

##### 4.3.4 a Administration Block

- **Reception / check point:** this is the open space behind the gate where routine checks of inmates are carried out before they leave or enter the facility. There is space where visitors' belongings are temporary kept, they are then tag before entering facility. These



spaces were not properly organized since it is the same space for vehicular movement into the “forecourt” –quadrangle space. The result is a vehicle and human conflict.

- **Chief Officer's office:** This is the first point of call for new convicts; they are processed here for imprisonment.
- **-Property room:** Here personal belongings of inmates are documented and kept safely to be returned when they are released eventually.
- **Communication room:** This is a small room with communication equipment used for keeping contact with other wings of the prison service and receiving commands and directions from the Main Prisons headquarters in Accra.
- **General office (open office):** Used for secretarial and clerical works for office work in the administration block.
- **Chaplain's office:** The chaplain's office serves as a place for counseling and other rehabilitation and reformation purposes. It also serves as the spiritual headquarters for the facility.
- **Technical officer's office \ auditing officer:** Matters pertaining to estate and industry are organized and controlled from this office. This outfit deals with all issues relating to housing within the facility as regards its role in skills training.
- **Criminal records office:** This space takes care of two activities namely record keeping for the rest of the administrative part of the prison. A section is set aside for inmate interaction with relatives under supervision.
- **Staff office\ finance desk:** This office is in charge of correspondence both for staff and inmates and is linked to the finance office.
- **Finance office:** Takes care of the cash flow into and out of the prison

- **Regional commander's office:** The office of the commander is situated such that it overlooks the gate and a fore court on the first floor of the administrative block.

#### 4.3.4b Main Prison Space

- **Forecourt:** This is the space between the administration and the main prison blocks. This space is normally for circulation but also occasionally for parades, inspection and congregation of inmates.
- **Cells:** from the research it was known that prisoners' classification is according to the number of years of their sentence and their respective security levels but this has not been successfully done. Prisoners have been put into remand cells, convict cells or isolation. The facility has 3 types of cells; 1- the cubicle type which is about 2.4m x 3m and it accommodates 3-4 inmates.
- The general cell type that takes about 40 inmates. 3- the third type is the isolation cells at the "European" yard. This yard during the colonial era was known for housing non-native inmates and later on for hardened criminals. On the average cells are now accommodating three times the number they were designed for.
- **Church (non-denominational):** This facility can be accessed from the main cell blocks and has a courtyard in front of it where prisoners usually gather to engage in choir practice and other social activities.
- **Kitchen:** The prison has a central kitchen where inmates and other dishes are prepared but inmates' rations are served at the cell blocks. The kitchen structures however are not in



the best of conditions partly due to the fire wood used for cooking and the poor state of structure due to lack of maintenance and painting.

- **Prison stores:** A variety of items for the smooth running are stored in these stores; ranging from foodstuffs, raw materials for the various workshops and tools to the end product from the workshops.
- **Workshops:** There are a number of work shops that facilitate vocational training programmes. Some of the vocational training programmes include carpentry, tailoring, blacksmithing, doormat weaving workshops and a corn mill that takes care of the facilities milling needs.
- **Infirmiry:** The facility has an infirmiry to take care of the health needs of inmates. Nurses from the public hospital do attend to inmates on routine basis. There are plans; in fact an extension of the infirmiry is under construction to address the worsening health conditions within the facility.

#### 4.3.4c Other Facilities

- There are other facilities such as the cafeteria, outside the prison wall for officers off duty or on break.
- On the other side of the street to the main prison is the female prison which has its own administrative and security machinery.

#### **4.3.5 PRISON DESIGN AND MANAGEMENT SYSTEM**

Since the prison (Sekondi Central Prison) serves as the headquarters for all of the region's correctional facilities it has a Regional Commander at the top of its chain of command followed by the 2IC and the list goes on. However the facility can be placed in terms of design under the First Generational Correctional facility type due to the above-mentioned characteristics/features. At the same time it exhibits characteristics of a Second Generational Correctional Facility. In actual fact the Sekondi Central Prison appears to be a combination of the above two.

- This facility is a first generation facility because all the blocks that make up the prison is of a linear design and has intermittent supervision.
- Cell blocks were designed providing single occupancy cells
- The prison has a centralized system of administration and cell blocks
- All facilities including sanitary, kitchen are located close to inmates hence preventing long distant movement to access such facilities.
- However places such as visiting area are apart from the main cell facilities thus prisoners have to be provided with guard escorts to the administration which is characteristic of a second generational correctional facility because these facilities have their daily activities separated from their living modules which necessitates movement of inmate to a variety of locations in the facility under supervision.
- The facility does not use any form of high tech equipments for example cameras for supervision and safe custody but rely solely on the ability of the officers to supervise and



interact and not structural or technological barriers as in the second in the second generation facility.

- Some inmates are involved in productive labour in their various workshops and kitchen headed by respective officers.

The prison facility under study is geared towards containing negative behaviours. The above put together can place this Prison some where in between the first and second generational correctional facilities.

#### **4.3.6 CONSTRUCTION TECHNIQUES AND MATERIALS**

Main materials used for the structures were stone as was the case in most buildings of the European settlers in the late eighteenth century who built it. These walls today bear the same color (white-washed walls) as those of the castles and forts, but what is not clear is the reason for this particular color; probably for the facility to appear neat but definitely not to attract anyone. The courtyards are covered in gravel chippings to allow rain water to easily drain or soak away. This is a better option to other ground finishes.

There is evidence of the use of timber (single layer of wooden board) serving both as an intermediate floor and at the same as a ceiling to the lower floor. This can be seen in the administration block which also has a wooden staircase that leads to the offices on the upper floor. However the upper floors have ceilings made of plywood below their gable roofs. Another major use of timber can be seen in the sentry posts.

Roofs to the various structures range from simple gables to combinations of mono-pitched roofs covered in asbestos sheet; a material that has been proven not to be so good health wise.

#### **4.3.7 SECURITY AND SECURITY FEATURES**

In the design of prisons all else is compromised for the sake of good security. How successful the security apparatus are is not one of the purposes of this study. There are several features that the study seeks to outline.

##### **4.3.7a The Gate**

The gate in physical terms serves as the main security feature of the facility; it is that which “holds in” all the inmates. The gate has been described philosophically as the eye of the prison. All that comes in and goes out has to pass through the view of the eye.

The gate of the Sekondi Central Prison is made of steel with no openings in them and fitted into thick stone wall. This setup basically allows only official and service cars through. Behind the gate sits the administration through which cars drive after routine checks.

The solid wall in which the gate is positioned is flanked on both sides by blind arches and in front of the gate are canons mounted to further drive home the message of absolute and confinement once offenders are placed behind them.





**Figure 4.21** A view of the prison gate and mounted canon



**Figure 4.22** razor wire on prison wall

#### **4.3.7b The Sentry Tower, Inner lane and main fence wall**

These two features ensure that no escapes are possible.

The inner lane is a fenced (wire fenced) space of about 1.5-2m to the main wall. This serves as buffer zones together with the sentry in their towers overlooking the entire prison. These two features (sentry tower and inner lane) together with the razor wired walls provide a good degree of security.

#### **4.3.7c Doors and Windows**

Doors and windows are either made of steel or have steel reinforcements in the openings with wooden frames. There is a general absence of advanced equipment such as automatic openings, steel doors, cameras and other handy security gadgets. A lot of improvement could be made in this regard. Enhancing the strength of material for these openings will in turn guarantee the safe custody of inmates.

#### **4.3.8 CONCLUSION AND IMPLICATIONS**

Though not a settlement camp, this prison trains inmates in the field of trades and crafts. This will be considered and commercialized in my design to serve as the spine for income generation to run the facility. The use of available local materials was also manifested and this will also be taken into consideration.



#### 4.4 SITE SELECTION

The location of a prison affects its operations and the convenience of staff and visitors for as long as the facility is operational. It will also affect construction, project, and annual operational costs. Site selection is frequently a difficult political issue - finding a location acceptable to the public has thus been a major stumbling block to many a prison project, resulting in delays and, in some cases, the termination of an otherwise well planned effort. Careful site selection, then, is one of the most important features of a successful facility development process, as is the consideration of a site's impact on design. The various issues surrounding site selection can be organized around three primary factors: size, location, and cost which were taken into consideration in my site selection process.

##### 4.4.1 LOCATION

The site is located in the Volta Region within the Ho Municipality which lies between latitudes  $6^{\circ} 20' N$  and  $6^{\circ} 55' N$  and Longitudes  $0^{\circ} 12' E$  and  $0^{\circ} 53' E$  and covers an area of 2.660 sq km.

It is located along the Ho-Aflao high way; about 15 minutes drive from the CBD of Ho

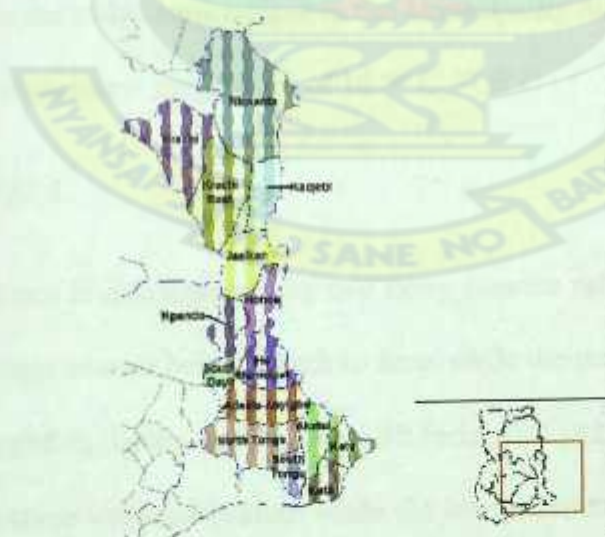


Figure 4.23 Map of Volta region

#### 4.4.2 VEGETATION

The two types of vegetation in the district are the moist semi-deciduous forests of the hilly areas and the savannah woodland



Figure 4.24 View unto site



Figure 4.25 View along Ho –Afloa road

#### 4.4.3 TEMPERATURE

Generally, mean monthly temperatures in the Municipality range between 22° C and 32° C while annual mean temperatures range from 16.5° C to 37.8° C

#### 4.4.4 RAINFALL

The rainfall pattern is characterized by two rainy seasons referred to as the major and the minor seasons. The major season being March to June while the minor one from August to November. Mean annual rainfall figures are between 20.1mm and 192mm. The highest rainfall occurs in June and has a mean value of 192mm while the lowest rainfall is in December recording a value of 20.1mm.



#### 4.4.5 RELIEF

The general relief of the Ho Municipality falls into two main parts: mountainous part and low land areas. The mountainous areas are mostly to the North and Northeast, which are part of Togo Ranges and have heights between 183 - 853 metres.

#### 4.4.6 GEOLOGY & SOIL

The major soil types found within the municipality are; the a) Forest Soil - forest ochrosols, lethosols and intergrades found in the mountainous and wetter northern areas of the Municipality and b) Savanna Soil - sandy soil in Sokode and part of Ho Township.

#### 4.5 SITE ANALYSIS

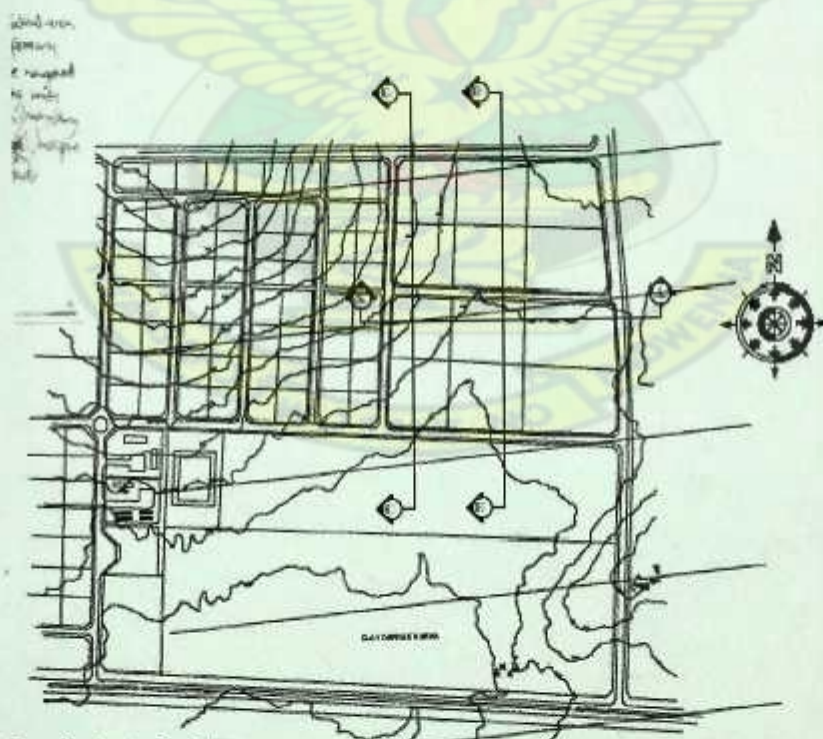
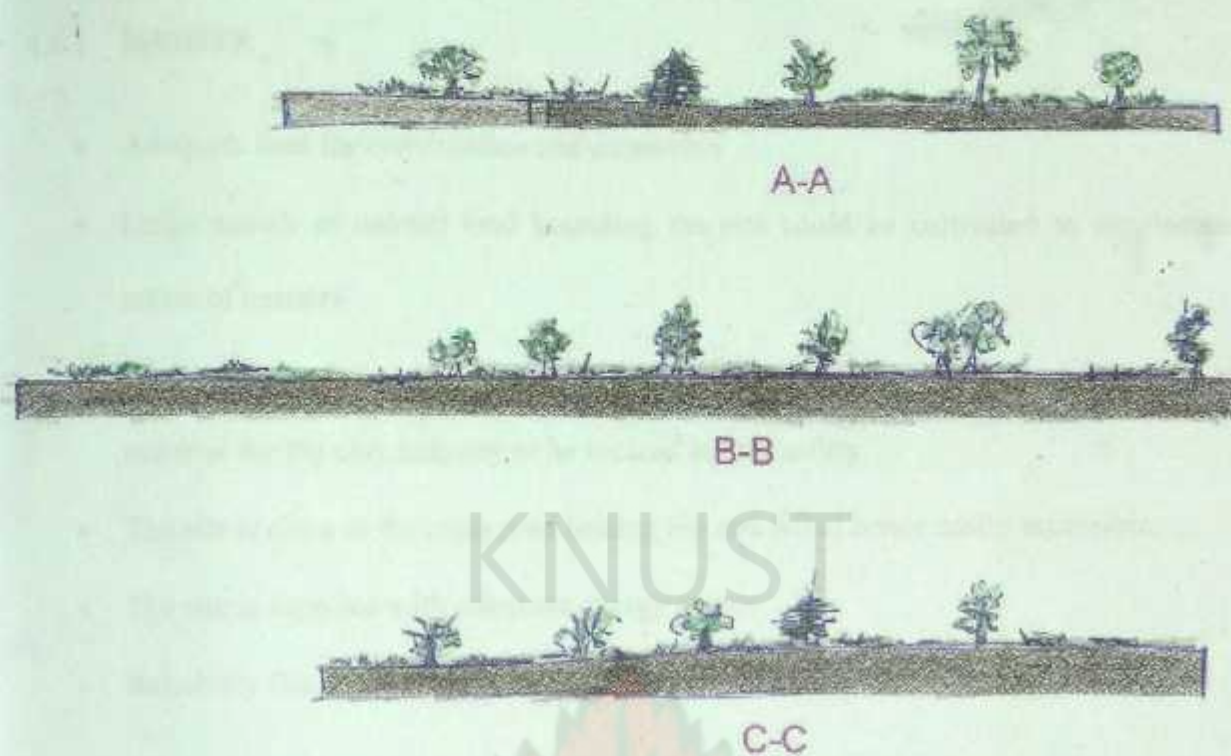
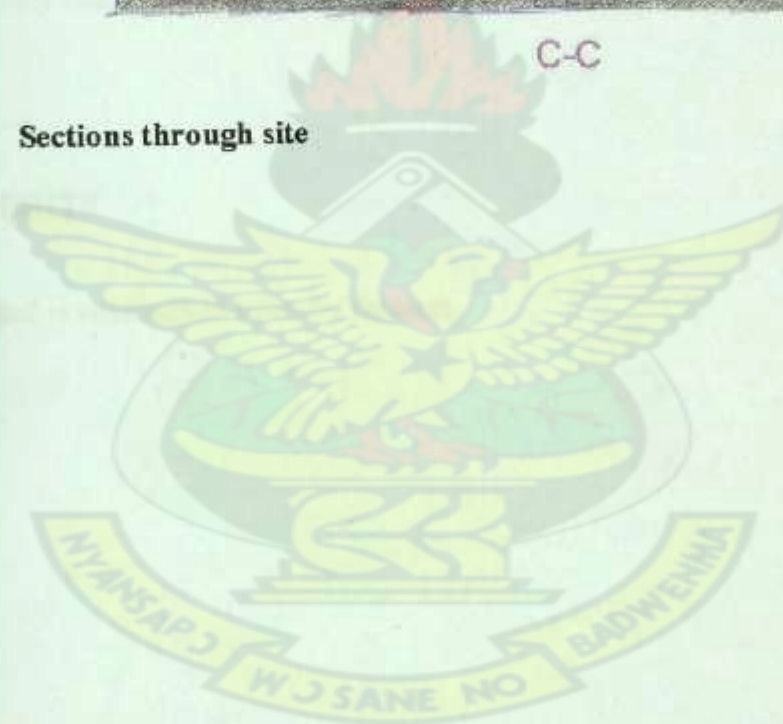


Figure 4.26 Selected site



**Figure 4.27** Sections through site



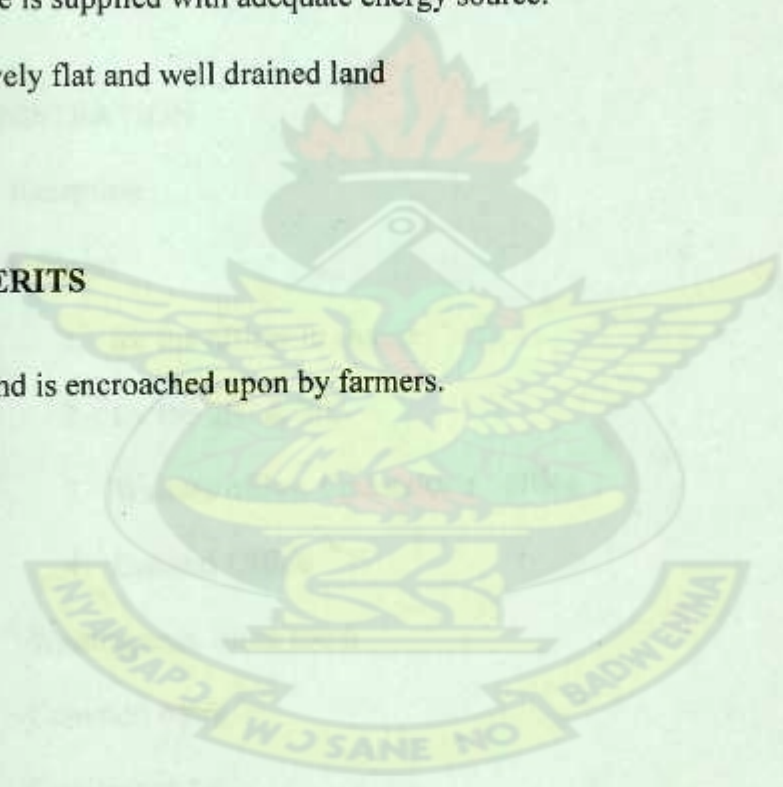


#### 4.5.1 MERITS

- Adequate land for construction and expansion
- Large stretch of unused land bounding the site could be cultivated to supplement the ration of inmates
- Large stretch of clay deposits on the southern side of site serves as a ready source of raw material for the clay industry to be located in the facility.
- The site is close to the main road linking Ho and Aflao hence easily accessible.
- The site is supplied with adequate energy source.
- Relatively flat and well drained land

#### 4.5.2 DEMERITS

- The land is encroached upon by farmers.



## **CHAPTER FIVE**

### **5.0 PLANNING AND DESIGN**

#### **5.1 DESIGN BRIEF**

The client's brief coupled with the researches undertaken have informed the development of this brief.

- **ADMINISTRATION**

- Reception
- Offices;
  1. for the officer in charge
  2. for the 2IC & 3IC
  3. Welfare office, Counselor's office
  4. General Office
- Waiting area, Store room
- Common room
- Conference hall

- **INMATES' ADMISSIONS**

- Intake and Booking
- Examination room



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- Common room
- Conference hall

- **INMATES' ADMISSIONS**

- Intake and Booking
- Examination room

- Inmates' property stack room
- General cleansing area
- Barbering, washrooms
- Clothing, bedding and room allocation
- Fingerprint and photo unit

- INMATE ACCOMODATION

- Cells; single and double occupancy
- In-built toilet and shower
- Laundry area for each housing unit
- Dining hall
- Gym
- Recreational area
- Officers lodge
- Television room
- Telephone exchange area

- WORKSHOP/ INDUSTRY

- Pottery, Ceramics, Textiles, Sewing, Carpentry, Kente Weaving, Electronics,  
Masonry
- Changing rooms
- Work space



- Washrooms
- Instructor's office
- Officer's area
- EDUCATION UNIT
  - Classrooms (Four Numbers)
  - Computer laboratory
  - Library
  - Reading area
  - Enquiry desk
  - Store room
  - Reference section

- RELIGIOUS

Chapel

- Minister's office
- Washrooms
- Store room

Mosque

- Washrooms
- Imam's office
- Store room

- INFIRMARY

- Reception
- Waiting area
- O. P. D
- Consulting rooms
- Dispensary
- Wards
- Washrooms
- Laboratory

- KITCHEN

- Kitchen/ pantry
- Matron's office
- Changing rooms
- Outdoor cooking area
- Store rooms
- Corn mill
- Fuel store

- RECREATION

- Football field
- Basket ball court



- Lawn Tennis
- Volley Ball Court
- Indoor games room

- VISITORS

- reception
- Waiting Lounge
- Interaction area

- STAFF ACCOMODATION

- Two Bedrooms semi-detached flats

- STAFF RECREATIONAL AREA

- OPEN SPACES

- COMMERCIAL AREA

- Shops
- Telephone exchange
- Internet café

- **ANCILLARIES**

- Visitors' car park
- Service parking
- Staff car park
- Sewage treatment plant
- Water treatment plant

KNUST





## 5.2 ACCOMODATION SCHEDULE

### ADMINISTRATION

SPACE	QUANTITY	AREA (SQUARE METERS)
Foyer	1	24
Reception	1	15
Store	1	15
Property stack room	1	24
Intake/ release office	1	12
Finger print/ photo studio	1	22
Examination room	1	10
Waiting area	2	30
Vehicle sally port	1	38
Outdoor visiting area	1	98
Visiting room	1	80
Staff lounge	1	46
General office	1	15
Office of the third in command	1	15
Armoury	1	24
Visitors' waiting room	1	30
Shower	2	3.5
Toilet	12	36

Waiting area	2	30
Control room	1	22
Secretary's office	1	15
Office of the Second in command	1	15
Welfare office	1	15
Accounts Office	1	15
Accountant's office	1	15
Office of the P.R.O	1	10
Office of the officer in charge	1	22
Conference room	1	34

#### EDUCATION UNIT

Class rooms	4	150
Security/CCTV room	1	8
Sanitary	4	32
Library	1	88
Librarian's office	1	8
Office	1	8
Computer laboratory	1	64



## HOUSING UNIT

### SUPPORTING BLOCK

Entrance foyer	1	25
Officers' lodge/ lounge	1	38
Store	1	10
Saloon	1	10
Laundry	1	18
Mending/ ironing room	1	18
Gym	1	32
Television/ indoor games room	1	85
Reading room	1	25
CCTV/ security room	1	10
Counselor's office	1	10
Office of the officer in charge	1	15
Inmates' toilet	4	10
Staff toilet	3	8
Waiting area	1	8

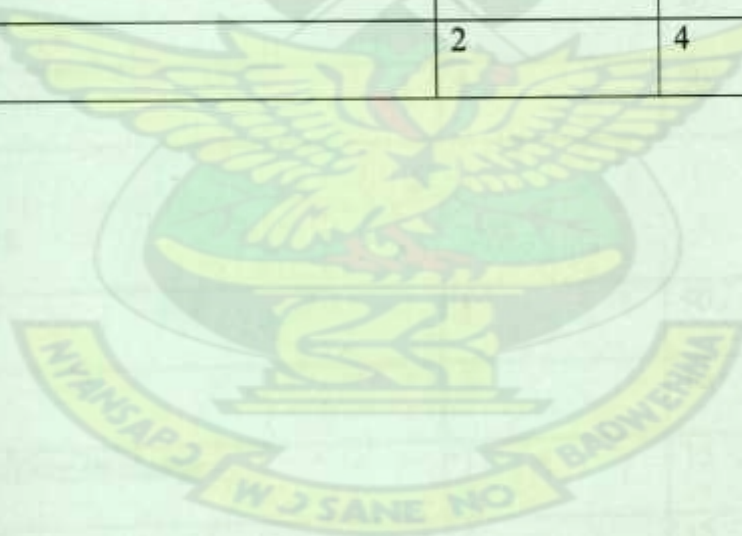
### DINING BLOCK

Dining hall	1	500
Store	1	8
Washing area	1	18

Serving area	1	18
Office	1	8
Preparation area	1	4

#### CELL BLOCKS

Entrance foyer	1	8
Common room	2	25
Officers' station	1	8
General cell	24	360 (15 x 24)
Star class cell	8	144 (18 x 8)
Solitary cell	2	12 (6 x 2)
Staff toilet	2	4





## KITCHEN BLOCK

Kitchen	1	100
Dry store	2	35
Cold store	1	8
Matron's office	1	10
Serving area	1	14
Sanitary area	3	12
Dining space	1	90
Outdoor cooking space	1	45
Changing room	2	45
Grain mill	1	22
Barn	1	40
Yard	1	50

## WORKSHOPS

Entrance foyer	1	90
Reception	1	15
Office of the officer in charge	1	15
Security/ CCTV room	1	15
Office	1	15

### BLOCK I

Changing room	1	6
Staff lounge	1	20

Staff washroom	1	6
Inmate toilet	6	18
Electrical workshop	1	160
Computer hardware shop	1	160
Fashion design shop	1	160
Kente weaving shop	1	160
Store	4	160

BLOCK 2

Masonry shop	1	70
Furniture storage	1	160
Furniture industry	1	380
Changing room	1	6
Staff lounge	1	20
Staff washroom	1	6
Inmate toilet	6	18

BLOCK THREE

Changing room	1	6
Staff lounge	1	20
Staff washroom	1	6
Inmate toilet	6	18
Tie and dye industry	1	320
Store	6	140
Ceramic industry work space	1	220



Printing room	1	10
Drying room	1	40
Laboratory	1	12
Kiln	1	10

**BLOCK FOUR**

Production floor	2	540
Drying room	2	110
Quality control office	2	20
Store	4	40
Laboratory	2	20
Changing room	1	6
Staff lounge	1	20
Staff washroom	1	6
Inmate toilet	6	18

**OTHERS**

Packaging and store	1	90
kiln	2	45
Mosque	1	225

## INFIRMARY

OPD/ Reception	1	60
Records	1	8
Injection room	1	6
Consulting room	2	30
Waiting area	2	15
Dispensary	1	10
Preparation area	1	3
Store	1	4
Security/CCTV room	1	10
Staff lounge	1	14
Changing room	2	22
Wash room	2	16
Recovery ward	1	75
Side ward	2	20
Nurses' station	1	12
Laundry	1	5
Emergency treatment room	1	10



## MULTI-PURPOSE HALL

Auditorium	1	60
Gallery	1	8
Foyer	3	40
Chaplain's office	1	12
Security/CCTV room	1	6
Changing room	2	25
Washroom	6	30
Store	1	10

## ANCILLARIES

Guard tower	4	1104
Water treatment plant/ sub station	1	400
Electricity substation	1	300
Central sewer plant	1	900

### 5.3 DESIGN PHILOSOPHY

*"To assert in any case that a man must be absolutely cut off from society because he is absolutely evil amounts to saying that society is absolutely good and no-one in his right mind will believe this today."* - Albert Camus

*"In prison, those things withheld from and denied to the prisoner become precisely what he wants most of all."* - Eldridge Cleaver

Inferences from the above quotes suggest that inmates are supposed to return to society completely transformed and capable of fitting into society after serving their sentences which should be the main focus in their rehabilitation. Prisoners should come out of prison fully transformed and with employable skills. The philosophy therefore is ***"Refining to Integrate"***.

In this regard, the facility and a refinery are being juxtaposed. The crude oil sent to the refinery is completely refined or separated into its constituent elements and the resulting product becomes pure and suitable for use. With this same idea, inmates getting ready for release also need to fully refined to be ready to fit well into society. The key word here is integration hence a need to reconcile prison environment and the environment outside the prison (society).

### 5.4 DESIGN CONCEPTS

The key word under consideration here is integration hence the concept of my design is ***"RECONCILIATION"***; thus reconciling prison and "free environment".

This reconciliation process would be achieved by means of:



- Campus layout
- Supporting facilities to be easily accessible by the public
- Recreation and work/training for income generation
- Sustainable environment

## 5.5 CONCEPTUAL SITE PLANNING

The conceptual layout arises from a careful analysis and consideration of the relationships between facilities. The size, shape and contours and the design philosophy had also influence the design.



### 5.5.1 SITE PLANNING OPTION 1

This option divides the site into north and south portions. The northern portion provides accommodation for staff, basic school for children of the staff, commercial and a recreational area for staff. The southern portion contains the housing units surrounding a support building. The administration block lies in front of this housing units and is surrounded by open spaces which could be used for agricultural purposes. The main access to the facility is from the eastern side of the site.

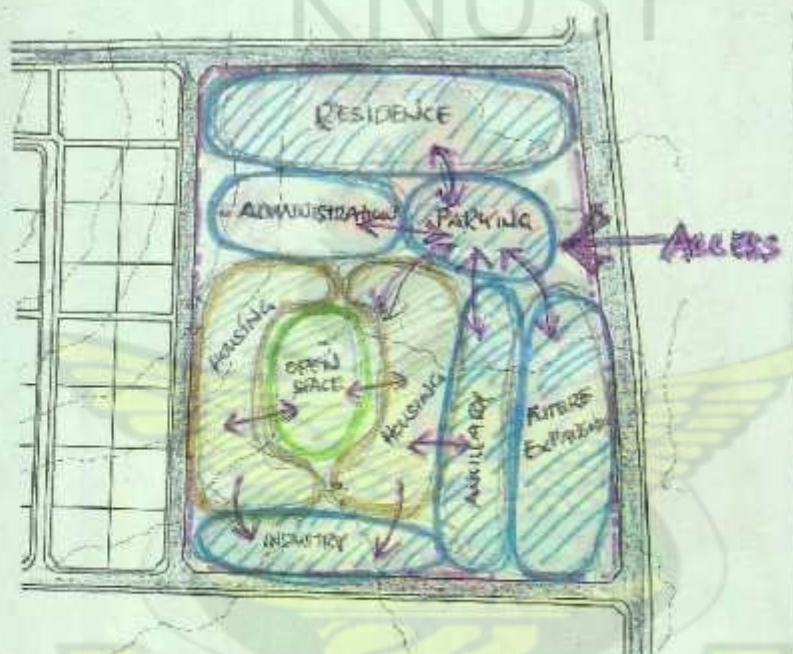


Figure 5.1 Site planning option I



### 5.5.2 SITE PLANNING OPTION II

This option tries to blend some staff and inmate facilities to an extent. There is a main entry point from the southern part of the site. The staff accommodation area is encountered upon entry into the facility. Other supporting facilities are placed along the main road. The inmate housing units are located further up after the administration block. The service areas are placed on the eastern side of the site. The work shops and farmlands are placed further north

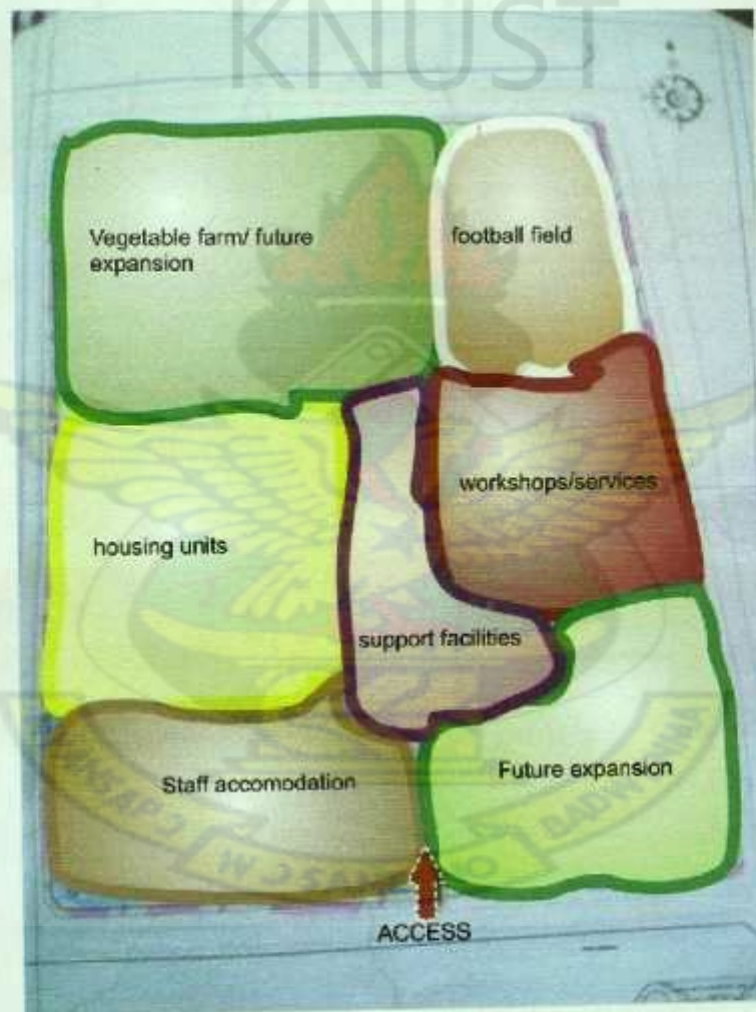


Figure 5.2 Site planning option II

# 5.6 FUNCTIONAL RELATIONSHIP DIAGRAM





## **5.7 THE DESIGN**

With the philosophy and concepts of the design as a scepter, the design of the facility has been made to deviate from the traditional prison designs and bring a new revolution in future correctional facility designs. The second conceptual site planning option has been selected and developed.

### **5.7.1 SITE PLANNING AND LAYOUT**

The layout of the facility has been influenced greatly by the contours and the cardinal points. The orientation of the buildings and inter-relation between the various facilities has also influenced the layout. For effective functioning the entire facility has been zoned and connected by two loop road networks. This is secured by the perimeter fence which encloses the whole site.

The main entrance to the facility is from the southern portion of the site. This is through a gate lodge for necessary security checks before access is granted. From the gate lodge to the left is a commercial area. This is intended to accommodate shops, internet café, and some indoor recreational activities.

The left branch from the roundabout encountered as you move northwards leads to the residence of junior prisons officers. Along this road and at the lowest point of the site is located a central sewer plant to which effluent and waste water from all the buildings in the facility are connected to. The wastes are then channeled further down to a proposed sewage treatment plant outside the main facility.

The branch to the right leads to the superior officers' residence. Access to the workshops is also from this right branch.

The infirmary is located on the left side of the road straight after the runabout to permit easy access by all inhabitants of the facility and also for easy transferring of patients during emergencies.

The administration block and the education block are located to the right of the road. The religious sections are also positioned to the left of the road opposite the infirmary.

The inmate housing units are positioned on the left side of the road as you move further up. There is central kitchen that serves the housing units and is also located on the left side of this road.

To the East the housing units and across the road is the workshops which is accessed by the public through the right branch road at the roundabout. The electrical substation and standby generators and the central refuse collection point are located on the south eastern part of the workshop.

Coupled with the rainwater harvesting system to be included in the design of the respective buildings is the location of a water treatment plant which will provide main source of water to the facility. This located in opposite the workshops.

The football field is located to the north of the workshop and a vegetable farm is to the west of the football field. Future extensions to the facility could be in this direction.



### 5.7.2 ADMINISTRATION BLOCK

This is a two storey block and serves as the seat of management of the facility. The main entrance on the ground floor opens into a foyer which serves as a point of interaction among officers and members of the public. On the left of the foyer is the reception accessed from the corridor. To the right are the visitors' waiting room and their washrooms on the extreme right. Opposite the visitors' waiting room are a general office and the office of the third officer in charge of the facility.

Prisoners being brought to the facility are taken through a vehicle sally port on the left of the block. The necessary processing is done in the in-take/ release room while the wide corridor is used as waiting area for the prisoners. Adjacent to the reception is a store for the administration with the inmates' property stack room located beside it. An examination/ strip search room and a photo studio/ fingerprint room are adjacent to the vehicle sally port. There is also a washroom for inmates located beside the examination room.

Beside the office of the third officer in charge is the armoury. The staff lounge overlooks a visiting room and is separated from the armoury by washrooms. There is also another open area to the left of the staff lounge which serves for an open visitation area.

The courtyard created by the U-shaped administration block could also be used for outdoor visitation.

From the foyer the access to the visiting room is by means of controlled entrance with metal detection equipment.



On the first floor, is the office of the officer in charge of the whole facility and a conference room adjacent it. The secretary's office and a waiting area precede these. Upon landing, the office of the second in command, the public relations officer the accounts officer, and the accounts office are located on the left. Opposite these are the welfare office, budget and planning office and washrooms for staff. To the right after landing is the central control room which coordinates all the Closed Circuit Television cameras within the facility.

### **5.7.3 EDUCATION BLOCK**

This is a two storey L-shaped building. The ground contains four classrooms and a security CCTV room. A library and a computer laboratory with an office are located on the first floor. Washrooms for both prisoners and other officers are on both floors.

### **5.7.4 HOUSING UNITS**

The housing units have been designed as self contained units and to be able to function independent of other facilities. A housing unit consists of four blocks enclosing a courtyard. Two cell blocks are located opposite each other and a dining hall which is also located opposite a supporting block. This has been designed to accommodate at least 250 inmates.

Entry into the housing unit is through a foyer at the supporting block. The ground floor of this block contains an officers' lodge and lounge, a store, a saloon, a gym, a laundry, ironing and mending room and washrooms. A straight flight stair located in the foyer connects to the upper floor. The first floor has the TV room and an indoor games room, reading room, CCTV room for



the housing unit, welfare/counseling office, office for the officer in charge of the housing unit and a waiting area to these offices. A toilet is also located on this floor for the officers.

From this foyer, one can go into the courtyard which is to be used for out door games and drying of clothes and then straight into the dining hall. Food brought by trolleys from the central kitchen is taken to a serving area in the dining block. A store, preparation place, washing place and an office space for the officer in charge of food services in the housing unit are part of the dining block. The dining room space has a high volume and a barrel roof to depict an industrial sense.

Below the dining block is an underground water tank. This covers half of the dining block and 2,400mm in depth. Rain water harvested from the roofs are filtered and channeled to this tank. This is then pumped up into reservoirs on top of the cell blocks for bathing and flushing toilet, laundry, and any other use other than drinking.

The two cell blocks are located on both sides of the dining block, each of which is a two storey building with a courtyard within. The entrance of this block has detection equipment to prevent the smuggling of contraband into the cells by the inmates.

A solitary cell for inmates who misbehave is immediately on the left upon entry into the cell block and this is in a clear view from the officers' lodge. On the side of the officers' lodge is a common room for the ground floor inmates.

The cubicles for the regular inmates are located opposite each other to enclose a courtyard. Each cubicle has an in-built toilet and shower for use by four people. Opposite the officers' lodge on the far side are the cells for inmates who qualify to be among the star class classification by virtue of their good behaviour. To the right of the officers' lodge is a mirror image of the cells and the whole ground floor duplicated for the first floor.



### **5.7.5 KITCHEN/ CANTEEN**

This serves as the power house for the inmates as three meals a day are prepared here for their consumption. The main entry to the kitchen is through the yard. Vehicles with carrying food stuffs also enter into the yard for offloading. To the right of the courtyard is a barn for storing tubers of yam, grain mill, and changing rooms for kitchen staff. The office for the matron overlooks the yard to monitor whoever comes in or goes out through there. Two stores for dry storage and a cold store near the matron's office also serves as a check against pilfering.

The main kitchen space is accessed from three main areas: corridor from the stores, the verandah and from the outdoor cooking area. A serving area access from the kitchen opens into the canteen through a hatch. Washrooms are accessed from outside of the canteen. The canteen is accessed by the non-kitchen staff from the terrace on the left wing of the kitchen block.

### **5.7.6 WORKSHOPS**

As the spine for income generation the workshops have been design for training of inmates as well as for commercial production of services to the public. The workshops are made up of four main blocks with each block specialized for its function. The main entrance to the workshops is from the northern side. This brings one to foyer where there offices for the officer in charge of the workshop, security/CCTV room, reception and a place for logging-in and out by inmates who come for training or work.



Entrances to all the four blocks have metal detection equipment installed to prevent intake or taking out of any form of contraband. The staff lounge and changing rooms at the entrance to these blocks help in monitoring the inmates.

The first block to the right from the main entrance contains a computer hardware training shop with storage space and an electrical/electronic training shop with store. On the opposite side of this bay and separated by a courtyard lies a Kente weaving industry and fashion design workshop all with their respective storage spaces. Sanitary facilities for use of the inmates are at the opposite end of the staff lounge.

The other block to the left of the previous one has a showroom, a masonry training room for theory courses, a furniture industry and a furniture store for the industry.

Tie and dye and batik industry and ceramic industry are located within the second block on the right from the main entrance. The block opposite this contains the brick industry. In between these two blocks is a storage and packing space for the brick industry.

There is a gas fired kiln centrally located between the four blocks to fire the bricks for large scale production.

There is another entrance from the east of the facility and this is where vehicles bringing raw materials or taking finished products out of the workshops have access.

### **5.7.7 INFIRMARY**

The main access to the infirmary is from the northern side and opens into the waiting area of the O.P.D. The dispensary and the laboratory are to the right of the waiting area and to the left are the records' room and injection room.

A turn to the left on the corridor leads to two consulting rooms; the opposite side of which has a security/CCTV room, a staff lounge and washrooms for patients.

A courtyard separates the out patients' department from the in patients' department which has ten (10) beds for inmates. There is a nurses' station with view into the recovery wards. Two side wards have also been provided to cater for staff and their families.

An emergency treatment room is behind the nurses' station and is accessed from eastern side where a parking space has been provided for an ambulance. A store and a laundry space have been provided. A door from the laundry leads to the courtyard where washed clothes will be dried. There is also an access to the infirmary from the southern side for hospital staff.

### **5.7.8 MULTI-PURPOSE HALL**

The multi purpose hall has been design for use for general activities such as performances, entertainment and for church service. The main entrance is from the eastern foyer where one can climb to the gallery or go straight into the auditorium. Two doors from the foyer flanking a security/CCTV room lead to a corridor and then another door to the auditorium to create a sound lobby. Washrooms for both males and females could be accessed from this corridor. Access to the auditorium can also be from the foyer on the northern and southern side of the building.



On the western side of the building are male and female changing rooms. The chaplain's office is at the south western side and to the north western side are a store and a toilet for the disabled. The back stage is accessed from the auditorium or from the western foyers.

### **5.7.9 GUARD TOWERS**

There are four guard towers at the corners of the inmate zone. The ground floor has an officers' lodge which is the first line of defense for those in the upper guard room. The first floor to the fifth floor has bedsitters for officers on training. On the sixth floor is the security/ CCTV room which looks over the whole facility. All the CCTV rooms in the various buildings communicate with the ones on top of the guard tower. Above this room is a water reservoir which can store up to 120 cubic meters of water. Treated water from the water treatment plant is pumped to these reservoirs. The water is then distributed to the facility by gravity.

## **5.8 CONSTRUCTION TECHNOLOGY**

The construction techniques used in the facility was dependent the specific structure and its use.

### **5.8.1 STRUCTURE**

The main structural system to be used in the construction will be the post and beam system. Depending on the height and spans in question, the strengths of the elements are adjusted to achieve reliable results. Simple trusses and rafter and purlin systems dominated the roofing system

## **5.8.2 SUBSTRUCTURE**

Strip foundation with intermediate pad foundation will characterize the subtraction of all the buildings in the institution. Mass concrete floors will be used for most of the floors and reinforced concrete floors will be used in some of the workshops.

## **5.8.3 SUPERSTRUCTURE**

### **5.8.3a WALLS**

All the walls of the facility are with the exception of the housing units are built with bricks. The housing units are built with sandcrete blocks and then cladded with bricks. This is to take advantage of free supply of bricks from the brick industry in the institution and also give the institution a character.

### **5.8.3b ROOFS**

To harvest rain water, all the roofs have parapet walls around them. Combinations of gable, hip and barrel roofs have been used in the various blocks.

### **5.8.3c FENESTRATION**

The doors and windows of the buildings have been secured by the fixing of steel bars on the exterior. The housing units have a grill doors. The doors to the various cells are interconnected and operated from the officers' lodge. A specific cell door can also be opened and closed without affecting other doors. The housing unit windows are vertical pivoted windows made of tempered glass.



#### **5.8.4 FINISHES**

All walls will be given a fair face finish by the bricks used in building them. Various colours of the bricks will be inter-laid to break the monotony and create aesthetic pattern in the walls.

### **5.9 SERVICES**

#### **5.9.1 ELECTRICITY**

Electricity supply to the site will be by means of under ground cables. Power tapped from the main road reaches the substation where it is stepped down to the required wattage for use by the various facility. Standby generators, automatic change over switches, located at the substation also provides additional source of electricity. The distribution of energy to the various blocks will also be by means of underground cables.

#### **5.9.2 LIGHTING**

The design of the facilities was made bearing in mind the need to cut down energy consumption. The use of courtyards to obtain maximum surface area for day lighting cuts out the need for any supplementary artificial lighting in most of the facilities during the day. Some of the workshops however need artificial light to augment the day lighting. This is produced by means of fluorescent luminaries and incandescent spot lamps. Street lights will be provided along all streets and at appropriate intervals along the perimeter fence. Special lighting will also be provided on the guard towers. This will continually rotate to throw light on site to forestall any intrusion.

### **5.9.3 VENTILATION**

Natural ventilation will be achieved through the thorough use of the courtyard in most of the buildings. The north-south orientation of the buildings also put them in an excellent position for windows to receive prevailing winds on site.

Mechanical ventilation will however be used in some of the spaces. This will be by means of ceiling fans and split air condition systems. The extractor hood over the fire stove in the kitchen will have extractor fans installed in it.

### **5.9.4 WATER SUPPLY**

Water tapped from main lines along the Ho-Aflao high way will be reach the water substation/ treatment plant. The distribution to the various facilities is done from this substation. Bore holes will be provided to reduced the volume of water supplied from Ghana Water Company. Treated water from the bore holes at the treatment will be pumped to the water reservoirs on the guard tower. Rain water will also be harvested, filtered and stored in underground reservoirs for use in the housing units.

### **5.9.5 COMMUNICATION**

Communication between various departments will be through the use of land phones by Vodafone Ghana limited. Public address systems will also be located in each housing unit and on the guard towers and within the workshops to disseminate information when necessary. Radio phones and cell phones will also be used to communicate between officers. Another form of



communication system to be employed in the institution is the Private Automated Branch Exchange System (PABX).

#### **5.9.6 FIRE CONTROL**

Fire out break in the facility will be controlled by means of fire extinguishers place at vantage points within the facilities. The kitchen and the workshops however have sprinklers to trigger the water to flow when temperatures are threateningly high. Fire hydrants located at vantage points on the site will also help in the control of fire.

#### **5.9.7 DRAINAGE**

Surface water will be channeled into drains along the roads and them into public drains.

#### **5.9.8 WASTE MANAGEMENT**

Soil waste from all the facilities will be channeled to the central sewage plant which is at the lowest point of the site. Liquid waste from kitchen and washrooms will also be channeled to this place for treatment and re-use or for disposal into public drains.

Refuse collection bins will be place at vantage points within the various facilities where they will be emptied by refuse tracks at regular intervals.

### 5.9.9 GAS

Gas will be supplied by tracks which come to site to fill the gas cylinder which is located beside the workshop. Connections to the kitchen and to the workshop and kilns will be done underground.

### 5.9.10 SECURITY

The design of the whole facility is centered on security hence a wide range of items were taken into consideration in the decision making process.

The chain link external perimeter fence is three meters high with razor wire fencing at the top. This is connected to electricity of 110volts. The internal perimeter wall is five meters high and also connected to electricity with razor wire fencing on top of it. Special alarms and vibration detection systems are connected to the fences. In order to prevent escape attempt by digging, special motion sensors will be located underground around the perimeter fence. Spikes which are hidden underground are located between the two perimeter fences which are three meters apart. These spikes automatically spring up when motion is detected by their sensors. CCTV cameras are also located on the perimeter fences in order to provide a constant surveillance of the facility.

The fencing separating the inmate zone from the "free" zone is 5 meters wide and 1.5 meters high. This creates a physical barrier but does not give a feel of absolute segregation between inmates and officers. Steel bars in the housing units provide inhibition against escape. The glass used for the windows are tempered glass will not break easily. They shatter even when broken preventing inmates from using the pieces as weapons as in the case of glasses that splinter. Tear



gas pores are provided within all public spaces where there is the tendency of inmates revolting. The 24 hours' security watch provided by the guard tower also serves as a security measure. The glass for the windows here are bullet proofed. All the toilets for use by inmates have the cisterns in a duct that is accessed from outside the toilet space. This is to prevent the inmates from taking installations of the cistern and using them as weapons.

The facilities have been designed such that doors to various sections could be shut to control inmates within that section and prevent riots from escalating.

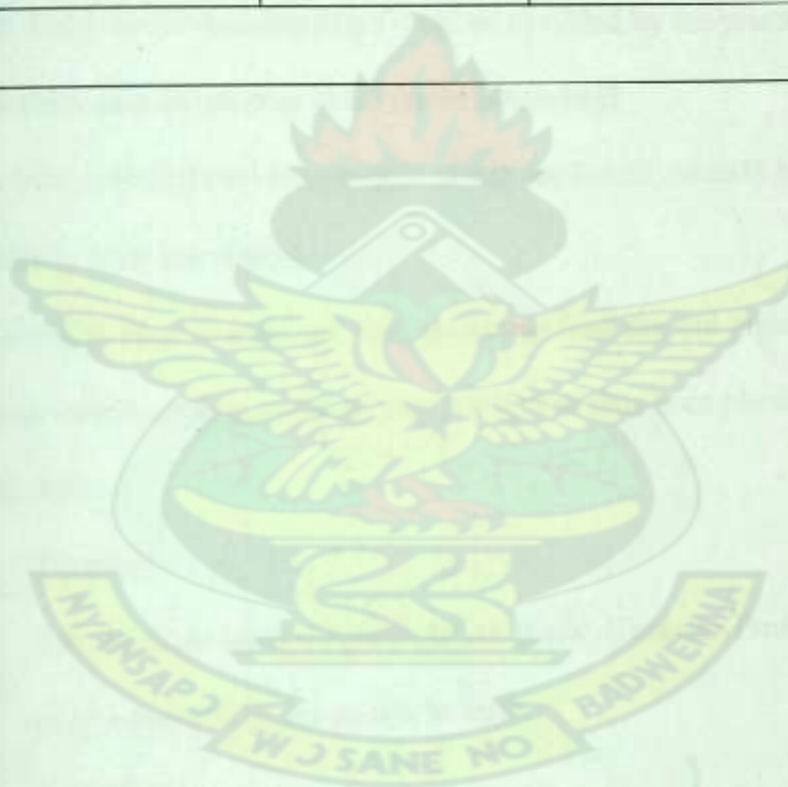
Metal detection equipment placed at the various entry points will also guard against the possession of any form unauthorized equipment.

## 5.10 COSTING

Approximate estimation method was used in calculating the cost of the project. Current market rates of GH¢340 per square meter was used for the calculation. The total cost of the construction will give the client a fair idea of the financial implications of the investment. The table below shows the cost of the project:

Facility	Total Area (m <sup>2</sup> )	Area x Cost per Unit Area	Total Cost GH ¢
Administration block	1085	1085 x 300	325,500
Education Block	540	540 x 300	162,000
Housing Unit	3882	3882 x 300 x 4 units	4,658,400
Kitchen block	560	560 x 300	168,000

Workshops	5684	5684 x 300	1,705,200
Infirmery	518	518 x 300	155,400
Multi-purpose Hall	960	960 x 300	288,000
Staff Accommodation	1912	1912 x 300 x 13 numbers	7,456,800
Guard Tower	276	276 x 300 x 4 numbers	331,200
Ancillaries	1200	1200 x 300	360,000
Mosque	225	225 x 300	67,500
Commercial area	1000	1000 x 300	300,000
Total			<b>15,978,000</b>





## 5.11 RECOMMENDATIONS AND CONCLUSION

### 5.11.1 RECOMMENDATIONS

After thoroughly reviewing literature of other authors and other researches undertaken for this project, it was realized that the provision of a correctional institution targeted at reforming inmates is necessary but this ought to be juxtaposed with the cost implications. In view of this the following recommendations have been put across to help implementing agencies in their bid to make this project a reality:

1. Labour force for the construction should be provided by the prisoners to reduced cost and enable them gain experience in the construction field.
2. The active participation of the people within the locality should be encouraged since they will benefit from the project.
3. The financial implications are very enormous and the out right construction of all the facilities will be an impossibility. The project has thus been phased to make it realistic for construction.

#### a. PHASE I

Two housing units, Administration block, Kitchen, Two blocks of the workshop and two guard towers should be built.

#### b. PHASE II

The infirmary, an additional housing unit and the other blocks of the workshop should be constructed.

#### c. PHASE III

The education block and three staff housing units should also be constructed.

d. PHASE IV

The fourth housing unit and the multi-purpose hall, the mosque and the remaining guard towers should be constructed.

e. PHASE V

Four other staff accommodation blocks should be constructed.

f. PHASE VI

Three of the staff accommodation blocks and the commercial center should be constructed

g. The rest of the staff accommodation blocks should be constructed.

4. Future expansion of this facility should be made when proceeds of the industry begin to flourish.
5. To forestall the complete breakdown in facilities, regular maintenance of equipment and buildings should be giving the necessary attention.

### 5.11.2 CONCLUSION

The complete reformation of inmates could be achieved if they are housed in humane environments and trained in a bid to prepare them adequately for life outside prison. The commercialization of their activities in these workshops will generate income for running the facility and cut down government budgetary allocation to the prisons service which is even inadequate. This also will provide some form starting capital for inmates hence reduce the likelihood of returning to prison. The eventual benefit will be the reduction in crime rates if not the complete eradication.



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KNUST

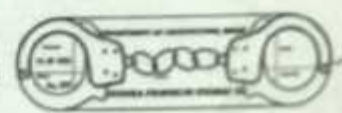






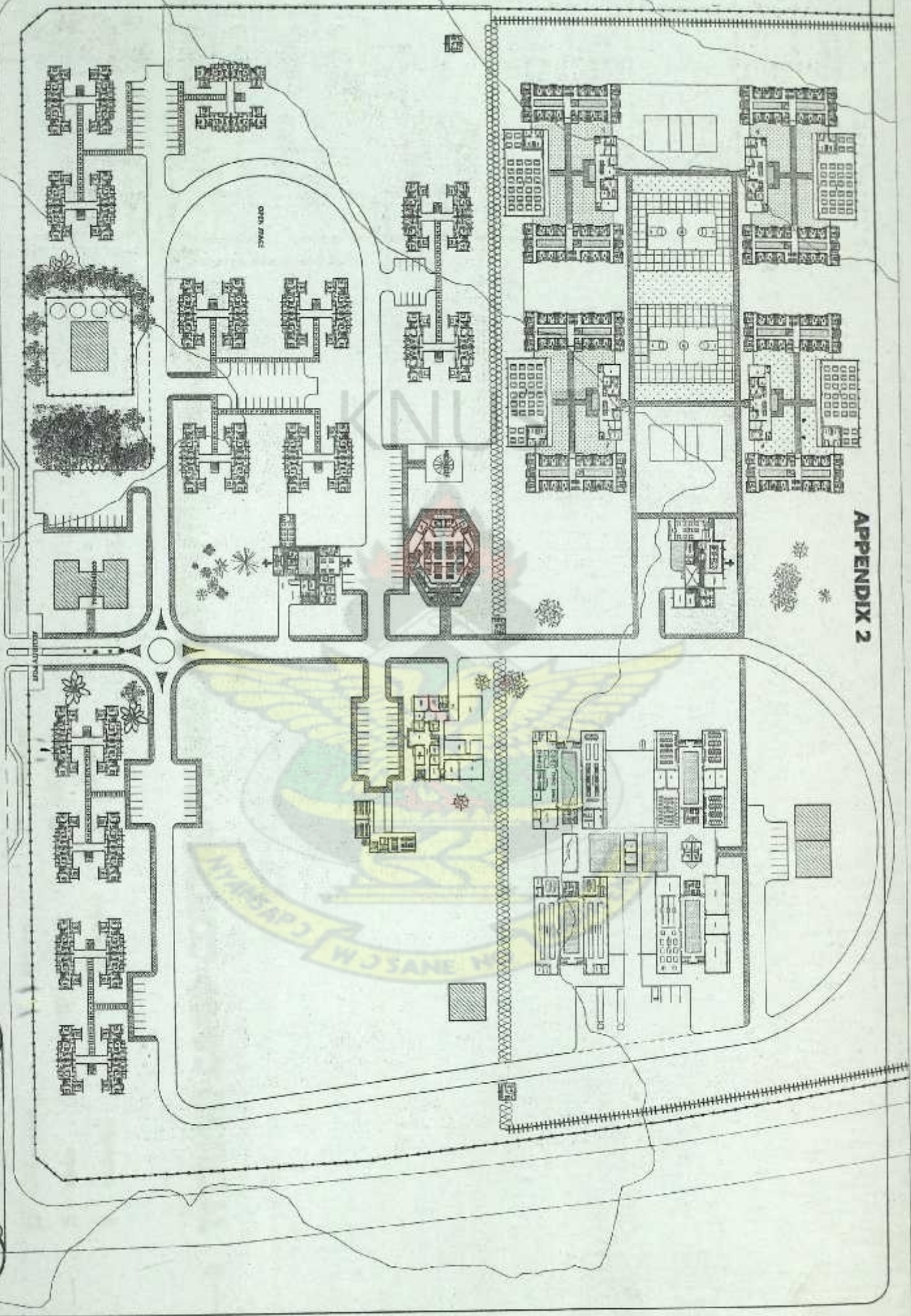
**LEGEND**

- |                               |                                 |   |   |
|-------------------------------|---------------------------------|---|---|
| <b>A</b> - Gate Lodge         | <b>G</b> - Administration Block | <b>M</b> - Kitchen/ Cafeteria               | <b>S</b> - Outdoor exhibition/therapy grounds |
| <b>B</b> - Commercial Center  | <b>H</b> - Multi-purpose hall   | <b>N</b> - Housing Hall                     | — — — — — Outer perimeter fence               |
| <b>C</b> - Staff residence    | <b>I</b> - Pools                | <b>O</b> - Water treatment plant/exhibition | ===== Inner perimeter fence                   |
| <b>D</b> - Central main plant | <b>J</b> - Watch tower          | <b>P</b> - Valley hall unit                 | See note below site                           |
| <b>E</b> - Infirmary          | <b>K</b> - Security Post        | <b>Q</b> - Isolated hall unit               |   |
| <b>F</b> - Education Block    | <b>L</b> - Workshop/Industry    | <b>R</b> - Isolated hall                    |   |

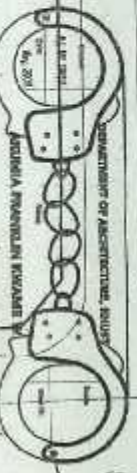




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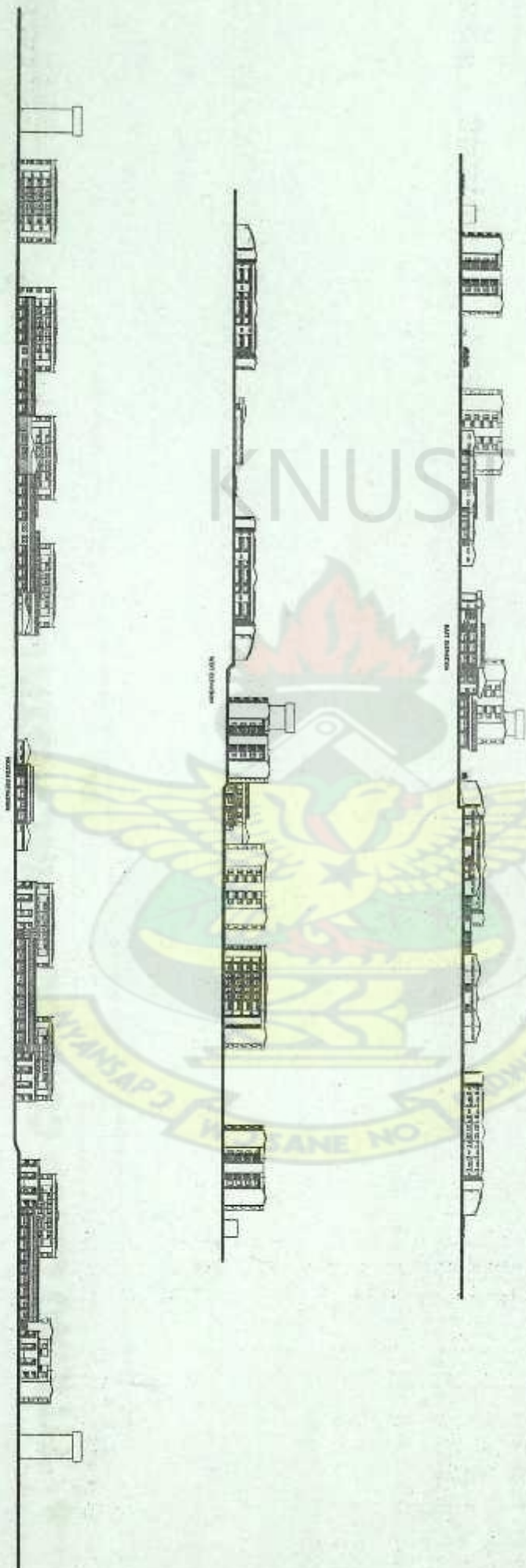


TARRANO CAMP CORRECTIONAL INSTITUTION DELTA REGION



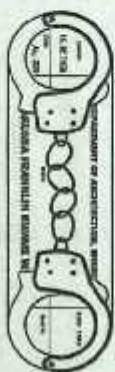


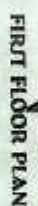
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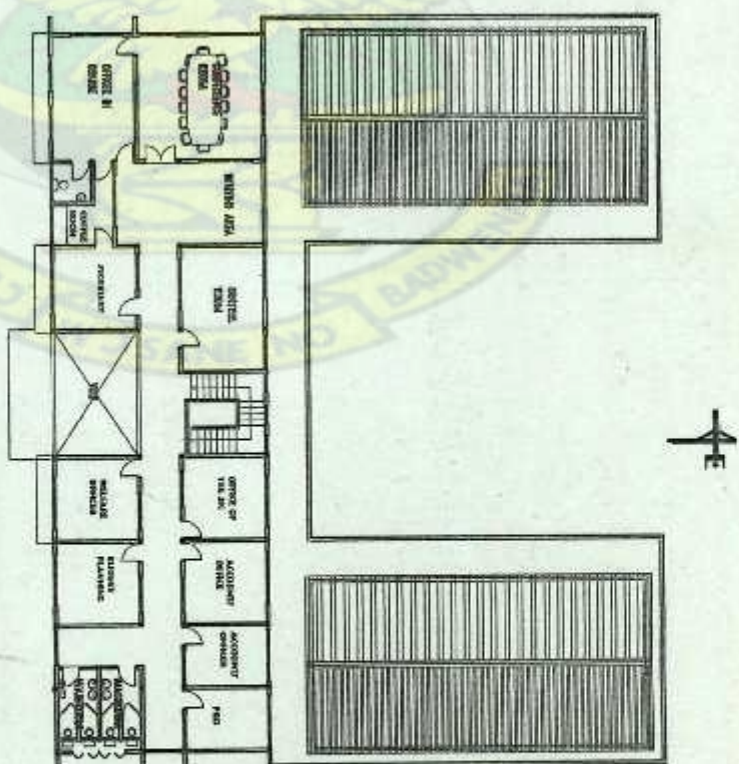
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**DELTA REGION**

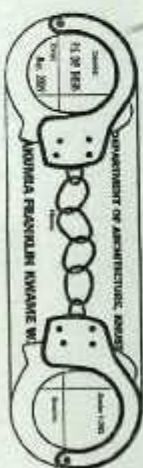




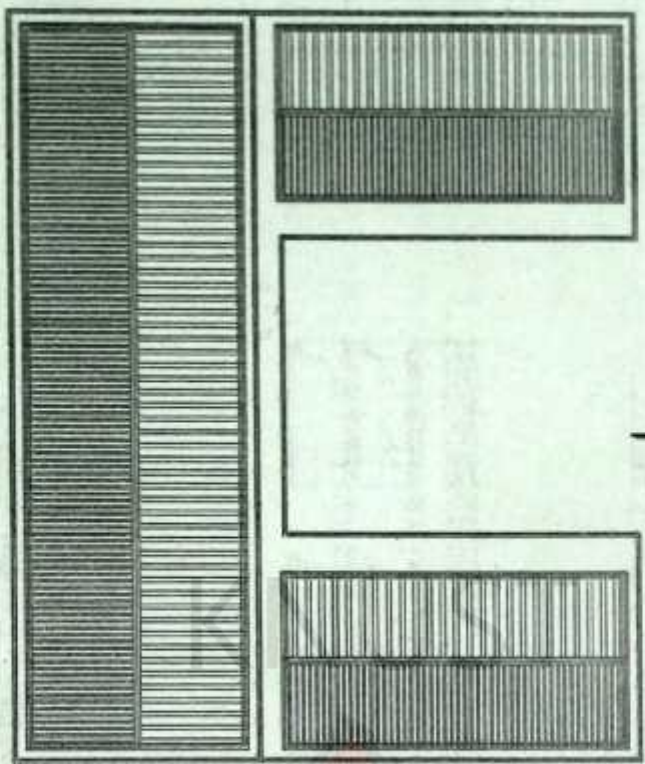
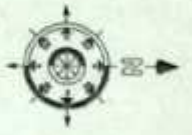
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**FIRST FLOOR PLAN**







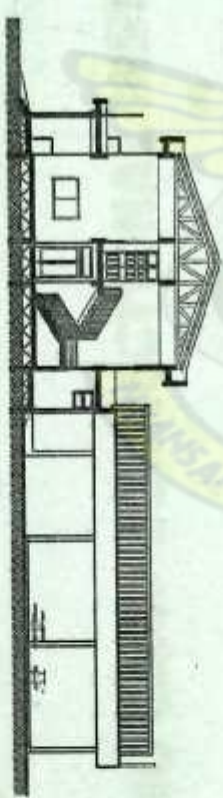
ROOF PLAN



EAST ELEVATION



SOUTH ELEVATION

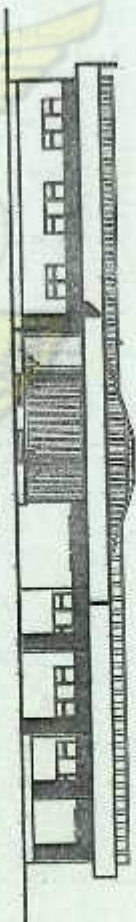


SECTION E-E

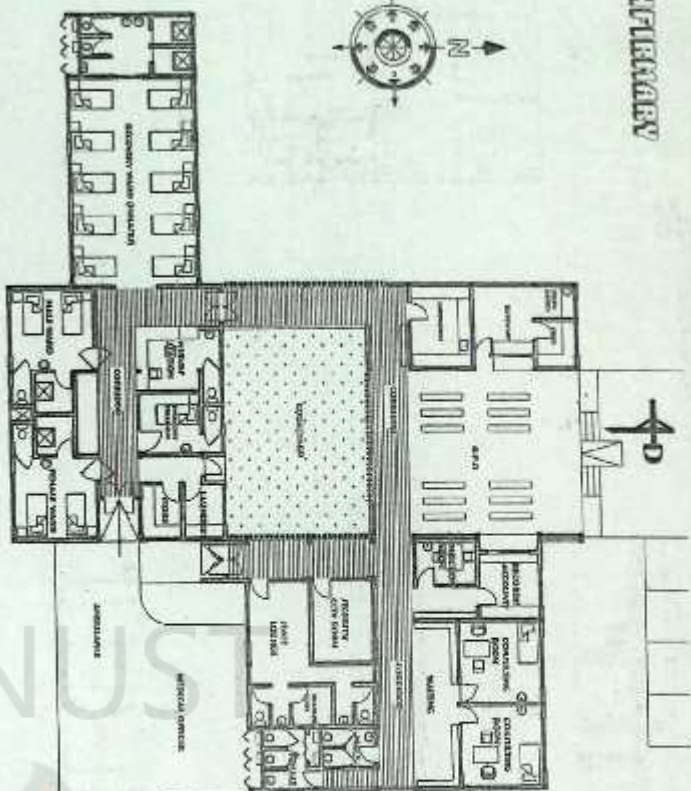




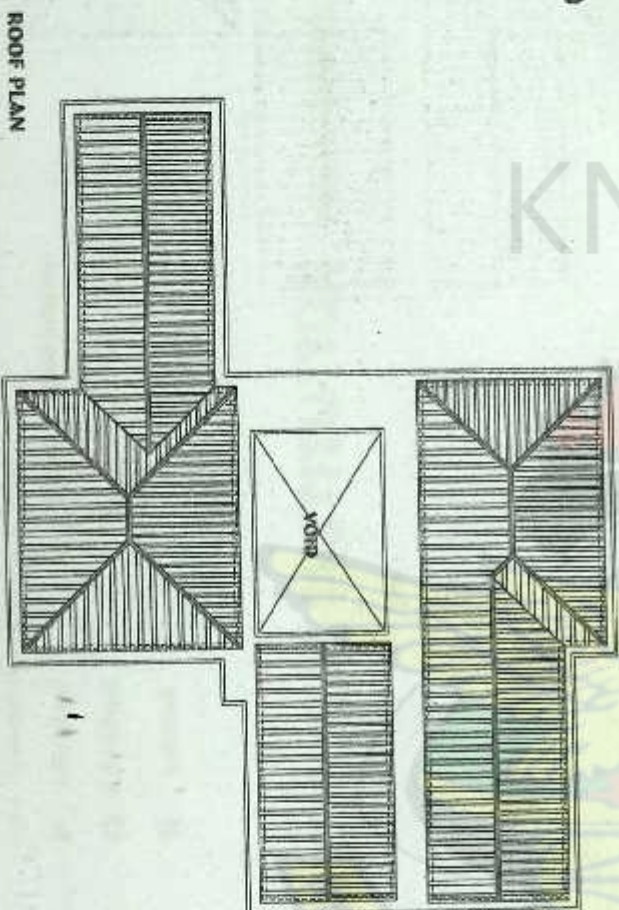
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NORTH ELEVATION



### GROUND FLOOR PLAN



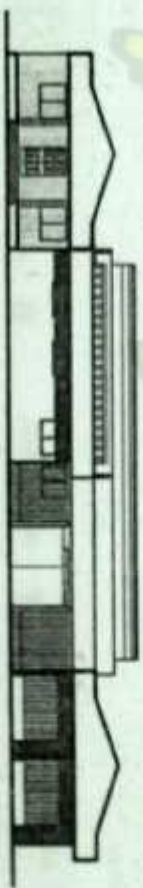
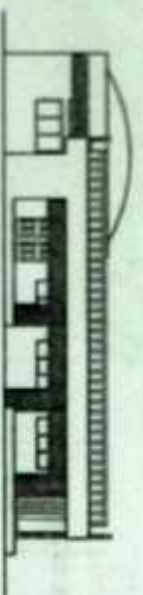
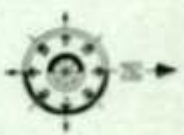
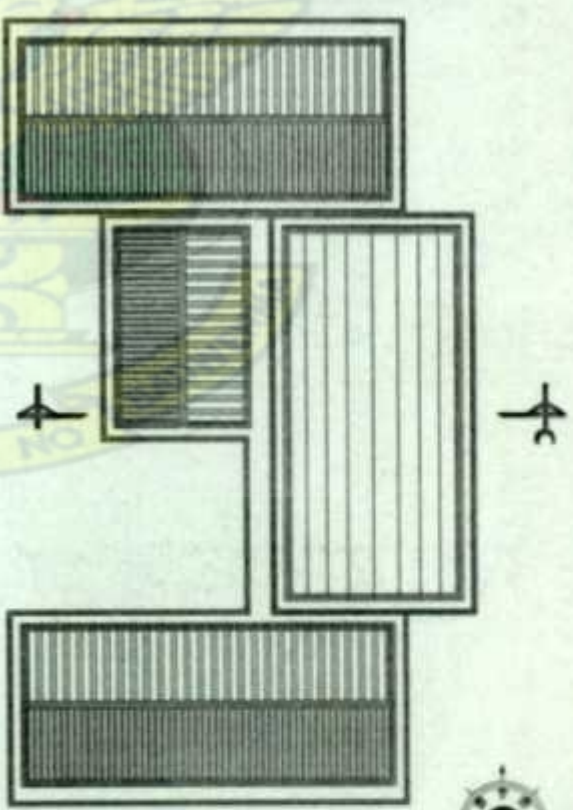
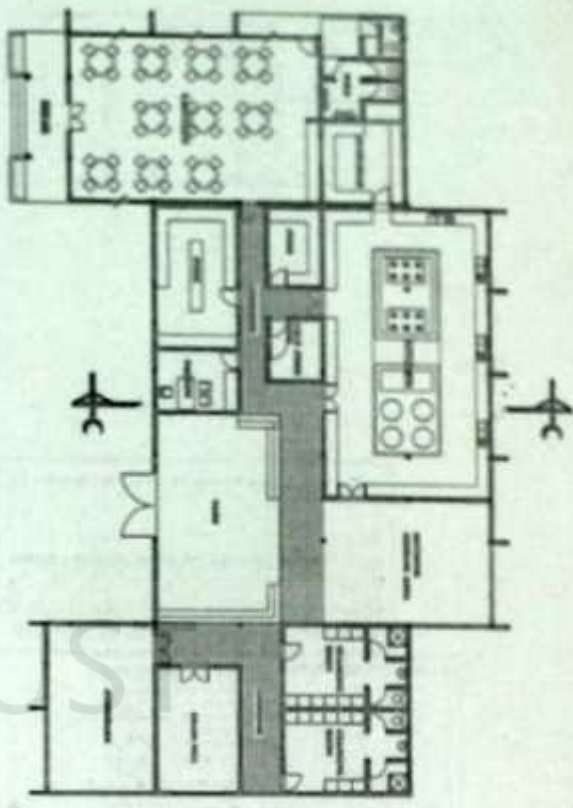
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SECTION D-D



# APPENDIX 7



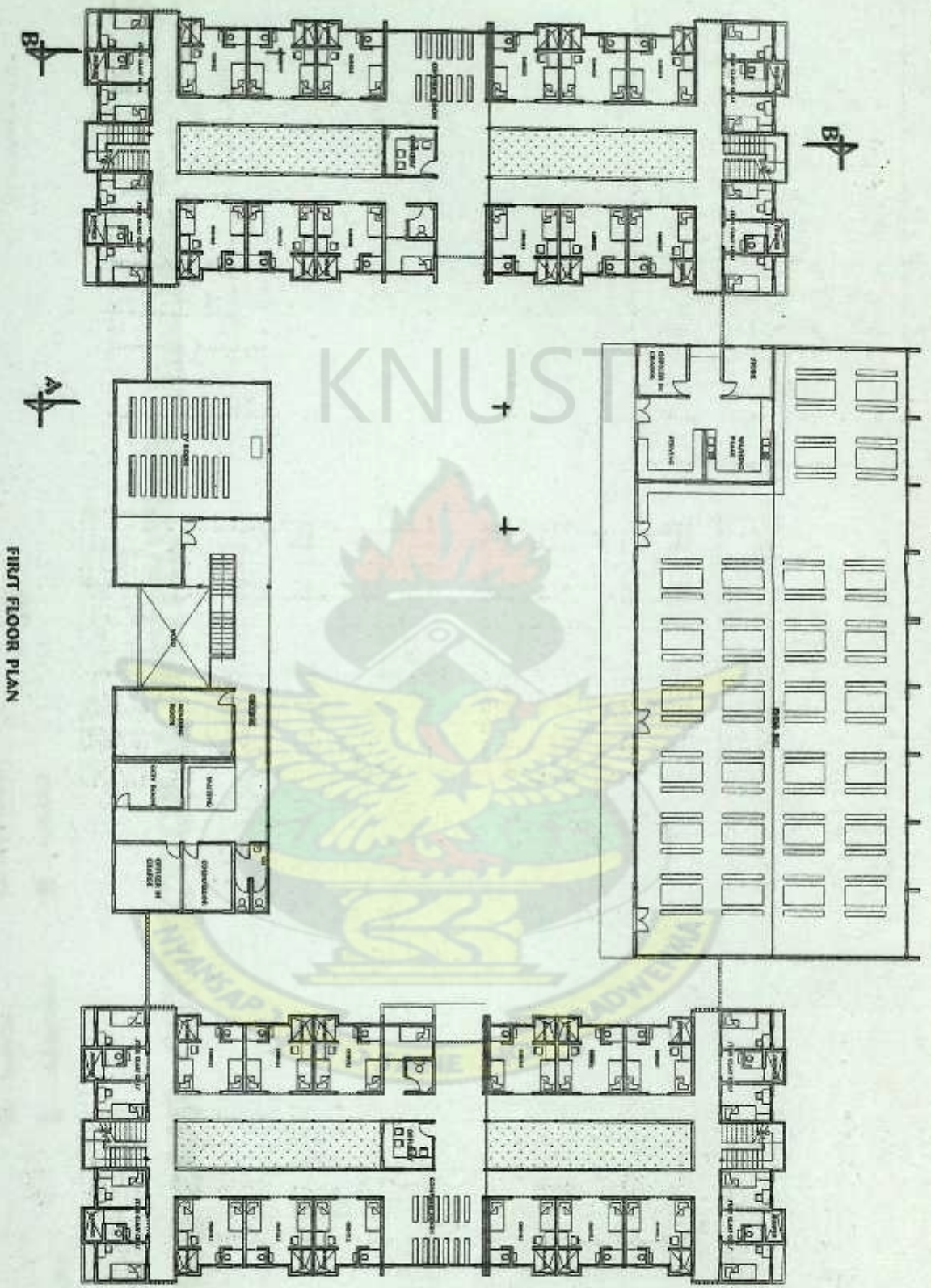




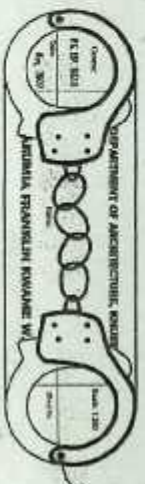
### GROUND FLOOR PLAN



APPENDIX 9

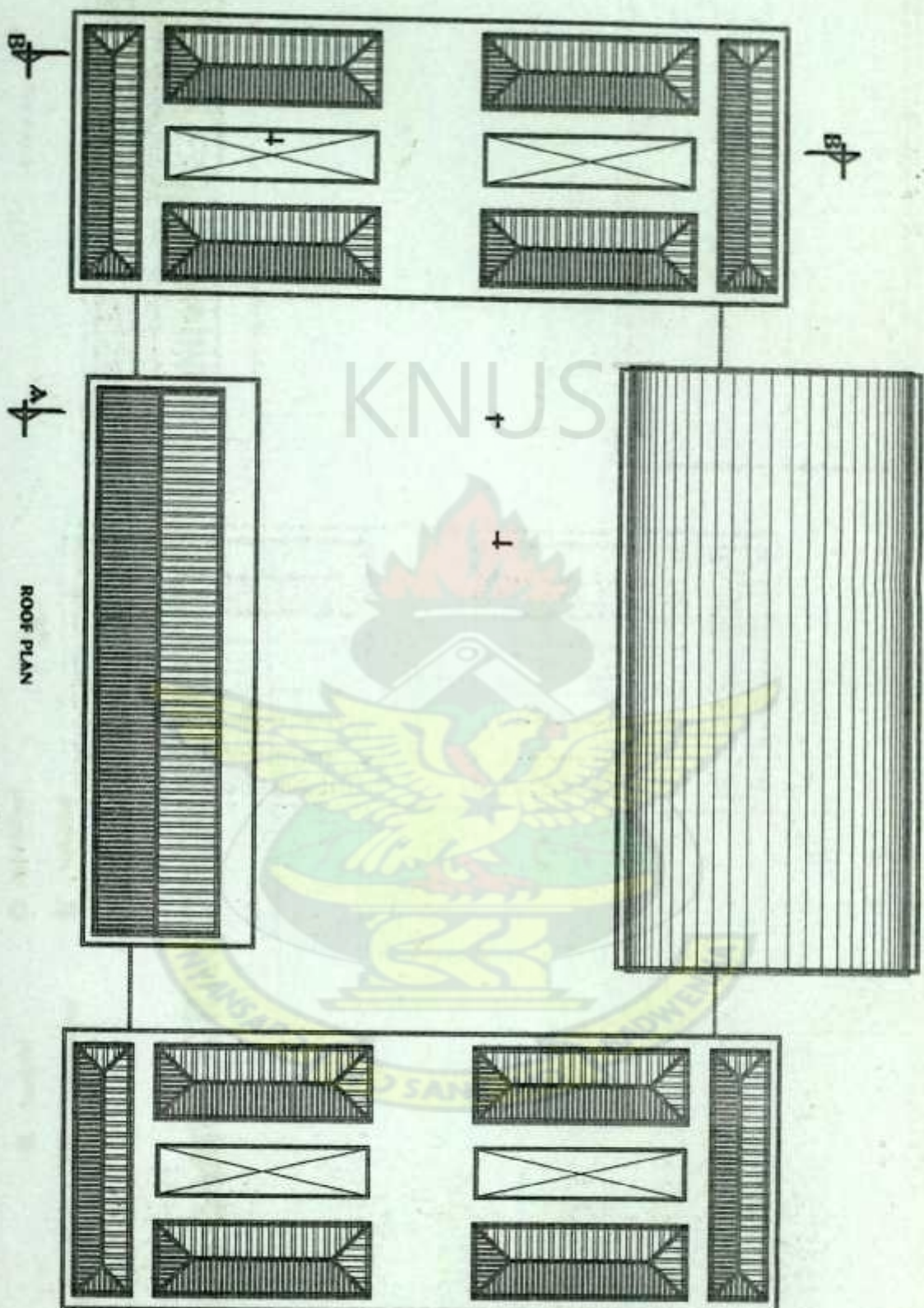


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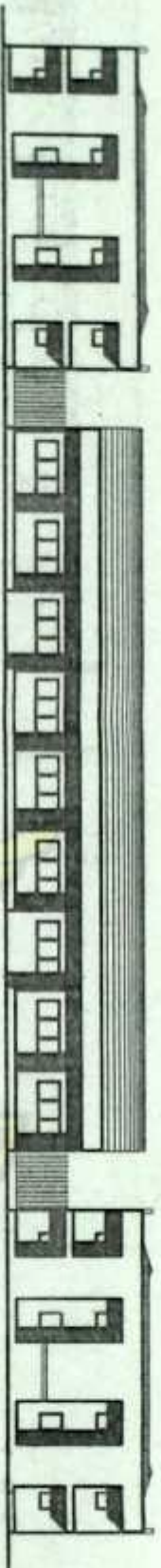




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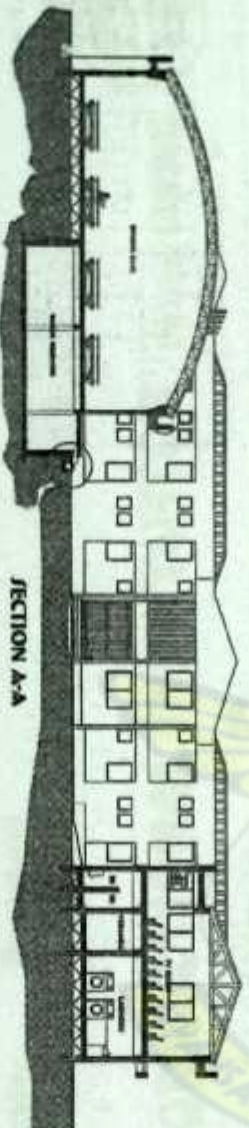




NORTH ELEVATION

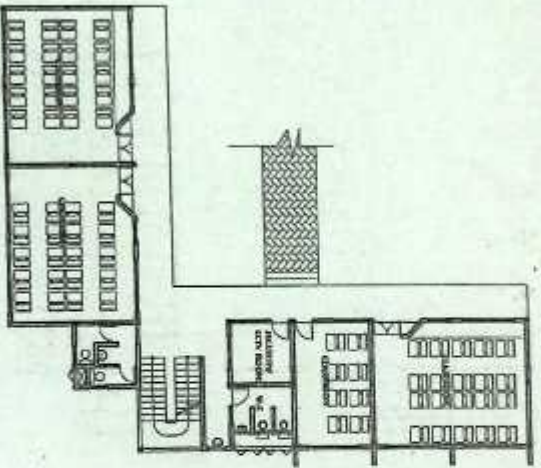
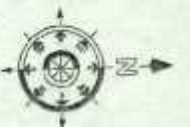


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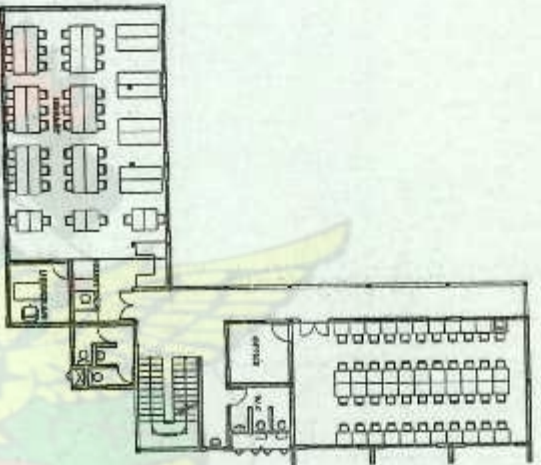


SECTION A-A

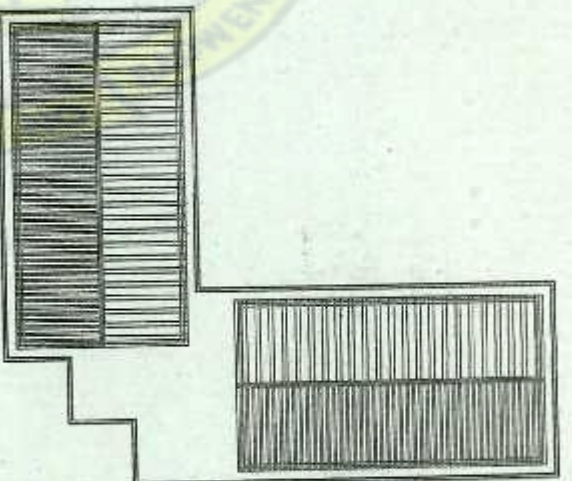




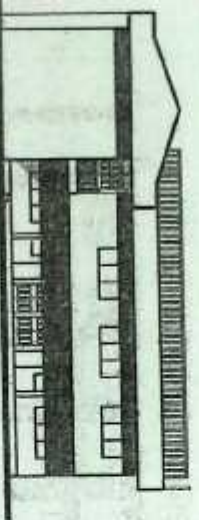
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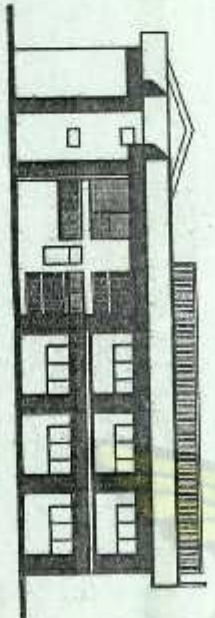
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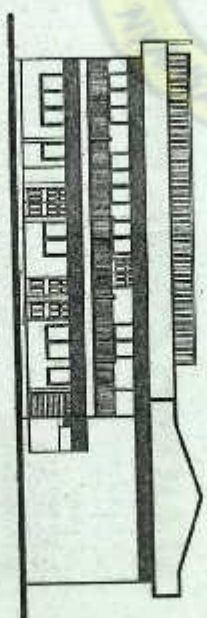
ROOF PLAN



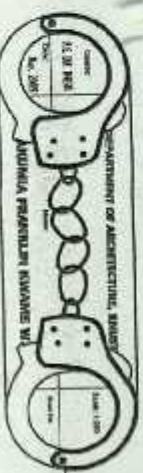
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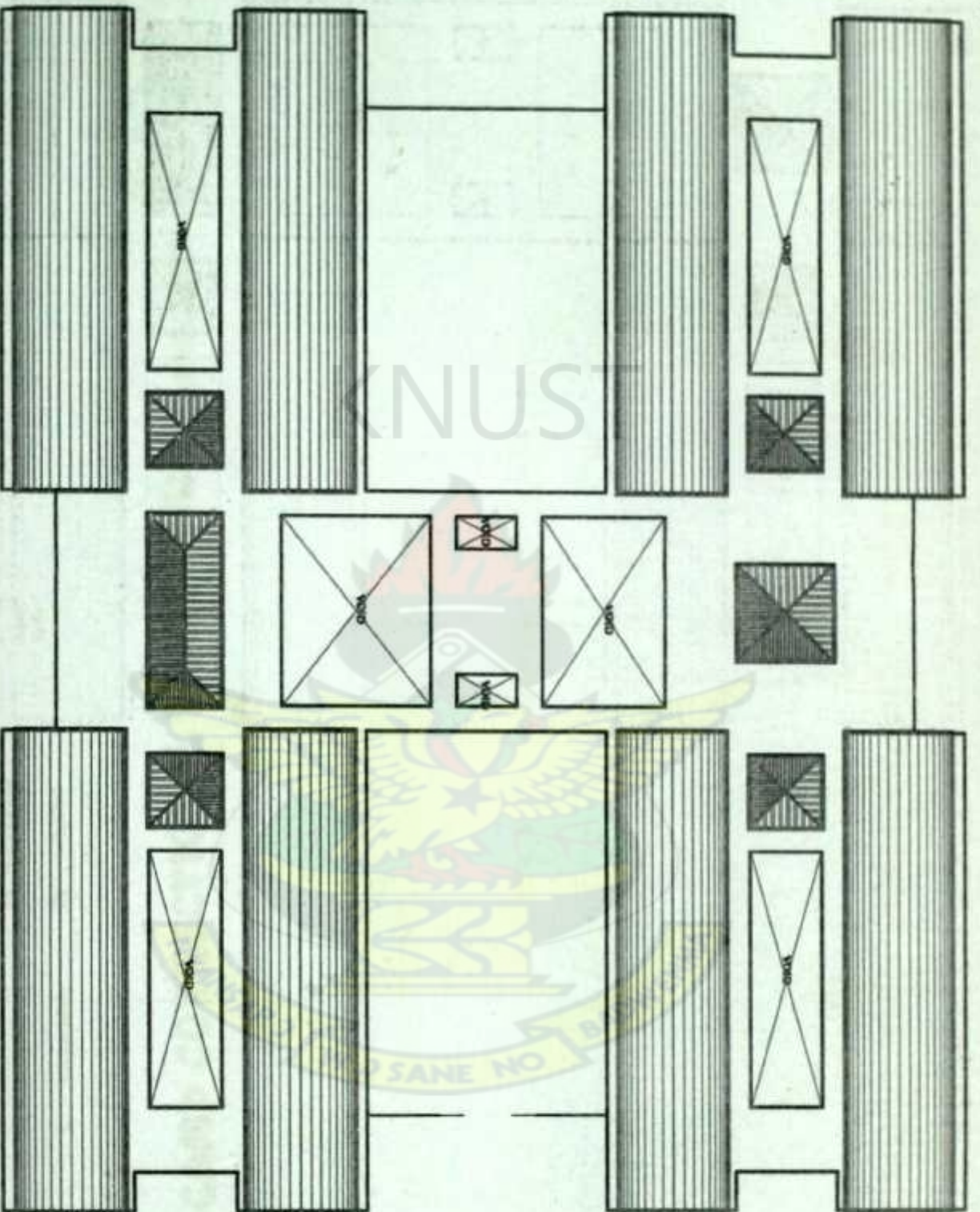




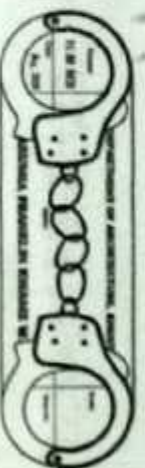
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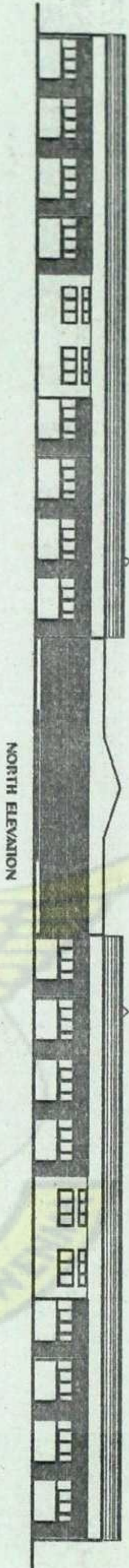


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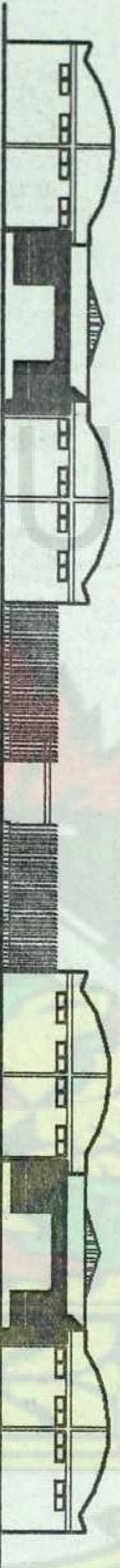




APPENDIX 15



NORTH ELEVATION



EAST ELEVATION



WEST ELEVATION

