

**UNIVERSITY OF EDUCATION, WINNEBA**  
**COLLEGE OF TECHNOLOGY EDUCATION, KUMASI**

**ASSESSMENT OF ILLUMINATION LEVELS OF PRISON**  
**ACCOMMODATION IN GHANA: A CASE STUDY OF NSAWAM AND**  
**KOFORIDUA PRISONS**



**JANUARY, 2023**

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**This Dissertation is submitted to the School of Graduate Studies, University of  
Education, Winneba-Kumasi, Department of Construction and Wood  
Technology in partial fulfillment of the requirement for Award of the Master of  
Philosophy Degree in Construction Technology**

**JANUARY, 2023**

## DECLARATION

I, **Michael Tetteh** declare that this thesis except for quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE:  .....

DATE: 4<sup>TH</sup> JAN., 2023 .....

## SUPERVISOR'S DECLARATION

I hereby declared that the preparation and presentation of this work was supervised by me following the guidelines for supervision of dissertations as laid down by the University of Education, Winneba.

SIGNATURE:  .....

DATE: 4<sup>TH</sup> JAN., 2023 .....

**PROF. PETER PAA- KOFI YALLEY**

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## DEDICATION

This work is dedicated to God Almighty and my lovely parents Mr. Francis Dugbanor Kumassey and Mrs. Florence Henrietta Kai Kumassey all of blessed memory.



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## ABBREVIATIONS

2CO <sup>s</sup>	Second Class Officers
ACO <sup>s</sup>	Assistant Chief Officers
ADPs	Assistant Directors of Prisons
AIVC	Air Infiltration and Ventilation Center
ASPs	Assistants Superintendents of Prisons
BRE	Building Research Establishment
BREEAM	Building Research Establishment Environmental Assessment Management
CCTV	Closed-Circuit Television
CEO	Chief Executive Officer
COs	Chief Officers
CPLs	Corporals
CPT	Committee for the Prevention of Torment
CSPs	Chief Superintendents of Prisons
DCA	Door Closed Afternoon
DCM	Door Closed Morning
DDGPs	Deputy Directors General of Prisons
DDPs	Director of Prisons
DF	Day Light Factor
DGP	Director-General of Prisons
DOA	Door Opened Afternoon
DOC	Department of Correction's
DOM	Door Opened Morning
DOPs	Directors of Prisons

DSPs	Deputy Superintendents of Prisons
GED	General Educational Development
HMPS	Her Majesty's Prison Service
IACHR	Inter-American Commission on Human Right
ICRC	International Committee of the Red Cross
KDCPA	Kampala Declaration on the Conditions of Prison in Africa
L/CPLs	Lance Corporals
NCoS	Nigerian Correctional Service
OICs	Officer in Charges
ROs	Recruit Officers
SCC	Senior Correctional Center
SCOs	Senior Chief Officers
SGTs	Sergeants
SMRs	Standard Minimum Rules
SPs	Superintendents
SRP	Special Rapporteur on Prisons
UNODC	United Nations Office on Drugs and Crime

## ABSTRACT

Globally, prisons serve as penitentiary institutions for persons who are convicted of crimes. As reformation centres, prisons are expected to provide, if not the best but at least basic comfort conditions for the inmates. Illumination of prisons is an important aspect in the design of prisons. Sadly, illumination levels of prisons, particularly those of developing countries like Ghana are abysmally poor. The aim of the study was to explore illumination levels of prison accommodation in Ghana and make recommendations for enhancing the illumination of the prisons. The specific objectives of the study included; to assess existing levels of illumination of prison accommodation in Ghana, to compare existing illumination levels of prison accommodation in Ghana with established standards of illumination of prisons, to determine strategies for improving the illumination of prison accommodation in Ghana, and to make recommendations for enhancing the illumination of prison accommodation in Ghana. Qualitative and experimental research methods were used to elicit information for the study. Sixty (60) participants from both Koforidua Prison and Nsawam Medium-Security were interviewed. A photometer was used to measure the luminance of the cubicles of the prisons for fourteen (14) days in the mornings and afternoons of the days considered. The findings of the study revealed that existing illumination levels in medium security prison accommodations in Ghana are poor (Day light factors are in the region of below 0.878%). Also, the prevailing illumination levels of the prisons fall below established standards of illumination of prison accommodation of 1.5%. The findings of the study revealed that the key strategies that could be implemented to improve illumination levels of the prison accommodations studied included; taking into consideration the orientation of prison accommodation in its design, providing an open court yard,

using translucent walling and ceiling technologies, and providing adequate artificial lighting of prison accommodation. In conclusion it has been established that Ghanaian prison cells has Day Light Factor (DF) below 0.9% less than 1.5% which is the World standard DF of a prison cell. Based on the stated findings and conclusion, the study recommends that all stakeholders especially the Government and Non-Government organizations should provide adequate resources to improve the illumination of prison accommodations.

#### KEYWORDS

Penitentiary

Illumination

Inmates

Accommodation

Qualitative

Participants

Interviewed

Photometer

Daylight Factor

Prevailing

Implemented

Orientation

Translucent

Technologies

Stakeholders

Government

Non-Government Organization



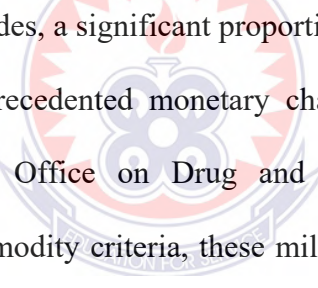


## CHAPTER ONE

### INTRODUCTION

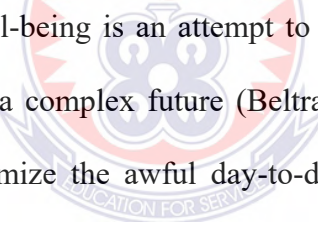
#### 1.1 Background of the Study

The other cold-blooded forms of figures, such as suspension, corporal and the death penalty, have been bit by little superseded by detainment in the past few hundred years. Crooks that are punished under either of these steps are generally guided by the purpose of reform and reconstruction to conform to the standards and expectations of the general population. It is not shocking, in these lines, that these correctional institutions are generally referred to, in contemporary speech, as restorative establishments (Ross and Muro, 2020).



Over as long as two decades, a significant proportion of sub-Saharan African nations have undergone an unprecedented monetary change of events and demographic growth (United Nation Office on Drug and Crime 'UNODC' 2018). As a consequence of the commodity criteria, these milestones have forced a few nations to maximize the usage of open structures and services to fulfil the demands of an enlarged community. Natural surroundings are defined as a satisfactory space with stability, accessibility, assistance, heating, ventilation and an appropriate structure at a fair cost (Bonney, 2007). The immediate building of the next door prevents the movement of contaminants trapped inside small buildings, which ultimately deteriorates air quality inside, creating adverse impacts on inhabitants (Carlet, 2015). Indoor Air Quality (IAQ) is the consistency of air inside and in the vicinity of the building and is characterized by the accumulation of contaminants and comfort parameters such as thermal (temperature and relative humidity) factors that influence the safety and efficiency of occupants (OSHA, 2011).

When constructing a comfortable space, the primary objective is to provide the inhabitants with a friendly microclimate. An individual has a nice microclimate if he/she thinks that the temperature, humidity and velocity of the surrounding air, as well as the air, is free from pollutants (<https://enviroliteracy.org/air-climate-weather/weather/humidity>). Ventilation transfers outdoor air to a house or space and distributes oxygen to a house or space (Awbi, 2003). The general aim of ventilation in buildings was to provide safe air for absorption by tainting and eliminating toxins from the structure (Awbi, 2003). Sunlight promotes the development of vitamin D (Edwards & Torcellini, 2002), activates the hormonal system (Wurtman, 1975) and integrates the body's biological cycles. The loss of sunlight penetration can lead to a progressive deterioration of the body (Braun, 2008).



The advancement of well-being is an attempt to increase life expectancy, enhance efficiency and postpone a complex future (Beltran-Sanchez et.al, 2012). Programs and initiatives that minimize the awful day-to-day climate and boost the lists of government assistance will help. The Ghana prison population floated about 14,000 against an authorized estimate of about 7,000 (Ghana Prison Service annual report 2019). As the jail population tends to grow, the amount of walled holding centres has declined with the removal of fortifications and fortresses to the Historical Centers and Landmarks Board in the past five years. A substantial majority of the rest of the correctional facilities, remnants of the boundary system, are aged and torn down (Ghana Prison Administrations, 2015).

Prison should be an environment where there is a comprehensive system of positive programs that can allow inmates to change their condition. This research would

thoroughly discuss the impact of poor lighting on Ghana Prisoners and as well as propose remedies.

## **1.2 Statement of the Problem**

Some researchers have reported about correctional and inmate problems of the prison. Owusu-Ansah. (2012), Ama Boadu. (2014), Addai Boateng. (2015), Aba-Afari et al. (2015).

Most of them especially, Owusu-Ansah (2012), focused on investigating the possibilities and problems of prison libraries in Ghana, based on Nsawam medium-security prison in Ghana. His study found that a prison is a place one can recover and be reformed, the Case of Nsawam Medium Security Prison's Rehabilitation and Reformation. Boadu (2014), also focused on the Implementation Challenges of Welfare Provisions for Prisoners in Nsawam Medium Security Prison. The study of Boadu (2014), established that inadequate supply of essential drugs and lack of qualified health personnel, insufficient ration grants for prisoners, overcrowding of cells, little ancillary facilities and unhygienic conditions are the major drawbacks to welfare delivery to prisoners in Ghana. Hagan (2013), also looked at the impact of the Rehabilitation Programmes of the Medium Security Prisons in Ghana on its Inmates. His study revealed that there are two (2) main forms of Rehabilitation programmes in the Nsawam Medium Security Prison, namely: Vocational and Educational programmes. Hagan established that a few of the inmates in the vocational training programme engage in the trade learnt and make a living out of it after serving their jailed sentenced. It was concluded that as result most of the inmates commit crimes again upon discharge. Among other scholars, Aba-Afari et al. (2015) have reviewed Guidance and Rehabilitation Services in Ghanaian Prisons:

using Kumasi Central Prison as Case Study. The goal of the analysis was to examine the kind of rehabilitation systems and facilities that are provided to prisoners in Ghanaian prisons. They recommended that the government should liaise with the Ghana Prison Service, Psychologists and Educationists to develop strategies that will reduce the menace of recidivism. The Ghana Prison Service administration should also consider developing a partnership with civil society and educational organizations in the community to increase educational and public awareness about employable skills available in the prison and also job opportunities available to ex-prisoners. That the media should also be brought in to give public awareness about the good work being done in the prison to reform prisoners. Addai-Boateng (2015) also studied The Evaluation of the Mental and Logistical Support Systems for the Reform and Recovery of Jail Inmates using the Sunyani Central Prison as a Case Study. He also realized that the Ghana Prison Service does not have enough funds to support the successful running of these support services. The inability of families, society and all stakeholders to play their roles, inhibit the reformation and rehabilitation of inmates. In as much as reformation and rehabilitation of inmates is shared responsibility, the inmates themselves have a larger role to play by availing themselves for that needed positive change. Even though there are workshops available to the prison, it lacks raw materials, tools and pieces of equipment. The workshops are only active when the prison officers bring in their jobs to do.

Earlier researches like Owusu-Ansah (2012), Boadu (2014), Hagan (2014), Aba-Afari et al. (2015) and Addai-Boateng (2015), have all focused on the social life of the inmates like libraries in the prison, supply of essential drugs, lack of qualified health personal, evaluation of the mental and logistical support systems for the

reform of jail inmates, insufficient ration grants for prisoners, overcrowding in cells, unhygienic conditions, and lack of guidance and rehabilitation services, but disregarded the effect of the building and ancillary services on the inmates. This research reflects on the construction aspect of the jail, to ascertain the effects of building and ancillary services on the prison and the workforce as a whole. The focus of this study would be the assessment of illumination in the Ghana Prisons hence this thesis is going to focus on the assessment of illumination levels of selected medium security prison accommodations in Ghana.

It is not sufficient for Prison Service to provide safe custody for the prisoners without proper welfare. It's equally crucial for prison authorities to provide prisoners with opportunities to change and develop. The illumination levels of prison accommodation have become a modern yardstick for measuring the performance of prisons globally (Wener, 2014). Ghana is lacking in these areas. Ghana Prison Service Regulation, 1958(LI 412 of 1958) section 34 states that “a prisoner shall be required to keep himself clean and decent in his person, and to conform to such directions as may be issued for that purpose”.

### **1.3 Aim and Objectives of the Study**

The aim of the study was to explore illumination levels of prison accommodation in Ghana and make recommendations for enhancing the illumination of the prisons.

The specific objectives of the study were as follows:

- to evaluate the extent to which illuminance level have been implemented in Ghanaian prisons;

- to determine strategies for improving the illumination of prison accommodation in Ghana; and,
- to make recommendations for enhancing the illumination of prison accommodation of Ghana prisons.

#### **1.4 Research Questions**

- Has there been an evaluation on the extent to which illuminance level has been implemented in Ghanaian prisons?
- What strategies can be adopted for improving the illumination of prison accommodation in Ghana? And,
- What recommendations can be made towards enhancing the illumination of prison accommodation in Ghana prisons?

#### **1.5 Significance of the Study and Delimitations**

The analysis included a cross-section of prison officers and several key officials of the Nsawam Medium Security and that of the Koforidua Local Prisons. It is envisaged that the degree of involvement and results of this research will be beneficial in several respects for various groups of individuals. The results will offer greater insight into the administrators and authorities of Nsawam Medium Security Prison and Koforidua Local Prison into factors that lead to inadequate lighting in prisons. That will direct them in the implementation of effective approaches to strengthen them to guarantee the consistency of the health of prisoners.

Inmates of Nsawam Medium Security Prison and Koforidua Local Prison to express their core grievances. We will share their opinions on inadequate lighting conditions that adversely impact them. It will serve to remind the prison officials of the condition of the inmates.

The findings of the study will also make it easier for the analyst to make policies proposals to policymakers. The study looked at inadequate lighting conditions encountered by prisoners in prison institutions in Ghana. To conclude, the study will contribute to the current literature on inadequate lighting system of the prisons. This will also act as a point of information for those scholars who plan to investigate such problems in particular correctional environments.

For this review, the study is confined to assessing the levels of illumination of Ghana Prison and proposed ways of improving illumination. The respondents were the prison correction officers and prison administrators of Nsawam Medium Security Prisons and Koforidua Local Prisons.

### **1.6 Limitations to the Study**

The work has several drawbacks that affected the reputation of the report. The inability of some respondents to make themselves available for the interview, and some were also scared to provide the researcher with details, including certain situations encountered in a variety of ways, including the following: Firstly, exposure to relevant study subjects, most notably, has not been easy for administrators and officers, including the fact that the researcher is a prison officer.

The initiative was viewed by prison officials and staff as addressing civil rights concerns linked to prison offenders.

Second, there are restricted evidence-based data and related literature on research problems, especially in the context of Ghana. The administration of the two sample areas was unable to disclose official work documents owing to potential legal consequences. However, the researcher did well to address these obstacles by letting respondents realize the nature of the study and its effect on the health of both offices and inmates.

### **1.7 Definition of Terms**

For the specific purpose of this research, the statement provided here are operational, but they do not vary substantially from their normal interpretations. It has been explained as per usage by the researcher in this study.

**Illumination:** will be used to mean the lighting levels in the prison.

**Crime:** a breach of the criminal law for which accord a penalty.

**Criminal:** a person who has been sentenced to prison for breaking the criminal law of the land.

**Prison:** a building or structure by the state where people who have breached the law are kept for a period of life.

**Poor:** will be used to mean the substandard quality of illumination.

**Prisoner/Inmate:** a person lawfully committed to prison by a court of law. An inmate or a prisoner should be 18 years and above.

**Recidivism:** a person who has been to be in prison/ jail more than two times.



## **1.8 Organization of the Dissertation Chapters**

The research work was organized into six chapters.

Chapter one introduced the field of the study, states the problem, and laid down the objectives, and research questions. Other aspects of the chapter were the relevance of the study, definition of terms, limitation and delimitation to the study.

Chapter two reflected on the analysis of existing literature applicable to the research. The analysis includes theoretical and observational research relevant to the topic under study. It is sub-arranged to patterns centred on the key element of concern to be examined.

The basic methodology of the analysis was set out in Chapter three. It specifies the components, including test architecture, population, study venue, sample size and sampling procedure, testing techniques, validity and reliability, data collection and analysis methods, and some other methodological approaches that were used to carry out the survey.

The introduction and investigation of results from both essential and auxiliary information which were gathered from the field of the study will be in part four.

Part five presented the discussion of the outcome from the analysis. The section is sub-segmented into different parts dependent on the research objectives to accomplish deliberate introduction and significant connection of thoughts. At last, section six closes the synopsis and finish the investigation discoveries. Likewise, it is utilized to make proposals on approaches, systems, and social intercession that can be utilized to improve everyday environments in the Ghanaian Jail.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

This chapter reviews the work of previous scholars on prisons and related subjects on the social needs of the inmates of Ghana prisons. It involves both theoretical and empirical approaches which will bring a broad overview of the existing material which are important for this research. This serves as a secondary source and forms the basis for a vivid understanding of the context in which this research is being conducted.

#### **2.2 Institutional Framework of Ghana Prison Service**

In Ghana, the Prison system, as we know it today, traces its roots to the colonial administration (Ghana Prison Administrations, 2015). On record, the first prison was established in 1847 at the Cape Coast Castle by the then Governor, Captain George Maclean. Between 1873 and 1920, the Gold Coast Police Department had a division that was responsible for managing prisons (Ghana Prison Administrations, 2015). The Prison sub-division gained autonomy in 1920 with Captain Cookson becoming the first Inspector General of Prisons. Six (6) other expatriate appointees headed Prisons until C.B. Moses becoming the first Ghanaian Director of Prisons in 1952. The Ghana Prisons Service has since seen a lot of changes in its role (Ghana Prison Administrations, 2015).

The Ghana Prison Service is a state security organization that is an integral part of the Criminal Justice Administration. It is under the Ministry of Interior and placed next to the Ghana Police Service. The Ghana Detainment facilities Administration

began officially turned into a division in 1922 lastly got self-governing in 1964 (Ghana Prison Administrations, 2015). The Penitentiaries Administration Chamber is the administering body of the Administration and exhorts the President on issues identifying with the association and support of the jail framework. The Ghana Jails Administration works as a security association and criminal equity office. Its capacities are to guarantee the sheltered care and government assistance of detainees and to attempt their reorganization and recovery.

The Administration oversees 43 detainment facilities, one Senior Correctional Center (SCC), Jail officials' training School and its Headquarters in Accra. The jails contain various focal, central, local, camp and female foundations. The jail populace for as far back as three (3) years has been floating around 14,000 against an approved limit of around 7000 (Ghana Prison Service annual report 2019). This makes colossal congestion with its accompanying issues of helpless characterization, wellbeing perils and weight on offices. While the jail populace continues rising the number of walled penitentiaries has been decreased after the loss of fortresses and mansions to the Exhibition halls and Landmarks Board over the most recent couple of years (Ghana Prison Service annual report 2019).

The current staff quality is around 6,200 (Ghana Prison Service annual report 2019). Human resource executives and advancement has endured mishaps because of deficient resources. The Administration work is a poorly characterized hierarchical structure that should be reshaped to mirror an important arrangement of offices.

The arrangement of Provincial Administrators exists just on paper with the outcome that there is unjustifiable centralization at the base camp. Lacking financing has been a central and interminable issue that hampers the acquisition of coordination has and care for detainees (Ghana Prison Administrations, 2015).

### **2.2.1 Organizational Command Structure**

Administratively, the service is headed by the Director-General of Prisons (DGP). He is appointed by the President and supervised by the 13- member Prison Service Council. He is responsible for the day to day administration of the Service. Director-General of Prisons is assisted by two (2) Deputy Directors General of Prisons (DDGPs), and six (6) Directors of Prisons (DOPs), each with a specific schedule. Immediately, below the DOPs are the Deputy Director of Prisons (DDPs). They hold appointments as Regional Commanders, Schedule Heads or Officer in Charges (OICs). All Regional Commanders and OICs are answerable to the Director-General of Prisons (DGP), just like the DDGPs and the DOPs. The Director-General of Prisons (DGP) answers to the Service Council, the Minister and ultimately the President. We have Assistant Directors of Prisons (ADPs), the Chief Superintendents of Prisons (CSPs), the Superintendents (SPs), the Deputy Superintendents of Prisons (DSPs) and the Assistants Superintendents of Prisons (ASPs) these forms the Senior Officers corps. The command structure goes down to the Junior Officers corps as Senior Chief Officers (SCOs), the Chief Officers (COs), the Assistant Chief Officers (ACOs), the Sergeants (SGTs), the Corporals (CPLs), the Lance Corporals (L/CPLs), the Second Class Officers (2COs) and lastly the Recruit Officers (ROs). (Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

### **2.2.2 Vision of the Service**

The vision of Ghana Prison Service is;

To transform the Prisons in Ghana into highly efficient correctional facilities managed by a well-trained and motivated staff (Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

### **2.2.3 Mission Statement of the Service**

The mission statement of the Ghana Prison Service is;

To the maintenance of internal security and public safety with a commitment to operating a safe, humane and efficient penal system for the successful incarceration, vigilant, fortitude, humanity and integrity (Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

### **2.2.4 Units within the Ghana Prisons Service**

The Ghana Prison Service has various departments and units which work tirelessly to ensure that both administrative and operational needs of the Service are met.

These includes:

- ✓ Finance and Administration;
- Human Resource Development;
- ✓ Agriculture;
- ✓ Welfare, Inmate Skills Development and Rehabilitation;
- ✓ Technical and Service and
- ✓ Security and Operation.

(Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

#### **2.2.4.1 Finance and Administration**

The Finance and Administration unit in the service provides the following services;

*Accounts*; the accounting department of the Ghana Prison Service formulates and implements sound financial policies on behalf of the service.

*Procurement*; the procurement unit is mandated to facilitate, effective and efficient procurement of logistics of the service in areas such as works, Goods and Services.

*Legal*; this unit is responsible for the implementation of the legal framework of the Ghana Prison Service (Prison Service General Administration Regulations, 2016 **(C.I. 92)** Article 1-7).

#### **2.2.4.2 Human Resource Development**

Under this section or unit we have the following duties;

*Education*; this unit is responsible for the planning and implementation of educational and training needs for the service.

*Sports*; the sports unit is responsible for physical training, recreation and organization of sporting activities in the service.

*ICT Department*; The Information Communication Technology Department is the life blood and the engine that drives effective communication between and among stations in the Ghana Prison Service.

*Gender Desk*; the gender desk seeks to maintain equal opportunities for male and female officers.

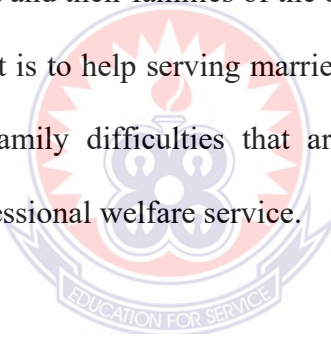
*Recruitments*; is responsible for the recruitment of personnel into the service (Prison Service General Administration Regulations, 2016 **(C.I. 92)** Article 1-7).

### **2.2.4.3 Agriculture**

The Agric unit of the Service is one of the vibrant units tasked with training, reforming inmates on agric training programmes and as well as the agricultural aspects within the service (Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

### **2.2.4.4 Welfare**

The Ghana Prison Service takes the welfare of its officers, their families and inmates very seriously and offers a wide range of support for them. This section provides information and contact details regarding welfare and support for both officers in active service, retirement and their families of the bereaved. The Welfare aims of the Service Personal Support is to help serving married and single persons and families with any personal or family difficulties that arise, by providing a confidential comprehensive and professional welfare service.



Infirmary; The Medical Officers roles are no exception. They provide immediate medical assistance for the service, treating casualties and caring for officers on operational duties and inmates in prisons custody.

Music; The bands provide musical support to the service, from musical spectacles in top venues to marching with officers and other official ceremonies. The unit has two bands, the Dance and the Regimental (Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

#### **2.2.4.5 Technical and Service**

The unit performs the following roles among others:

- Design Residential, Office and Prison Infrastructure;
- Construct, Retrofit, Rehabilitate Prison Buildings;
- Engage the inmate in productive works that will reduce their idleness, help defray the cost of incarceration, install work habits, etc.;
- Takes inventory of all landed properties, furniture, fixtures and pieces of equipment;
- Survey and document all Prison Lands; and

Run a maintenance schedule to keep Prison properties in good working conditions (Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

#### **2.2.4.6 Security and Operations**

This unit sees to all security arrangements of the service in both Static and Dynamic securities which includes from fire arms to searching (Prison Service General Administration Regulations, 2016 (C.I. 92) Article 1-7).

### **2.3 Legal Frame Work of Ghana Prison Service**

Article 205 (1) of the Constitution of the Republic of Ghana, 1992, states: “There shall be a Prison Service of Ghana”. This means that the nation recognizes the need for a specialized agency mandate to manage its prisons. Other documents and legislations provide guidelines on the conduct of officers and the management of prisons. These are:

- ❖ Prison Regulations, 1958 (LN 412);



- ❖ Prisons Standing Orders, 1960;
- ❖ Prisons (Amendment) Regulation, 1970 (LI 648);
- ❖ Prisons (Declaration of Prisons) Instrument, 1971, (EI 22);
- ❖ Prisons Decree, NRCD 46, 1972;
- ❖ Ghana Prison Service Scheme of Service Administration, 1992; and
- ❖ Ghana Prison Service General Administration, 2016 (C.I. 92 and 93).

## **2.4 Prisons Internationally**

A majority of the world's prison systems do not function at the level of the United Nations' Standard Minimum Rules for the Treatment of Prisoners. In some countries, relevant international obligations and standards are deliberately disregarded. Overcrowding is a central problem in prison management around the globe. The acute and widespread challenges posed by overcrowded prisons around the world often lead to other serious problems. Overcrowded prisons are more likely to be unsanitary, violent, difficult to control, and difficult to administer.

The deliberate physical, psychological, and sexual mistreatment of inmates by prison officials is also a persistent and pervasive issue of concern. In many cases, these abuses occur in police stations, on military bases, or in pretrial detention facilities. Pre-trial detainees are often at greatest risk of being mistreated, according to the Open Society Foundation because they are often under the sole control of the detaining authorities, who may “perceive torture and other forms of ill-treatment as the easiest and fastest way to obtain information or extract a confession”. Transparency regarding pre-trial detention practices, tracking of detainees, and regular outside monitoring are important to the prevention of mistreatment at this

vital stage of custody. Immediate and regular access to family and legal counsel are also important as protective measures.

In some countries, the deliberate mistreatment of prisoners has been an entrenched practice for many years, creating particular challenges for those seeking to reform and improve prisoner treatment. In many countries, where police lack the resources, experience, or capacity to formally investigate or prosecute criminal conduct, the use of abusive physical or psychological acts are the traditional means for extorting confessions.

Prisoners are often denied the minimum legal protections and legal process guarantees in the three phases of their detention or imprisonment: in the pre-trial phase; at trial; and in the post-conviction stage while they serve their sentences. A significant number of countries deny fair and adequate process to detainees before they reach trial. Globally, detainees also experience a wide range of due process shortcomings during trial. Prosecutors routinely introduce irrelevant or unreliable evidence to prove intent or testimony about the revolutionary credentials, or lack thereof, of a defendant. Many detainees, especially those accused of political crimes, report their attorneys have difficulties accessing their files due to bureaucratic and administrative obstacles.

#### **2.4.1 International Efforts to Improve Prison Conditions**

The United Nations Office on Drugs and Crime (UNODC) is the primary international organization seeking to address the myriad global challenges associated with prisons. They are the custodians of the UN Standard Minimum

Rules for the Treatment of Prisoners (SMRs), which is the primary set of international norms by which prison conditions are evaluated. In 2010, the UNODC Crime Commission began a much-needed review of the SMRs, which have not been substantially revised since their initial adoption by the UN Economic and Social Council in 1957.

The United States supports the SMRs, which have proven to be a valuable set of general rules by which to manage prison systems and facilities, and is an active participant in the current review process. In addition to the SMRs, UNODC also relies on other important international documents to advance its work in this area, including the United Nations Standard Minimum Rules for Non-Custodial Measures (Tokyo Rules), the United Nations Rules for the Treatment of Women Prisoners and Non-custodial Measures for Women Offenders (Bangkok Rules), the United Nations Standard Minimum Rules for the Administration of Juvenile Justice (the Beijing Rules), and the United Nations Guidelines for the Prevention of Juvenile Delinquency (the Riyadh Guidelines).

UNODC is of the view “that prison reform should not be regarded in isolation from broader criminal justice reform” and carries out a limited set of programs consistent with this perspective. It offers assistance in improving legal safeguards for prisoners; encouraging the introduction and widening of the scope of alternatives to pre-trial detention within domestic criminal codes; increasing the scope of alternatives to imprisonment, decriminalizing certain acts, and reducing sentences for selected offenses; and supporting the social reintegration needs of offenders and ex-offenders.

Although there is no specific UN reporting mechanism focused primarily on prison conditions, a wide array of UN special mandate holders – including the Working Group on Arbitrary Detention, and the special rapporteurs on torture and other cruel, inhuman or degrading treatment or punishment; on extrajudicial, summary or arbitrary executions; on violence against women; and on contemporary forms of racism, racial discrimination, xenophobia, and related intolerance – have devoted considerable attention to prison conditions. In his concluding 2010 report, for instance, Manfred Nowak, the then-special rapporteur on torture and other cruel, inhuman or degrading treatment or punishment, expressed “shock” at the way human beings are treated in detention and concluded that “with a few notable exceptions, conditions of detention in many of the facilities [he] visited [over the course of his tenure] can only be qualified as inhuman or degrading.” In addition, UN special rapporteurs or independent experts on particular countries, including Belarus and Iran, have expressed serious concerns about prison conditions in those places.

In 1996, the African Union formally acknowledged the scope and scale of this problem by creating a Special Rapporteur on Prisons and Conditions of Detention in Africa (SRP). This remains the only international or regional mechanism specifically devoted to prison conditions. The SRP’s mandate is “to examine the situation of persons deprived of their liberty within the territories of States Parties to the African Charter on Human and Peoples’ Rights.” The SRP has conducted over 25 missions to 23 countries since the mandate was created and has identified a wide range of problems. In his October 2012 report, the SRP concluded “prison systems

in most African countries are in crisis.” In virtually all reports on country visits, the SRP called for additional resources to be dedicated to prisons.

The International Committee of the Red Cross (ICRC) and related organizations also work in cooperation with countries seeking to address these problems, often through government-sanctioned visits to prisons and in private interviews with detainees. The purpose of these visits is to ensure governments are in compliance with international legal standards in their treatment of detainees. The organization’s findings and recommendations are then communicated through confidential channels to the relevant government officials in the hopes of improving the prison conditions and prisoner treatment. To date, ICRC experts are allowed access to 500,000 prisoners in 80 countries around the world.

As this report has demonstrated, the problems faced by persons in detention are expansive in both their nature and geography. They range from inadequately resourced detention facilities to intentional and calculated acts of mistreatment by repressive governments. They are found in developed as well as developing countries around the world. Yet the precise nature of the challenges is specific to each country. (From Wikipedia, the free encyclopedia).

- ❖ This report only covers international prison conditions. Related issues within the United States are reported on by other federal and state agencies.
- ❖ *TIME*, October 2, 2012, <http://world.time.com/2012/10/02/inside-the-prison-that-beat-a-president-how-georgias-saakashvili-lost-his-election/>
- ❖ *BBC News*, November 10, 2012, <http://www.bbc.co.uk/news/world-asia-20267735>

- ❖ International Centre for Prison Studies  
(ICPS), [http://www.prisonstudies.org/info/worldbrief/wp\\_b\\_stats.php?area=all&category=wb\\_poptotal](http://www.prisonstudies.org/info/worldbrief/wp_b_stats.php?area=all&category=wb_poptotal)
- ❖ *New York Times*, November 11,  
2012, [http://www.nytimes.com/2012/11/12/world/asia/sri-lanka-opposition-says-27-prisoners-died-in-a-massacre.html?\\_r=0](http://www.nytimes.com/2012/11/12/world/asia/sri-lanka-opposition-says-27-prisoners-died-in-a-massacre.html?_r=0)
- ❖ *BBC News*, July 27, 2012, <http://www.bbc.co.uk/news/world-latin-america-19003776>
- ❖ *The Economist*, September 22,  
2012, <http://www.economist.com/node/21563288>
- ❖ UNODC, <http://www.unodc.org/documents/justice-and-prison-reform/EGM-Uploads/ITALY-GOV-20-En.pdf>
- ❖ Open Society Foundation, “Pretrial Detention and Torture: Why Pretrial Detainees Face the Greatest Risk,” June  
2011, <http://www.opensocietyfoundations.org/sites/default/files/pretrial-detention-and-torture-06222011.pdf>
- ❖ International Committee of the Red  
Cross, <http://www.icrc.org/eng/resources/documents/interview/2012/bahrain-detention-interview-2012-02-07.htm>

## **2.5 United States of American Prisons System**

The prison system in the United States is under the strict authority of the state and federal government. Imprisonment is a synchronized authority operated under the Constitution of the United States of America. Incarceration is a major way of punishment for law-breaking felony offenses that are committed in the United

States. Offenders who commit less serious crimes such as misdemeanor crimes are likely to be sentenced to a shorter local jail term. Sometimes there are other forms of discipline or punishment sanctioned, such as probation, restitution or even community service corrections (being sent to a halfway house).

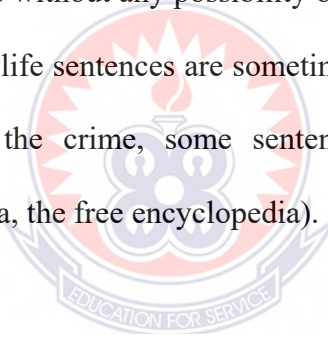
Within the United States, penal facilities function at many different levels of safety. These functions range from maintaining minimum security penal facilities that generally hold non-violent offenders to supermax prisons that house renowned criminals and even terrorists. In comparison to others, the United States has been documented as possessing the highest incarceration rate in the world. By the year 2006, it was shown that 7.2 million people were on probation, on parole or behind bars, and out of that total, 2.2 million people were imprisoned. By the beginning of the year 2008, 1 out of every 100 American adults was already imprisoned. The second runner up in regards to incarceration is the People's Republic of China, having 1.5 million people imprisoned, even though they have approximately four times the general population of the United States.

### **2.5.1 The Sentencing Process**

When a person is arrested for committing a crime, there is a process that must take place before the prison term. During the investigation process, if there is sound evidence against the person arrested, he is generally held until a trial is presented. During the trial, a jury of men and women determine if the person is guilty or not. If he or she is found guilty, a judge will sentence the person convicted of the crime to a specific time in prison. However, this will be determined by several factors such as the brutality and nature of crime committed, state and federal sentencing procedures,

the previous record of the convicted criminal and the judgment of the judge. It is very important for the judge to consider the mitigating or justifying circumstances of a crime in order to establish the suitable extent of the imprisonment.

Numerous criminal cases, however, end in plea bargaining. This is when the prosecuting attorney and the defense attorney for the defendant come to an agreement, allowing the defendant the privilege of pleading guilty to a lesser crime in order to receive a lesser prison sentence as opposed to participating in a trial, being found guilty and having to endure a much harder sentence. Depending on the harshness and cruelty of the offense, some inmates receive a sentence for life imprisonment, and this is without any possibility of obtaining parole. In some states, however, criminals with life sentences are sometimes eligible for parole. Depending on the callousness of the crime, some sentences may even end in a death penalty. (From Wikipedia, the free encyclopedia).



## **2.6 United Kingdom's Prisons System**

Her Majesty's Prison Service (HMPS) is a part of Her Majesty's Prison and Probation Service (formerly the National Offender Management Service), which is the part of Her Majesty's Government charged with managing most of the prisons within England and Wales. (Scotland and Northern Ireland have their own prison services: the Scottish Prison Service and the Northern Ireland Prison Service, respectively).



The Chief Executive Officer (CEO) of HMPS, is the administrator of the prison service. The CEO reports to the Secretary of State for Justice and also works closely with the Prisons Minister, a junior ministerial post within the Justice. It has its head office in Clive House in London, and previously its head office was in Cleland House in the City of Westminster, London. The British Overseas Territory of Bermuda's HM Prison Service (renamed the Department of Corrections in 2002) was a separate organisation.

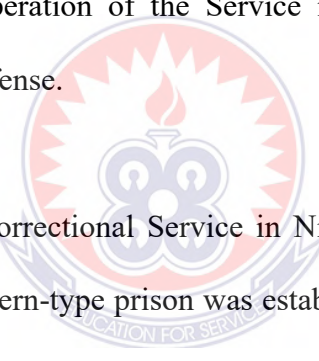
The statement of purpose for Her Majesty's Prison Service states that "Her Majesty's Prison Service serves the public by keeping in custody those committed by the courts. Our duty is to look after them with humanity and help them lead law abiding and useful lives in custody and after release". The Ministry of Justice's objective for prisons seeks "Effective execution of the sentences of the courts so as to reduce re-offending and protect the public. The imprisonment rate for England and Wales is the highest in Western Europe and at roughly the "midpoint" worldwide. The prison population numbered 83,165 in August 2018. The Ministry of Justice has projected that this will rise to 86,400 by March 2023. Recent issues affecting the prison system include overcrowding, lower levels of staffing and the increased availability of synthetic cannabinoids and drones for smuggling. Despite a fall in crime rates between 2010 and 2016, the prison population continued to rise, while staff numbers were reduced, with the number of prison officers being reduced from 25,000 in 2010 to about 18,000 in 2015. There has been a particularly sharp rise in the number of prisoners above the age of 60. Public sector prison officers (historically known as warders), under the Prison Act 1952, have **"all the powers, authority, protection and privileges of a constable"** whilst acting as such.

Practically every inmate has his own cell although there are cases where three men occupy the same cell. A quaint survival from the old days is the low plank bed which is the lot of most British prison inmates. Three wide boards are nailed together and supported by six inch legs. The mattress is a thin sheaf of material which can easily be rolled up inside the blanket and tucked away during the daytime. The plank bed is propped against the cell wall. Before making further criticism. There is not one inside cell in England and for repudiating this vicious type of architecture the British deserve credit. The cells of most prisons are poorly lighted, either by day or night. In fact, gas lights still remain in the Oxford prison which I visited. It seemed fantastic to see guards lighting the little gas mantles set outside each cell in a specially constructed niche, the light from which gleams through an eight square inch frosted glass inside the cell. Even where electric lights are installed, they are set immediately inside the door of the cell, in the high ceiling, and are only of twenty-five or forty wattage. The wonder is that prisoners do not ruin their eyes by reading. The total UK prison population was 83,618 (0.088% of the population, based on the total number of people who have lived in Britain since the start time of Britain's longest serving prisoner), 79,749 men and 3,869 women in 2018. Men are 22 times as likely as women to be imprisoned. In 2019 England and Wales have the largest prison population in Western Europe. (From Wikipedia, the free encyclopedia).

## **2.7 Nigerian's Prisons System**

Nigerian Correctional Service (NCoS), formerly known as Nigerian Prison Service (NPS) is a government agency of Nigeria which operates prisons. The agency is headquartered in Abuja and it is under the supervision of the Ministry of the Interior

and the Civil defense Immigration and Correctional Service. The name was changed from the Nigerian Prisons Service to the Nigerian Correctional Service by President Muhammadu Buhari on the 15th of August 2019 after signing the Nigerian Correctional Service Act of 2019 into law. The bill was passed by the 8<sup>th</sup> Assembly of the House of Representatives but the signing was done two months after their tenure had expired. The law divides the Correctional Service into two main areas which are The Custodial Service and Non-custodial Service. The Nigerian Correctional Service is an arm of the Criminal Justice System domiciled in the Ministry of Interior. The Nigerian Correctional Service is a federal phenomenon. i.e. there are no State Correctional Services in the Nigeria. Every Custodial Centre is a Federal Facility. The operation of the Service is supervised by the Ministry of Interior and the Civil Defense.



The origin of modern Correctional Service in Nigeria is 1861. That was the year when conceptually, Western-type prison was established in Nigeria. The declaration of Lagos as a colony in 1861 marked the beginning of the institution of formal machinery of governance. At this stage the preoccupation of the colonial government was to protect legitimate trade, guarantee the profit of British merchants as well as guarantee the activities of the missionaries. To this end, by 1861, the acting governor of the Lagos colony and who was then a prominent British merchant in Lagos, formed a Police Force of about 25 constables. This was followed in 1863 by the establishment in Lagos of four courts: a Police court to resolve petty disputes, a criminal court to try the more serious cases, a slave court to try cases arising from the efforts to abolish the trade in slaves and a commercial court to resolve disputes among merchants and traders. The functioning of these courts and the police in that

colonial setting necessarily meant that prison was needed to complete the system. And it was not long in coming for in 1872, the Broad Street prison was established with an initial inmate capacity of 300.

However, the progressive incursion of the British into the hinterland and the establishment of British protectorate towards the end of the 19th century necessitated the establishment of the prisons as the last link in the Criminal Justice System. Thus by 1910, there already were prisons in Degema, Calabar, Onitsha, Benin, Ibadan, Sapele, Jebba and Lokoja. The declaration of protectorates over the East, West and North by 1906 effectively brought the entire Nigeria area under British rule. However, that did not mark the beginning of a unified Nigerian Prisons.

Even so, the colonial prison at this stage was not designed to reform anyone. There was no systematic penal policy from which direction could be sought for penal administration. Instead prisoners were in the main used for public works and other jobs for the colonial administration. For this reason there was no need for the recruitment of trained officers of the prisons. Hence colonial prisons had no trained and developed staff of their own and instead the police also performed prison duties. As time went on ex-servicemen were recruited to do the job.

They were also very poorly run and the local prison conditions varied from one place to another in their disorganization, callousness and exploitation. But so long as they served the colonial interests of ensuring law and order, collecting taxes, and providing labour for public works, they were generally left alone. The result was that the prisons served the purpose of punishing those who had the guts to oppose

colonial administration in one form or the other while at the same time cowing those who might want to stir up trouble for the colonial set up.

The Prison regulation was published in 1917 to prescribe admission, custody, treatment and classification procedures as well as staffing, dieting and clothing regimes for the prisons. These processes were limited in one very general sense. They were not geared towards any particular type of treatment of inmates. Instead they represent just policies of containment of those who were already in prison. Besides, they were limited in application to those who were convicted or remanded in custody by criminal courts of the British-inspired supreme or provincial types. Those remanded or convicted by the Native courts were sent to the Native Authority prisons. The prison regulation also distinguished between Awaiting Trial and convicted inmates and even stipulated the convict – category to be found in each type of prison. But the limited application of this general rule to the national Prison while the native Authority Prison went their own way effectively stultified the appearance of a national Prison goal-orientation in terms of inmate treatment. It was not until 1934 that any meaningful attempt was made to introduce relative modernization into the Prison Service.

It was at this time that Colonel V. L. Mabb was appointed Director of Prisons by the then Governor Sir Donald Cameron. Although a military officer, Mabb had an understanding of what prisons should be. And he went on to do his best. What he seemed to have focused his attention on was the formation of a unified Prison structure for the whole country but he failed. Yet he succeeded in extending the substantive Director of Prisons' supervisory and inspectoral powers over the Native

Authority Prisons by this time dominant in the North. It was also during his tenure that the Prisons Warders Welfare Board was formed.

His efforts were to be continued by his successor R. H. Dolan (1946 – 55). Mr. Dolan was a trained prison officer and when he assumed duties in Nigeria he already had a wealth of experience in prison administration in both Britain and the colonies. Although a scheme for the introduction of vocational training in the National Prisons had been introduced in 1917 and it failed except in Kaduna and Lokoja prisons where it was functioning in 1926. He also made classification of prisoners mandatory in all prisons and went on to introduce visits by relations to inmates. He also introduced progressive earning schemes for long term first offenders. He also transferred the Prisons Headquarters formerly in Enugu to Lagos to facilitate close cooperation with other Department of State. He also introduced moral and adult education classes to be handled by competent Ministers and teachers for both Christian and Islamic education. Programmes for recreation and relaxation of prisoners were introduced during his tenure as well as the formation of an association for the care and rehabilitation of discharged prisoners. But above all, he initiated a programme for the construction and expansion of even bigger convict prisons to enhance the proper classification and accommodation of prisoners.

On manpower development, he was instrumental to the founding of the Prison Training School, Enugu in 1947. He also saw to the appointment of educated wardresses to take charge of the female wings of the prisons and he generally tried to improve the service conditions of the prison staff. In addition, he took classification a step further when in 1948 he opened four reformatories in Lagos and converted part of the Port-Harcourt prisons for the housing and treatment of

juveniles. Five years later he was to build an open prison in Kakuri - Kaduna to take care of first offenders who had committed such crimes as murder and manslaughter, and who are serving terms of 15 years or more. The idea was to train them with minimum supervision in agriculture so that on discharge they could employ themselves gainfully. In fact, Dolan's tenure represented a very high point in the evolution of Nigeria Prisons Service. (From Wikipedia, the free encyclopedia).

## 2.8 South African Prisons System

The prison service in South Africa is known as the **Department of Correctional Services** and it is a department of the South African government. It is responsible for running South Africa's prison system. The department has about 34,000 staff and is responsible for the administration of 240 prisons, which accommodates about 189,748 inmates. The prisons include minimum, medium and maximum security facilities. The agency is headquartered in the West Block of the Poyntons Building in Pretoria.

The political head of the department is the Minister of Justice and Correctional Services, who is supported by a Deputy Minister of Correctional Services. As of August 2020 the minister is Ronald Lamola and the deputy minister is Patekile Holomisa. In the 2020 budget, R26,800.0 million was appropriated for the department. In the 2018/19 financial year the department had 38,459 employees.

The 178 prisons run by the department include:

- 9 women-only prisons;
- 13 prisons for young offenders;
- 40 prisons for male offenders;

- 72 prisons for both male and female offenders; and
- 5 prisons that are temporarily closed down or undergoing renovations.

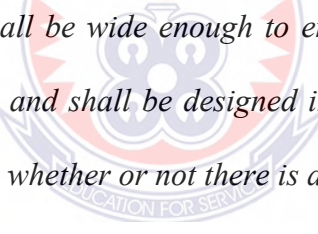
**Prisons in South Africa** are run by the Department of Correctional Services. According to the ministry, there are approximately 34,000 employees of the department running 240 prisons. In those prisons are nearly 156,000 inmates as of August 2013. The prisons include minimum, medium and maximum security facilities. (From Wikipedia, the free encyclopedia).

### **2.9 Standards of Prison Building and Accommodation**

There are universally acknowledged necessities for the convenience of detainees. European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) was created during the 1990s as an essential “dependable guideline” standard for the base measure of living space that a detainee ought to be managed in a cell. This ought to be; 6m<sup>2</sup> of living space for a solitary inhabitation cell and 4m<sup>2</sup> of living space per detainee in a numerous inhabitation cell. The CPT has additionally made it clear as of late that, the base way of living space ought to bar the clean offices inside a cell. Thusly, a solitary inhabitation cell should quantify 6m<sup>2</sup> in addition to the space required for a sterile extension (generally 1m<sup>2</sup> to 2m<sup>2</sup>). Equally, the area occupied by the sanitary annexes would be omitted from the measurement of 4m<sup>2</sup> per individual in multiple occupancy cells. Therefore, in any space that accommodates more than one inmate, the sanitary annexes will be completely partitioned. The CPT requires that any space used for prisoner housing will be at least 2m between the walls of the space and 2.5 m between the floor and the ceiling.



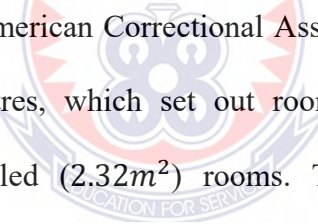
As indicated by the United Nations Standard Minimum Rule for the treatment of prisoners (UN-SMR), article 9 subsections (1), “where resting accommodation is in particular cell or rooms, each prisoner will have around night time a cell or room without any other person. In case for remarkable reasons, for instance, brief blockage, it gets fundamental for the central prison association to make an exception to this norm, it isn't appealing to have two prisoners in a cell or room”. Concerning article 10 similarly communicates that “All comfort obliged the use of prisoners and explicitly all resting accommodation will meet all necessities of prosperity, due regard being paid to climatic conditions and particularly to the cubic substance of air, least floor space, lighting, warming and ventilation”. Not sitting above Article 11 which communicates that in everything spots where prisoners are needed to live or work;

- 
- i. the windows shall be wide enough to enable the inmate to read or write with natural light and shall be designed in such a manner as to encourage fresh air to reach, whether or not there is artificial ventilation; and*
  - ii. Artificial illumination shall be given to enable prisoners to read or operate without damage to their eyesight.*

The 1996 Kampala Declaration on the Conditions of Prison in Africa (KDCPA) states that “prisoners cannot have living environments that are not inconsistent with human dignity and that the situations in which detainees are held need not irritate the suffering already triggered by unlawful imprisonment”.

Guideline XII of the Inter-American Commission on Human Right (IACHR), goal 1/180, standards and best practice on the protection of individual denied of opportunity “will have adequate floor space, regular prologue to basic light,

appropriate ventilation and warming, as demonstrated by the climatic conditions of their place of the difficulty of opportunity”. From ICHC page 37, “Typical light is key for keeping up physical and enthusiastic wellbeing. The hard and fast size of windows and openings fenestration in a cell or habitation should be at any rate 10% of the floor space. Windows should allow detainees to see bits of the external condition. Where the open ventilation gave has not been arranged in a way that is appropriate for the air and detainee living space become unnecessarily nippy, it is standard practice for the detainees to finish off the virus air by impeding the spaces. These blockages intrude with both ventilation and customary lights. Moreover, where cooling is inadequate with regards to detainees may break fixed windows to make wind current.



On the other side, the American Correctional Association has developed guidelines for adult detention centres, which set out room requirements for single-celled ( $3.25m^2$ ) and multi-celled ( $2.32m^2$ ) rooms. This is separate from what the European Committee for the Prevention of Torture and Cruel or Abusive Care or Retribution (CPT) established in the 1990s. According to the International Committee of the Red Cross (ICRC) in its Supplementary Guidance on Food, Sanitation, Hygiene and Habitat in Jail, page 14, “Prisoners can be somewhat different from one another in terms of their construction, but they will also have the same set of facilities and resources planned to satisfy the material needs of prisoners and the administrative criteria.” “The jails used today are still aged and in bad circumstances. Areas inside the jail are still not adequately zoned. Many of the buildings used as jails were initially constructed for very specific reasons. The original function of such facilities varies broadly, from private residences to housing

for prisoners, military bases, military armouries, clinics or other government buildings” (ICRC p. 15).

There might be a need for one or more walls across the jail to deter escaping from custody and to maintain security. Some jails are well planned and constructed in ideal areas, while many are badly equipped for their setting and meant for operation (SMR 63(3), set of guidelines for the safety of all persons in any type of detention or jail, Principles for the Care of Prisoners).

### **2.10 Illumination in Prisons Cells**

We cannot discuss day-to-day conditions in the penitentiaries without referencing illumination. As per Building Research Establishment (BRE) the fundamental manual for retail lighting, illumination is the degree of light on a surface and it very well may be utilized as a kind of perspective estimation of the exhibition of a lighting framework. As per Air Infiltration and Ventilation Center (AIVC), ventilation then again is the procedure by which clean air (typically outdoor air) is universally given to space and stale air is expelled. Some court decisions have shown that prisoners ought to approach windows, however generally for ventilation (Hutching v. Corum, 1980).

As indicated by Article 10 of the United Nations Standard Minimum Guideline for the Treatment of Detainees (SMR), “all convenience accommodated the utilization of detainees and specifically, all sleeping comfort shall follow all the criteria of well-being, due consideration for the climatic conditions and, in particular, for the cubic content of air, illumination, sufficient floor area, heating and ventilation. Not

to mention Article 11, which states that 'in all areas where prisoners are expected to reside or work;

- a. *the windows shall be wide enough to enable the inmate to read or write through natural light, and shall be designed in such a manner as to encourage fresh air to enter whether or not there is artificial ventilation; and*
- b. *Artificial light shall be provided sufficient for the prisoners to read or work without injury to the eyesight”.*

Research has additionally uncovered that daylighting gives a superior lighting condition than counterfeit lighting (Heschong Mahone Gathering, 1999). Rule XII of the Inter-American Commission on Human Rights (IACHR), Goal 1/180, Guidelines and Best Practice on the Confirmation of Individual Denied of Opportunity communicates that “prisoners will have good floor space, ordinary presentation to characteristic light, fitting ventilation and warming, as shown by the climatic conditions of their place of the difficulty of opportunity”. According to ICHC page, 37 states, “normal light is significant for keeping up physical and mental wellbeing. The total size of windows and openings (fenestration) in a cell or quarters should be at any rate of 10% of the floor space. Windows should allow detainees to see parts of the external condition. Detainees break fixed windows to make wind current to keep cool, says the report. The report says detainees cannot be blocked from making sure about better light and ventilation in their cells. “These blockages interfere with both ventilation and illumination,” the report says.

The Ghanaian confinement offices cannot be dismissed when we talk about illumination and lighting in the prisons cell. Structures of Ghanaian confinement offices are tall with high-security divider, obliged space/size cells, an insufficient number of windows to permit in outside air, depleted and broke dividers, defenceless edification or cloudiness, etc. (Absolution Global, 2012; Basic liberties and Work, 2011). Following the Confinement offices, Organization Act 1972 (Jail Administration Degree [N.R.C.D. 46]) segment 37 (2) gives that: “It will be the commitment of the Regulator of Prisons to ensure that every prisoner in respect of comfort”, segment 37(2) states that “No cell will be used for the control of a prisoner aside from if a clinical authority guarantees recorded as a printed version that its size, lighting, warming, ventilation, fittings and furniture are adequate for prosperity. Although all these measures and policies are designed to ensure adequate illumination in prison cells, there are lapses in their implementation. For example, Bundeh (1991) in his book “Birds of Kamiti” claims that prison life conditions are pitiful and mentions lowlife scum in living cells, insufficient ventilation and sanitation in Kamiti Maximum Prison, where he spent his time. Tanner affirmed that “light is the most essential ecological component after food and water to regulate body functions” (Tanner, 2008).

Many studies have demonstrated a strong association between ventilation systems and student work rate (Galasiu & Veitch, 2006) and have also shown that exposure to natural light and fresh air systems can improve wellbeing, comfort, speed of activity, precision and efficiency of tasks (Chambers, 2004; Gregg & Ander, 2008). Generally, the suggested and calculated illumination amounts are specified in terms

of the volume of light, illumination, falling on the horizontal working plane (Rea, 2000).

## **2.11 Prison Overcrowding**

There are several implications of mass incarceration, both prisoners and jail buildings. This analysis briefly covers two factors of overcrowding: statutory punishment and recidivism. The focus might also be on the effect of the population boom on the resources available, the actions of prisoners and securing the network. It is a real thing and a rampant fact that worldwide prisons are overburdened (World prison population, 2015). The dungeons of Ghana cannot be ignored. Amnesty International (2012) observed that the living conditions in Ghana's prisons are coercive. In certain correctional facilities, six (6) prisoners rest in 1.85 meters by 3.15 meters of cells, 45 rest in 4 meters by 5 meters of cells, and 115 prisoners share 5 meters by 8 meters of cells. As additionally talked about by the U.S. Division of State/Bureau of Democracy, Common Liberties and Work (2011), these detainees dozed on their sides on mats or exposed floors, substituting head to toe to deal with the restricted space, and needed to deliberately venture between dozing associates to the corner to pee, while in certain squares, detainees needed to snooze clumps.

### **2.11.1 Overcrowding Definition**

The John Howard Society is an association committed to breaking down the difficulties of law requirements and the criminal equity framework. Jail overpopulation can be considered as congestion of spatial thickness and congestion of social thickness. From either the phrasing of the John Howard Society, overcapacity in space thickness is portrayed as the space open to every individual.

Social thickness overcapacity is described as the number of individuals sharing a solitary unit, asset, or benefit (John Howard Society, 1996). Given the two characterizations, it tends to be seen that worries of overcapacity in social thickness can have pulverizing outcomes on the restoration of detainees.

### **2.11.2 Causes of Overcrowding**

The rate of incarceration around the country has been gradually rising since the 1980s. Mandatory sentencing, tighter regulation, the “War on Drugs” and the inability of the prison facilities to rehabilitate those already in prison are some of the reasons. These pre-sets up sentences are to be respected by the appointed authority, consequently squeezing the adjudicator’s capacity to satisfy their commitment to accuse the guilty party of his judgment. A report by the Massachusetts survey board has confirmed that compulsory condemning for drug guilty parties has been the fundamental driver of jail packing for the state. Medication guilty parties have been taking space required for the detainment of rough wrongdoers, who are then delivered into networks.

Recidivism is described by the Merriam-Webster Word reference as an inclination to break faith into a past condition or strategy for direct. Residents should define the behaviour and moral guidelines of society. If they are unable to conform, they must be restricted to society before the standards are recognized. The society also has to rehabilitate the individual mentioned above. That is the function of the correction method. If the citizen is granted parole of the penal facility without meeting agreed social conduct and ethics, the structure has compromised. In Massachusetts, the recidivism rate is the impetus of the packed populace in the state’s detainment

facilities. An examination directed by the state's Department of Correction's (DOC) Exploration and Arranging Division observed exactly 2,961 detainees who were delivered from the state's restorative framework in 1997. Within three years of their delivery, 41 per cent were detained again inside a state office for another crime. "More awful yet, under current condemning practices, almost 50% of all state detainees, who have truly been classified as the most genuine and vicious guilty parties, have no post-discharge oversight toward the finish of their imprisonment and ultimately leave the prison system with no support nor power to support their re-emergence.

In 2002, 67% of the prisoners were released for good conduct; the remaining 33% were given amnesty. The lack of monitoring of released inmates is also a big source of delinquency. Angela Antoniewicz of the Alliance for Criminal Justice Reform in Massachusetts found that, in 1990, five percent of those discharged from the Maximum Security Prison was released before parole. Antagonistically, in 2002 there was a 240% expansion in the number of detainees delivered without being doled out to parole, an aggregate of 12%. Unintentionally, 58% of the detainees delivered from a most extreme security office in Massachusetts were indicted for another offence within three years. This is significantly high when contrasted with the figures for the territory of Texas, which has the second biggest remedial framework. In 2002, just 5.8% of the most extreme security prisoners were delivered without the chance for further appeal. The recidivism rate for the greatest security populace was 28.3%, not exactly 50% of that in Massachusetts.



### **2.11.3 Effects of Overcrowding on available resources**

Prisoners are in a restorative office for being socially insubordinate, showing degenerate conduct, and additionally participating in socially unsuitable acts. Consequently, the remedial office must keep such an individual until they have become restored and are prepared to be socially mindful. To achieve such an undertaking, restorative offices give instructive, recovery, professional, and preparing programs (Antoniewicz, 2014; Nirschl et al., 2013).

Overcrowded prisons lead to fewer chances for detainees to enroll in these services. The effects of this on the integration of inmates back into society are detrimental. The services aim to resolve the difficulties that prisoners face in their reintegration into society. In light of an investigation of Massachusetts detainees who took an interest in the instruction program, their recidivism rate diminished by 25 to 50%. In the Massachusetts state restorative offices, 47% of the prisoners kept in 2002 were without their secondary school recognition or an equal General Educational Development (GED) endorsement. 14% of those prisoners had not made it past the eighth grade during their young adult school years.

In 2002, 4,000 detainees required a GED yet just 321 had the option to enlist into a GED program. Just 17% of the prisoner populace had the option to take an interest in any instructive program. A convincing purpose behind such low numbers is the way that solitary 3% of the DOC spending plan is apportioned for detainee programs. Inside that, the financial plan for prisoner instruction and preparing programs has diminished by 43% from 2001 to 2004 while 36 full-time instructors were laid off in 2001 because of the cut-moves in jail training. Therefore, the

instructive programming, which has appeared to profoundly affect prisoner conduct, has seen major financial cuts even amidst the restorative framework being stuffed (Antoniewicz, 2014; Nirschl et al., 2013).

#### **2.11.4 Effects of Overcrowding on Inmates**

Difficulties occurred, both mentally and physically, as socially defiant people were confined for long periods. Overcrowding has been shown to result in a loss of self-discipline due to social pressure as well as complacency and frustration. Hostility is another outcome created by stuffed detainment facilities on prisoners. This forceful conduct comes from the opposition for space, assets, and poise that the need isn't for more space for detainees, but instead for little or moderate measures of stay with some level of protection".

#### **2.11.5 Effects of Overcrowding on Housing**

In a particular manner, stuffing has resulted in accused parties being ordered on the grounds of the space available as opposed to the protection standard and the projects usually appropriate for the wrongdoer. The effect of wrongly characterizing inmates is that it eases their passage across the redress system. In case of a detainee needing medium protection (John Howard Society, 1996), is set in the greatest security remedial office, the routine, projects, and recovery programs furnished may not concur with the requirements of the detainee. This causes an easing back of the prisoner's movement through the framework. By being set in a higher security office, there is a lesser probability that the prisoner will be delivered on acceptable conduct. In many cases, the detainee is marked as an "inability to change", which in this manner does not meet the prerequisites of the restorative framework. This is

contrary to the restorative framework meeting the prerequisites of the prisoner for recovery. There are significant expenses, both financially and as far as restoring the detainee, with mistakenly ordering detainees in a remedial office. As per Antoniewicz, in Massachusetts remedial offices, it costs on normal \$43,000 (Antoniewicz, 2014) every year to house base security to the medium-security prisoner, while it costs \$48,000 (Antoniewicz, 2014) yearly to house the greatest security detainee. The rehabilitative expenses of lodging prisoners in an office whose security level surpasses that required for the detainee are that conceivable incidental restoration, preparing, and treatment assets are being spent on the prisoner. This pattern is predominant in the Massachusetts remedial framework. Between June 2002 and June 2004, five of ten least security offices were shut. 632 (Antoniewicz, 2014) beds were lost because of the closings. With the loss of these beds, detainees who might have once been housed there as least security prisoners presently are housed in higher security offices. Antoniewicz's realities show that accordingly, there was a 209% decline in the number of prisoners housed in the least security offices (Antoniewicz, 2014).

## **2.12 Classification of Prisons**

In Romania, the prisons are situated by the sort of prisoners, by their sentence. In Romania, there are male correctional facilities that vary by security levels [www.gov.ro]. In the U.S., there are correctional facilities for women and minors and crisis centre correctional facilities. In each country, the facilities are located by the type of prisoners (Moldan, 2012). In the US, we have two main types of institutions: jails and prisons. The prisons are most often carried out by sheriffs and/or municipal authorities and are meant to hold people facing trial or serving a

short term. Prisons are administered by local departments and the Federal Parole Office (BOP) and are built to detain prisoners who are convicted of crimes [<http://sheriff.org/>]. The different workplaces contrast by security levels stretching out from least and medium-security to close security to most prominent security and super-max. In the UK are assembled in shut and open confinement offices. Contemplating the legitimate principles there are the going with sorts of prisons: state confinement offices, private correctional facilities and crossbreed prisons. State correctional facilities are created and run by the express, the guardians are public specialists. This sort is found in the US, UK or Romania. Private confinement offices are built and administered by a free head and are standard in the US. The state pays a cost for the prisoners in correctional facilities care. Cream prisons are the one's difference in an association between the state and a private speculator. There are two sorts of crossbreed prisons: worked by an exclusive business and run by the state (in France and Brazil) and confinement offices work by the state and regulated by a free chief (in the UK). As one can watch the plans starting in the relatively recent past rely upon natural models (sex, age), sentence and bad behaviour and strategies for a record (Moldan, 2012). This request doesn't ponder the limit of a prison and the spot of a prison in the overall population. The inspiration driving a prison is to reestablish the people that presented an unlawful exhibit and to detach them from the organization until they deal with their commitments, the authors say. However, we can perceive a symbolic activity, a picture for power and reparation in a fanatic culture, they say (Moldan, 2012).

## **2.13 Facility Design and Construction**

### **2.13.1 Jail Structure and Design Characteristics**

Most detainment facilities utilize twofold inhabitation, roosting a few detainees into quarters planned for one. A large number of these structures are far from arriving at the prerequisites executed by the Council on the capability of Rectifications. Numerous prisons are important for multifunctional structures and regularly go about as the province town hall, the sheriff's office, or the police headquarters (American Correction Association, 1991). The jail engineering of the original goes back to the eighteenth century. Cell columns comprised of independent cell blocks confronting wide enclosures, or warm-up areas. Detainees experienced their days and evenings like confined creatures and had no collaboration with their guardians. Much of these prisons have been superseded by larger facilities, but there is a tiny number along the eastern seaboard and the north-eastern constellation of the US. They have been known for such a long time by selective admission to any clean office (counting latrines).

The second time the correctional facilities see a direct turn of events, with separate inhabitant cells and quarters balanced together with entries. The last can be sorted at exceptional edges with a spoke-like outcome. As in the case of its critical predecessor, it was suggested that the newer edition could operate with workers at any cost. Several other penitentiaries use closed-circuit television (CCTV) as well as sound observation to expand the surveillance and regulation of inmates by staff. Again, their relationship gives no interaction between the prisoners and the staff. Oversight is affected by intermittent prison lobby and production staff watches. As per Public Prisons Establishment (1985), about 1000 zone and wide city jails were

operated in the 1970s and 1980s, making for around 30% of the nation's restorative offices at that period. Despite situations that may be common, these workplaces have encountered comparative inadequacies that have tortured their trailblazers, including room and program inadequacies, amassing, loss of physical space between various categories of inmates, and a swarm of aid problems (Prisons Establishment 1985).

Although most of the territories and regions tended to follow obsolete prison plans while constructing new remedial offices, a third-age prison started to be built in the mid-1970s. Within the U.S. organization. Prisons Authority and the Rule Usage Aid Association (LEAA) of the U.S. Part of Importance, a few basic driving companies have been assigned to make arrangements for a further period of isolation offices and penitentiaries. At the same time, LEAA supported the enhancement of the Public Standards for the Organization and Strategy of the Common Place and the Adult Healing Persons Community (1971) at the Illinois Community. The guidelines were a timely reaction to the 1968 Omnibus Bad Behaviour Control and Safe Street Display, which centred on amendments under Section E of the 1971 Correction. The requirements contributed to the development of a Public Clearing house for Criminal Value Masterminding and Architecture at the School of Illinois. LEAA, through the clearing house, provided federal support for tasks and workplaces that were baffling for front-line procedures. The recommendations were of an interdisciplinary variety and obtained an open-structure approach. This viewpoint dwells on the interrelationship between probation, the police and the judiciary, as well as on relevant and interrelated relationships and events that include a well-arranged and unsurprising solution to the nation's issues of bad behaviour. The

directives, along with government gifts and a vast range of unique assistance and adventure showcases have been a tremendous turning point in the country's expedition to strengthen its healing systems.

Jail confirmation is typically based on an open booking idea, with workers organized behind a counter. Various restorative offices are important for multifunctional public institutions, providing courtrooms and associated public and social organizations. The Metropolitan Therapeutic Persons Administration Organization is a third-age prison in Los Angeles, San Diego, Miami, Chicago, Brooklyn, Manhattan, and San Juan is a third-age prison, some of which expanded in 1974 and 1993. Detainee housing depends on a thinking device or module. This indicates that the dwelling is divided into packages that run from eight to 46 inmates. Each module is continuously manned by specially arranged prison watches. Modules are free to enter the housing of prisoners with visits, programming, questions and associated events. The well-known agreement removes the pre-requisites for the progression of inmates, increases security, and creates connections between prisoners and the therapeutic personnel. Within and outside consumptions and goods have a normalized situation in most housing areas, besides those used for monitoring and detachment. Much of the early administration of detainment facilities contain coverings, timber, upholstered beautifications, sprinkles of concealment and large signature illumination. Besides, housing units are furnished with counters, toilets, drinking equipment and telephones that are open to prisoners in the day quarters. There are some instances of their movement devices. The cells have a few bunks, a working area and a bench, running water, radios, and wide windows. Advancing evaluations of the sufficiency of third-age remedial offices

indicate that they have, for the most part, won in terms of offering a better and additionally binding condition for employees and prisoners (Farbstein et al.). As everyone would expect, analysis has related the introduction of the current office proposals to the regulatory role submitted, enhanced human relations skills of the therapeutic team, and comprehensive preparation for all of them (Zupan and Menke)

### **2.13.2 Facility Development Process**

The numerous stages of incarceration and incarceration preparation, design and development are well recorded in guides such as the NIC's Designing of Modern entities; government-produced guides such as that of the Nebraska Jail Model Board's Jail Preparation and Building Guide; the American Correctional Association's Design Guide for Safe Adult prison systems (American Correctional Association, 1983); and other documents such as the penitentiary Designing Facility (Farbstein, 1986). The office improvement cycle will differ as indicated by the size and nature of the undertaking, however, the authoritative standards will by and large continue as before. The cycle starts when a locale perceives the requirement for extra restorative space and finishes when this need has been met with new or rebuilt offices. Here is a short portrayal of the pertinent stages in this cycle.

#### **2.13.2.1 Need Assessment**

At the start of a push to build an office, an appraisal is made to completely comprehend the broadness and the particulars of a task. Normally, a council that incorporates strategy producers for the office, contacts from the region or state criminal equity and arranging divisions, public area delegates, and compositional and building advisors is shaped to play out this examination (Dickers & Reeder,



1987). The investigation ordinarily incorporates a meaning of both prompt and long haul needs; an investigation of existing offices; detainee populace projections; an assessment of how the requirements connected to the current criminal equity framework approaches and strategies, and a thought of foreseen framework changes.

#### **2.13.2.2 Master Plan**

Alternative strategies for addressing the needs defined in the needs evaluation report are integrated into the master plan. Alternatives discussed and reported in the master plan include the development and renovation or refurbishing of current buildings and running costs. During this process, visits to other newly built facilities are also done to examine alternative ways of addressing needs (Dikkers & Reeder, 1987).

#### **2.13.2.3 Mission Statement**

In light of past arranging choices, a project or mission explanation is created to address the reason for the organization difficulties of illumination on detainees of Ghana Penitentiaries; impacts of the poor illumination on detainees of Ghana Jails; and current jail convenience according to world standard and the philosophical bearing which will administer the activity of the office (Reeder & Dikkers 1987). The announcement should cover the entirety of the proprietor's needs and goals, and give a base to choices to be made during the rest of the periods of the venture.

#### **2.13.2.4 Architectural Program**

The agenda and operational procedures for the building are the key guiding force in determining goals and establishing the design curriculum. The software should specify how the facility will operate; identify all the spaces and operations that will

take place within these spaces; and the interaction seen between spaces. In short, this development process converts the strategic plan into details that the planner has to work out during the design phase.

### **2.13.3 Material Considerations**

#### **2.13.3.1 Material Selection Considerations**

The materials in thought for development ought to cling to the fire security prerequisites as directed by the 2003 Worldwide Construction law and any exceptional contemplations illuminated by the American Remedial Affiliation. Each structure has an alternate reasonable development type, contingent upon the utilization of the structure and its fire suppressant framework. This development type prompts a necessary imperviousness to fire rating which can fluctuate between components of the structure, for example, floors, inside dividers and outside dividers. To decide the fire rating required for a remedial office, the 2003 Worldwide Construction standard was referred to. The report states the method of construction of 1X or 1Y due to the restrictions of the structure. This lead to the selection of non-combustible materials such as concrete and steel.

#### **2.13.3.2 Composite Action**

Composite pillar and chunk frameworks were investigated as an option for both the office space and jail structure. Composite frameworks are depicted as having the solid floor section and the supporting steel shaft and braces cooperating to oppose the applied burdens. In a non-composite framework, the solid piece is said to traverse a single direction, from infill part to infill part. Likewise, with this framework, the chunk moves the heaps opposite into the part. On the other hand,

composite frameworks have the additional advantages of moving the heaps opposite between individuals yet besides corresponding to the part, in this way expanding the conveying limit. The composite activity can be created by inserting the top (compressive) rib of the supporting part in the solid section. It can also be created when the plastic pivot falls inside the trap of the pillar. The properties of both the steel and solid oppose shear powers to create the activity. The plastic hub falls exclusively inside the chunk, the solid properties decide the shear opposing limit. The two components act as one to oppose the applied burdens.

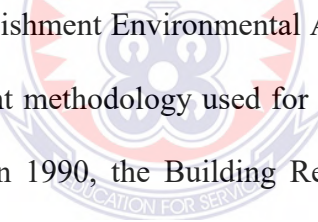
The advantage of designing composite motion is that heavier loads can be borne on the floor structure without the concurrent rise in beam and girder capacity. Production of complete composite action may contribute to an improvement of 33 to 50 per cent in the carrying capacity of the steel components than if the steel gravity system were working on its own. Relatively small participants would then be expected to bear the loads added if the continuous compliance was comprehensive due to improved load size and deflection power. Cost benefits associated with the use of smaller representatives can only be covered by the cost and construction of shear studs (Salmon et al., 1997).

#### **2.14 Challenges to Enabling Prison Accommodation**

Different studies have indicated that the issues of ineffectively ventilated structures and harsh convenience courses of action, developing jail populaces and congestion, detainee misuse, unhygienic sterile conditions, jail sicknesses and passing, hunger, food deficiencies and ailing health, absence of clinical consideration, and so forth remain the most well-known marvels related with jail offices over the world. These

helpless conditions in penitentiaries add up to brutal treatment and basic freedom misuse (UNODC, 2009; Amnesty International, 2012).

Jails being used today are regularly old and in a helpless condition. Many have deficient offices and administrations, which present significant difficulties in giving compassionate states of detainment and protecting consistency with pertinent public and global law, principles and rules. The most referenced test confronting Nsawam Medium Security Jails in the conveyance of convenience offices to detainees is the crowding of cells. This is intensified by lacking ventilation, bedraggled rooftop, roofs, sleeping cushions, and floor, and deficient latrine offices and helpless disinfection. (Boadu, 2014).



Building Research Establishment Environmental Assessment Process (BREEAM) is a management assessment methodology used for all-inclusive policies, systems and mechanisms. Assigned in 1990, the Building Research Establishment (BRE) sets guidelines for the ecological presentation of buildings through the preparation, recognition, construction and function phases which can apply to new activities or renovation plans. BREEAM reported that “at least 80 per cent of the floor area in the inhabited areas has a daylighting factor of 2 per cent or higher.” It is mentioned in the domestic building that 'kitchen 2 per cent, living room 2 per cent, dining room 15 per cent and working plane 80 per cent.

As shown in the earlier study of the UK Home Office of the Movement and Ethnicity Directorate of Cameroon (2011), the detention facilities in Cameroon are honestly packed, unsanitary and inefficient, aged and tarnished. Detainees are

housed in weather-beaten pilgrim prisons where the number of inmates is four to several occasions the first limit, whereas the detainee of Pennsylvania insists that his cell is legitimately ventilated, experiencing exceptional hot and cold, rat attack, among others, which contributes to barbarous care. Countless Israeli jail offices are also detailed on smothering heat in the middle of the year while getting cold in the winter, powerless disinfection, eerie streaks and auxiliary conditions that obstruct the welfare of prisoners (ICPS, 2012).

Amnesty International (2012) has additionally as of late expressed that everyday environments in Ghana's prisons are also vicious. As was seen at the time of the inquiry, a portion of the offices had no bathroom, had melancholy, and had less ventilation, messy kitchens, and simple clinics. As reported in the Human Rights and Labour (2011), these prisoners slept on their sides on mats or bare floors, turned to their toes to track minimal space, and even had to step cautiously between sleeping peers to the doorway to urinate, while in some prisons, detainees had to sleep in groups. Amnesty International (2012) and ACHPR (2004) combat that obstacles to correctional institutions will generally be resolved if the government creates budget conveyances to jails, assures that prisons are routinely analyzed by separate fundamental incentive partnerships, and encourages prisoners to receive consent to lawful attorney containment offices to agree to the least requirements. The participation of general society groups, NGOs and religious meetings in customary visits to detention centres, the encouragement of government aid to prisoners by offering help for food, legitimate guides and well-being administrations, the regulation of care and fundamental freedoms justice issues

would make a major contribution to mitigating the problems of correctional institutions (ACHPR, 2004).

### **2.15 Summary of Literature Review**

The summary of literature review stresses that various facts of prison services have been undertaken in relations to inmate's wellbeing and building structure. The study revealed how other nations handle their prisons as well. However, several of prison services are constrained by the existing government regulations that sometimes suffocate management. The body of literature is articulating types of prison across the globe to study the relevant prison differences among these countries. Several studies both global and local have been reviewed in the empirical studies.



## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter examines the approaches that were adopted in conducting this study. It highlights research design, the population of the study, study area, data collection procedure, method of data analysis and ethical consideration.

#### 3.2 Research Strategy

Research strategy as defined by Dinnen (2014) refers to a precise plan of action that guides the thoughts and efforts of a researcher and enables him/her to systematically conduct research to produce quality results. Creswell and Creswell (2017) state that the adoption of a research strategy for a study is dictated by the nature of the study and the resources and time available for the study. Creswell and Creswell (2017) further that there are three main research strategies, namely quantitative, qualitative, and mixed research strategies. Quantitative research emphasizes objective measurement and the mathematical, numerical, or statistical analysis of data collected through surveys, questionnaires, and polls, or by using computational techniques to manipulate pre-existing statistical data (Williams, 2007). Qualitative research, on the other flank, is a process of naturalistic enquiry that seeks an in-depth understanding of social issues within their natural settings by gaining an understanding of underlying reasons, motivations, and opinions. The quantitative research strategy has the merit of generating a general insight into the research problem because of the large number of participants involved in the study. It, however, has the demerit of not being able to generate an in-depth insight. The quantitative research strategy has the merit and demerit of generating an in-depth

insight into the research problem yielding findings that cannot be generalized respectively, because of the small number of participants involved. The mixed research is a purposeful integration of both quantitative and qualitative methods to maximize and minimize the strengths and weaknesses of the two methods respectively. This study adopted qualitative research in assessing the illumination levels of prison accommodation in Ghana. This research strategy was adopted to precipitate findings that can be generalized for the whole population.

### **3.3 Research Design**

Labaree (2009) explains research design as the set of methods that are employed to integrate the different components of a study logically and coherently to effectively address the research problem. Labaree (2009) furthers that research design details the blueprint for collecting, measuring, and analysing data. Creswell and Creswell (2017) outline the descriptive, explanatory, and exploratory type-researches as research designs. Aside from the three research designs enumerated by Creswell and Creswell (2017), Jalil (2013) also identifies experimental, semi-experimental, meta-analytic, review, and correlation as types of research designs. Descriptive research observes and describes a behaviour or a research problem by clarifying the relationships between the variables of the problem. Williams (2007) avers that descriptive research answers the questions of what, who, when, and how. Explanatory research seeks to delineate the cause-effect relationship of a research phenomenon. Creswell and Creswell (2017) expatiate that explanatory research goes beyond descriptive research by proffering an in-depth reason for a phenomenon or problem that was only observed by a descriptive study. It thus seeks to answer the question 'why'. Labaree (2009) describes exploratory research as a study that seeks



to delve into a new phenomenon by forming hypotheses, evaluating concepts, and gaining an understanding of the problem. Kowalczyk (2015) contends that descriptive research is essentially categorized into three: case study, survey, and naturalistic observation. According to Alpi and Evans (2019). Mugenda et al (2003) define descriptive research as the process of collecting data and analysis to describe the specific phenomenon in its presence of affair and linkages between different factors at that time. The main objective of this study is to assess the illumination levels of Prison accommodation in Ghana.

### **3.4 Research Approach**

The present study adopted a deductive and inductive approach to achieve the Theory structures and informs social work research. Conversely, social work research structures and informs theory. Blackstone (2012) emphasizes that students become aware of the reciprocal relationship between theory and research when they consider the relationships between the two in inductive and deductive approaches. In both cases, theory is crucial but the relationship between theory and research differs for each approach.

Inductive and deductive approaches to research are quite different, but they can also be complementary. Let's start by looking at each one and how they differ from one another. Then we'll move on to thinking about how they complement one another

Inductive approaches; When a researcher utilizes an inductive approach, they begin by collecting data that is relevant to their topic of interest. Once a substantial amount of data have been collected, the researcher will take a break from data collection to step back and get a bird's eye view of their data. At this stage, the researcher looks for patterns in the data, working to develop a theory that could explain those

patterns. Thus, when researchers take an inductive approach, they start with a set of observations and then they move from those particular experiences to a more general set of propositions about those experiences. In other words, they move from data to theory or from the specific to the general.

Deductive research approach is most associated with scientific investigation. The researcher studies what others have done, reads existing theories of whatever phenomenon they are studying, and then tests hypotheses that emerge from those theories (Neuman, 1997).

Deductive approach– when a researcher studies what others have done, reads existing theories of whatever phenomenon they are studying, and then tests hypotheses that emerge from those theories. The deductive approach begins with a theory, developing hypotheses from that theory, and then collecting and analyzing data to test those hypotheses (Creswell and Creswell, 2017).

Inductive approach– when a researcher starts with a set of observations and then moves from particular experiences to a more general set of propositions about those experiences. Inductive and deductive approaches to research can be employed together for a more complete understanding of the topic that a researcher is studying (Creswell and Creswell, 2017).

Sherman and Berk (1984) in their research and the associated follow-up studies demonstrate that researchers can start with a deductive approach and move to inductive approach when confronted with new data that must be explained. Researchers may not set out to employ both approaches in their work, but sometimes their use of one approach leads them to the other.

This led me to adopt both deductive and inductive approaches as to my research objectives posed in chapter one.

### **3.5 Study Area**

The researcher considered two prisons as its study area, namely: Nsawam medium security and Koforidua local prisons. These two prisons were chosen because of their highly populated of prisoners. Nsawam medium security prison has the highest number of prisoners among all the prisons in Ghana and Koforidua local Prison is also the most densely populated prison among all the local prisons in the country and even than some of the central prisons like Ho central, Wa central and Navrongo central prisons.

### **3.6 Population of the Study**

In connection with the topic matter of the study (Assessment of Illumination Levels of Prison Accommodation in Ghana), the target population of the study consist of the Correctional Officers-in-charge and Prison Administrators of Nsawam Medium Security and Koforidua Local Prisons.

#### **3.6.1 Nsawam Medium Security Prisons**

Nsawam medium Security Detainment facilities used to be the biggest among the forty-three (43) jail foundations in Ghana and had the most raised people of both staff and prisoners in assessment with masses of various prisons the country over before the appointing of the Ankaful Maximum Security Detainment facilities in the year 2011. Be that as it may, at present, Nsawam medium Security Penitentiaries, which is a medium appraised detainment facilities is as yet the most elevated

populated as far as both staff and detainees in examination with populaces of other 42 Prisons the nation over (Ghana prison service annual report 2019). Henceforth, the ruling of the Nsawam Medium Security Detention Center is one of the contexts for the proposed work. It is based in Nsawam, a town in the eastern part of Ghana that has been located approximately 40 km northwest of Accra, the capital of Ghana. The Nsawam Medium Security Prison was established in 1960 by a legal ruling to moderate strain in the new Central Confinement Offices. CSP J. K Arhin-Acquah was the first Authority In-Charge when the prison got its first detainees on 10th October. However, the prison was finally appointed in 1961 with a restriction of 851 prisoners and an ordinary of 20 prisoners for every cell. Officially, Nsawam Medium Security Detainment facilities are administered by the Akwapim South Civil Gathering. Be that as it may, the penitentiaries is a foundation under the Ghana Detainment facilities Administration (GPS) which is liable for the protected guardianship of detainees in Ghana, just as their government assistance, renewal and restoration, and in the more extensive sense, it is under the ward of the Ministry of Interior ([prisonministryghana.org](http://prisonministryghana.org)).

Considering the standard of protection and the essence of the re-arrangement procedures of different institutions across Ghana, Nsawam Medium Security Jails is called the Medium Security Confinement Office where all groups of prisoners are held. It needs to trade ready-made workplaces to provide inmates with effectively self-employed capabilities to re-enter society after they have been arrested. Thus, Nsawam Maximum Security Inmates take over the guardianship of Long Sentenced Captives, Lifers and Condemned detainees as well. The fundamental difficulties that face the Nsawam Medium Security Prisons among others incorporate tenacious

money related requirements coming about because of lacking budgetary assignment for reconstruction programs, jail congestion and helpless sterilization, insufficient preparing offices, deficient sheets and obsolete jail foundation and helpless convenience structures. Nsawam Medium Security Jail after development was to take up to 720 prisoners yet it presently has a populace of a normal of between 3,800 -4,000 detainees.

### **3.6.2 Koforidua Local Prison**

The Koforidua Local Prison, one of the largest Local Prisons in Ghana, the Koforidua Jail, which was established in 1946, goes back to the colonial period. (prisonministryghana.org). Sources have it that this location was once a wartime magazine warehouse that was dismantled during the Second World War. This was turned into a jail and a gazette as such in 1946. Nevertheless, owing to the reality that it covers a larger catchment area: New Juabeng Municipalities, Suhum Kraboa Coaltar, Afram plains, East Akyem, Yilo Krobo, Fanteakwah and Kwahu Districts, the figure fluctuates with an estimated lock-up of approximately 650 and 700 prisoners.

At the time of its establishment, the jail had a total inmate capacity of 60. Before then, an expansion of the work was conducted, taking the authorized complement of 400 perpetrators. Of logistical ease, surplus inmates are moved to other detention institutions if and where required with the prior consent of the Director General of Prisons. The Koforidua Prison is situated at Koforidua Effiduase sector-6-block K which covers an area of 6.23 acres. There are six buildings in the prison: four central

buildings of cells that hold convicts, and two blocks handle remands and courts. Prisoners 'types include Convict Prisoners, Remand and Prisoners' Appeals.

### **3.7 Sampling Size and Method**

#### **Selection of Interview Participants**

The selection criteria used were the following with specific details on experience and position in the prison services.

- ❖ Worked in the prison system for at least eight (8) years. These are the results of years spent in the prison service, dealing with its problems and witnessing the many policy implementations in regards to illumination.
- ❖ Worked in a prison for at least six (6) years. On-field or on-site experience is essential for understanding how these officers felt when exposed to the site with or without sufficient illumination.
- ❖ With at least five (5) year of experience in an administrative role in the prison service business. The administrative job would aid in determining whether or not policies are being enforced at the jails, as well as how these rules addressing lighting are being applied on the ground.

Sampling was done on a judiciously chosen fraction of the units of a phenomenon to aid in spreading the information gained from that fragment's inquiry to the total from which the fragment was chosen. The investigation utilized an all-out sample size of 60 Prison Officers from both Nsawam Medium Security and Koforidua Local Prison, it included 36 Correction Officers and 24 Prison Administrators. Interview was used to elicit information from the participants through a purposive sampling method based on their accessibility.

### **3.7.1 Instruments for Data Collection**

Semi structured interview techniques were used to gather information from all the 60 participants for this thesis and experiment.

#### **3.7.1.1 Experimental studies**

A photometer was used to determine the strength of light emitted by an uncertain source from a standard setting (a Photometer is an instrument used in measuring the amount of light in a room, it has a sensor that measures the light falling on it and provides the user with a measurable illuminance reading). The values obtained by the photometer were in the lux symbol (lx) which represents the SI unit for illumination and luminous emission, calculating the luminous flux per unit field. This study was performed in twenty-five (25) cells randomly selected (using simple random sampling) from two Prisons in the Eastern Region (Nsawam Medium Security, seventeen (17) cells and Koforidua Local Prisons eight (8) cells). All the cells at Nsawam Medium Security were numbered on pieces of paper i.e. 1-50 cell and 17 cells were picked out of the 50 cells, and the same was done at Koforidua Local Prisons, out of the 22 cells 8 of them was selected. Daylight Factor (DF) is express as a percentage of the amount of DF available indoors compared to the amount of unobstructed daylight available outdoor. Only daylight was used as the source of lighting even in the cells which had supplementary artificial light. Illuminance level readings were done using Lux meters (LX 1330B) which met the climatic requirements of the geographical location of this study.

The prison cells were accessed through an application of permission to the Director General of Prison to access these two prisons for research purpose, a copy of the application was inserted at the appendix. Readings for mornings were at 8 am while afternoon readings were done at 1 pm. The working plane height chosen was 0.72m for desktop height and measurements were done using four parameters: Door closed morning (DCM), Door closed afternoon (DCA), Door opened morning (DOM), Door opened afternoon (DOA). The experiment was done without anybody in the cells. The photometer was kept in the direction of the brightest beam. It was moved around to reach a location with the highest pressure (illuminance). Remaining at the same position from the light source.

Daylight effect is the average of the light level inside the structure to the light level outside the structure (thus  $DF = \frac{E_i}{E_o} \times 100$ ). VELUX Group,(2014).

DF represents the Daylight factor.

$E_i$ ; illuminance due to daylight at a point on the indoor working plane.

$E_o$ ; simultaneous outdoor illuminance on a horizontal plane from an unobstructed hemisphere of overcast. To get the 'Eo' for the examination, the daylight was recorded outside the cell in the yard for the perusing and the information was recorded each time as 1. Then again, the 'Ei' was acquired inside the repression of the cell. For exact readings, different positions were expected inside and outside the cells. This was done every day for about fourteen days for both the 'Ei' and 'Eo' and the normal lux was gotten for the estimation of the Sunlight Factor. The normal sunlight factor is the normal indoor illuminance (from light) on the working plane inside a room, communicated as a level of the concurrent open-air illuminance on a flat plane under an unhindered CIE Standard Cloudy Sky for all the cells which were



considered for this test. Photographs were not allowed in the prisons so the researcher couldn't take pictures to that effect.



## PHOTOMETER

The structural aspect of the cell was measured through the usage of a tape measure. To provide an exact calculation, a second calculation was taken after the first measurement was taken to test for precision. The number of windows and doors were still weighed after the tape measure had been taken into account. The equation was then used to measure the square meters ( $m^2$ ) of total field space using the following formulas: ***Total Area Space = Length (L) × Breadth (B).***

### 3.7.1.2 Interview

In terms of data collection, interviews are more adaptable and dynamic than questionnaires (Bloch, Phellas, & Seale, 2011). These interviews can also collect data in much greater detail and depth. It may also be a more sensitive and friendlier technique of data collection, as well as an easier way to derive structures from responses (Talmy, 2010). Changes in replies can thus be attributed to individuals. A standardization of questions may be established by conceptualizing questions in a way that applies to all respondents (Bloch, Phellas, & Seale, 2011). However, in most cases, this is not the case with interviews because questions may be framed differently for various respondents. In general, interviews are used to collect qualitative data, and coding can subsequently be applied to the replies (Ibid). Surveys use questionnaires, which are often given to a large number of people. This is demonstrated in quantitative research. Because the interviewer is there, it is possible to ask difficult but explainable questions; interviews are generally longer because there is more time to ask follow-up questions; there is also greater coverage in terms of questions asked (open questions), and visual aids may be utilized to clarify; interviewer can also control the environment and setting in which the interview takes place (Ibid).

However, problems have been raised in interviews, particularly in terms of expenses, which may limit the scope and breadth of the study. There may also be prejudice throughout the study process, which might affect how reliable the results are. Biases can also be evident in how the questions are phrased or in the interviewer's own beliefs. Telephone interviews and computer-assisted interviews have emerged as novel methods of conducting interviews (Bloch, Phellas, & Seale,

2011). Due to the extreme savings in time and money, these methods have grown more convenient for both researchers and interviewees. Responses can also be typed into the computer (Ibid). As a result, these techniques of conducting interviews have become the less expensive and faster way of conducting surveys. There are also fewer impacts seen concerning the interviewer. As a result, the interviewer's characteristics would have less of an influence on the replies (Bloch, Phellas, & Seale, 2011). These techniques are also less invasive than face-to-face interviews.

Although these data gathering techniques are generally descriptive, the qualitative methodology was utilized to collect all data acquired through interviews and results (Kumekpor, 2002). The findings of top management and research samples were classified into distinct categories to discover recurring patterns, behaviours, and inter-relationships. This study's qualitative documentation comprised verbatim recordings or collected interview transcripts, comprehensive or written testing reports, and more thorough direct interpretations of the evaluation's impacts, the majority of which were gathered during data analysis. This textual data was experimentally examined using data analysis to produce interpretations and reasons; the study employed in-depth readings of raw textual data to extract ideas, patterns, or models from raw data reports. The researcher prepared some leading questions to ask those he is going to interviewed, some of the questions read like this; can you tell me a bit about your position with Ghana Prison Service?, how long have you been with Ghana Prison Service?, what in your opinion is to be considered when building a prison?, could you please comment on the illumination of the prison accommodation of the prisons you work with?, what standards of illumination levels are prison accommodations in Ghana expected to meet?, what strategies could be

adopted to improve the illumination levels of prison accommodations in Ghana?, etc. These lead to follow up questions which informed the researcher into in-depth knowledge of his subject matter of “Assessment of illumination levels of prison accommodation in Ghana: a case study of Nsawam medium security and Koforidua local prisons”. This type of interview is known as semi structured.

Interviews are data collecting procedures in which prepared questions are asked of respondents to obtain insight into the study topic (Harrell & Bradley, 2009). These interviews often entail a face-to-face encounter between the interviewer and the responder. Phone or video interviews are also used in some situations (Harrell & Bradley, 2009). Interviews were conducted with thirty respondents from each of the two prison agencies chosen for this study. Appendix two contains the permission approval form for the interview template used in the survey.

#### **3.7.1.2.1 Semi Structured**

The semi-structured interview is a qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions. ... Researchers who use semi-structured interviewing develop a written interview guide in advance. In this type of interview, the interviewer may prepare a list of questions but won't necessarily ask them all, or touch on them in any particular order, using them instead to guide the conversation. In some cases, the interviewer will prepare only a list of general topics to be addressed. In this, the interviewer is at liberty to deviate from the set interview questions and sequence as long as he or she remains with the overall scope of the interview. In addition, a semi-structured interview makes use of an interview guide which is an informal grouping of topics and questions that the interviewer can ask in different ways. The semi-structured

interview is the most common form of interviewing. In it, the interviewer has worked out a set of questions beforehand, but intends the interview to be conversational. To do so, the interviewer can change the order of the questions or the way they are worded. It is conducted with a fairly open framework which allows focused, conversational, two-way communication. The interviewer follows a guideline but is able to follow topical trajectories in the conversation that may stray from the guide when it seems appropriate. Not all questions are designed and phrased ahead of time. The majority of the questions are created during the interview, allowing both the interviewer and the person being interviewed the flexibility to go into details when needed. Conducting a good semi-structured interview requires a thoughtful planning which includes: identifying respondents, deciding on the number of interviews and preparing the interviews. After having conducted the interview, a comprehensive analysis is needed. The sixty (60) officers who were interviewed all ascertained that the prisons were all not properly lit according to how they see it and from the interview they point thing out to that effect.

### **3.8 Data Analysis**

.The qualitative technique was used to collect all data obtained from interviews and findings, although these data collection approaches are typically descriptive (Kumekpor, 2002). Top management and research sample results are grouped into unique categories to identify recurrent patterns, behaviours and inter-relationships. Qualitative documentation supporting this study included verbatim recordings or compiled interview transcripts, detailed or written testing reports and more detailed direct interpretations of the effects of the evaluation, most of which were obtained

during the data analysis. This textual data is empirically analyzed using data analysis to create meanings and justifications; the study used in-depth readings of raw textual data to derive concepts, patterns or models from raw data reports. The researcher used the coded rating like (1) Strongly Agreed, (2) Agreed and (3) Not Agreed. Strongly Agreed that the inmates cells were not adequately lit (illuminated), 'Agreed' but not sure of it but have some doubt and 'Not agreed' that the inmates cells were adequately lit. All these were from the interview that was conducted by the researcher.

### **3.8.1 Qualitative Data Analysis**

#### **3.8.1.1 Emerging Themes**

Thematic analysis is a method of analyzing qualitative data. It usually applied to a set of text, such as interview transcripts. Emerging themes are a basic building block of inductive approaches to qualitative social science research and derived from the life world's of research participants through the process of coding. Theme is used as attribute, descriptor, element, and concept. As an implicit topic that organizes a group of repeating ideas, it enables researchers to answer the study question. It contains codes that have a common point of reference and has a high degree of generality that unifies ideas regarding the subject of inquiry (Buetow, 2010). It is considered a thread of underlying meaning implicitly discovered at the interpretative level and elements of subjective understandings of participants (Mojtaba, Jacqueline, Hannele, & Sherrill, 2016). This current study made use of word repetition from the feedback from the interviewees to derive the study themes. It was revealed that the interviewee repeatedly referred to problems associated with *structural proportion, small cell space, inadequate breathing space, and not enough*

*light in the cells*. These repetitions indicated to the researcher that these ideas were relevant, recurring themes in the inmate's prison life.

This sort of study tries to narrow down relevant information from several sources, obtaining data on the research topic in the process. Descriptive data aids in the interpretation of data and might include interview transcripts, survey data, videos, and images. It generally focuses on the researchers' impressions and interpretations. The data obtained is used to analyze the themes.

Each participant was questioned about the lighting levels in their prisons, as well as the causes and consequences of lighting on inmates in Ghanaian prisons. The parts that follow summarize their responses to the questions that were posed to them. Data gathered from respondents covered their job experience with the prison service and their field experiences, their experiences with lighting, and their experiences with ventilation in the jail service. These questions were all connected to the goal of determining the reasons for the present condition of prison housing in Ghana, examining the current state of illumination in Ghana Prisons, and assessing the illumination levels on Ghana Prison.

To develop an understanding of the interviews, the researcher used themes from the interviews. The interviews were analyzed independently for each question. All conversations were transcribed and then meticulously and frequently reviewed to produce codes relating to the topics posed. Each interview was examined independently. Following the creation of codes (ideas), the researcher created themes that are closely related to the issues posed. In addition, the researcher gives

the number of individuals that agreed or provided comparable responses to the various topics.

Experiment design involves a careful balancing of numerous criteria such as “power,” “generalizability,” several types of “validity,” practicability, and cost. For the time being, you should be aware that improvements to one of these characteristics frequently harm others. An experiment with the highest possibility of generating relevant evidence to alter the existing state of knowledge in a certain scientific subject will emerge from a careful balance of these qualities in advance. On the other hand, it's a shame that many experiments have preventable faults. Statistical analysis can very rarely save the experimenter in these situations. The photometer was utilized by the researchers to obtain personal measurements from the study region. The photometer was held directly in the line of the brightest beam by the researcher. As a result, the photometer was moved around until the maximum intensity was found. Moving the photometer in one direction while remaining at the same distance from the light source, until the light intensity reduces to 50% of its maximum level. While light output is measured in lumens, light intensity is measured in lumens per square meter, abbreviated as lux.

All values were presented by using the SI unit lux (symbol - lx) of illumination and luminous emittance, measuring luminous flux per unit area. Average Daylight factor was used in the analyses.

Note that the Daylight factor  $DF = \left(\frac{E_i}{E_o}\right)$

Where ‘E<sub>i</sub>’ is illumination due to daylight at a point on the indoor working plane. ‘E<sub>o</sub>’ is simultaneous outdoor illumination on a horizontal plane from an unobstructed hemisphere of overcast. ‘E<sub>o</sub>’ and ‘E<sub>i</sub>’ Obtained from the photometer



studies were used in calculating the Day Light Factor. To obtain the 'Eo' the daylight was measured outside the cell in the yard for the reading and the data was recorded always as 1. On the other hand, the 'Ei' was obtained within the confinement of the cell. The readings were taking twice in the morning at 8am, door closed (DCM) and door open (DOM) and also twice in the afternoon at 1pm, door closed (DCA) and door open (DOA). The four reading per a day per a cell were averagely recorded down for all the cells that were randomly selected for 14 days and presented in the table in chapter 4.

### **3.9 Ethical Considerations**

Interview participants to the study must participate voluntarily and without pressure (Economic and Social Research Council, 2011). In all cases, researchers must inform their subjects that they have the right to decline or refuse to participate further if they choose to discontinue their involvement. There must be no compulsion of study volunteers for legitimate results to be produced (Ibid). This is related to clandestine studies and research deceit.

All of these ethical criteria were strictly followed in this investigation. Particularly during the main data collecting phase, the researcher ensures that all required rights are obtained from the organization from whom the data was acquired (Rossi et.al, 2009). This was accomplished by drafting a consent form and delivering it to the organization's supervisors. If the officers identified operatives to engage in the study, their input was channeled to the researcher in the same way that it was channeled to any other research participant. This indicates that officers were not

required to route their opinions through superiors; instead, they were handled in the same manner as any other research participant.

The permission form stated the topic of the investigation, as well as the purpose for the study and the reason the organizations were asked to participate in the study (Emanuel, et.al, 2000). The consent form also specified the responsibilities that the researcher expected the organization to play. Furthermore, the permission form had to provide guarantees that data gathering would be done anonymously and privately (Munhall, 1988). No responder was identified by name as part of the necessity to maintain confidentiality and anonymity. According to Portney and Watkins (2000), when the primary data collecting exercise and all data analysis were done, the researcher returned the completed instruments to the firms to be destroyed. According to Babbie (2007), all techniques to social research have placed participants in indirect, if not close, contact with their topics. This raises legal concerns.

The research ethics paradigm is based on many concepts. One is that research must be evaluated and carried out in a way that promotes quality (Economic and Social Research Council, 2011). This is at the heart of research and requires little explanation. It would suggest that researchers must ensure that the creation of proposals is based on a commitment to the researcher that accounts for the best quality in research from the start (Ibid). Accountability encompasses several concepts, and quality is based on a successful scientific design, the potential of anticipated difficulties and how these issues will be managed, as well as the various ways objectives, will be accomplished (Ibid).

Research participants and staff must be educated on the aims, procedures, applications, and participation in research, as well as any potential dangers (Economic and Social Research Council, 2011). Different research conceptualizations allow for differentiation. This idea strengthens the basis of informed consent (Ibid). Informed consent refers to the practice of presenting as much information as possible about research for participants to make an informed decision about their expected involvement (Hill, 2005). In general, such data must be written down and supported by study subjects. In cases where permission is not required, it must be fully and rationally justified.

As a result, the researcher's independence must be clearly stated, as must any conflicts of interest (Economic and Social Research Council, 2011). The study must be conducted in such a way that it promotes professional legitimacy in its design; the direct and indirect participation of colleagues and relevant collaborators must be acknowledged (Harris & Atkinson, 2013). According to the Economic and Social Research Council (2011), investigators must ensure that no conflicts of interest exist, and the link between financing and researcher influence on findings is also specific, particularly when it comes to the application of later data.

Researchers must also consider general result publication, where they are seen by the media to be associated with adequate publication in the study (Economic and Social Research Council, 2011). Respondents' involvement should neither be influenced by media publicity nor should their confidentiality be violated (Harris & Atkinson, 2013). The connection with the media must be founded on the actions of the research team, which includes the researcher.

### **3.9.1 Considerations for Confidentiality**

The primary issues for the secrecy of the data collecting procedure for this research formed a fundamental problem in the ethical approval as well as the design without jeopardizing response quality (Economic and Social Research Council, 2011). This meant that anonymity was important, therefore no one was asked for their personal information; only official positions were required for the survey because they showed the level of responsibility that respondents had (Casarett, 2005). Before beginning the analysis, the researcher received clearance from the Ghana Prison Service (GPS) and the authorities, as detailed in the approval portion of Appendix Two.

This phase was a crucial component of the data collecting procedure, and it was sufficient for this research since it allowed for the free expression of ideas without fear of retaliation or censure from authorities. Furthermore, adequate preparations have to be developed to appropriately store the study data. By assigning numbers to interviews, the researcher assumed that the respondents' confidentiality would be safeguarded at all times. There were no names on the response sheets or interviewee transcripts; just the researcher's name and the matching numbers for the responder appeared on any document. Because all data were saved on a password-protected document and password-protected personal computer, only the researcher had access to the names and information that respondents filled out.

### **3.10 Summary of Methodology**

The methods and econometric techniques used in the achievement of the goals of this study are discussed here in detail. Thus, the study provided insights on the research strategy, where the information/data for the study was acquired and the specification of the study. Finally, the instruments used to analyze the data were also explained.

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSSE

#### 4.1 Introduction

Chapter four shows the data obtained from the respondents and the research analysis. In this specific section, the qualitative data obtained are analyzed based on the research objectives. The first parts discuss the demographics of the respondent. The current state of illumination in Ghana prisons. Also, the section will examine the impact of the current state of lighting on prisoners in Ghana prisons and determine the causes of the current condition existing in prison accommodation in Nsawam Medium Security and Koforidua Local Prisons.

#### 4.2 Respondents Category

##### 4.2.1 Respondents Interviewed for the Study

Table 4.1 below indicates the respondents interviewed for the study. The responses from the respondents were distributed as follows, it was attested that out of sixty (60) respondents, thirty six (36) correction officers representing 60% and twenty four (24) of them representing 40% are prison administrators.

**Table 4. 1 Respondent for the study**

<b>Respondent</b>	<b>Frequency</b>	<b>Percent</b>
Correction officers	36	60
Prison Administrators	24	40

*Source: Fieldwork, 2019.*

### **4.3 Current State of Illumination on Inmates of Ghana Prisons**

#### **4.3.1 Structural Dimensions of the Cells**

To compare and verify whether the structural dimensions of the different cells follow the world standards, a sample of the cells was collected and the dimensions were taken. Below are the findings collected from local prisons in Koforidua and Medium Security in Nsawam.

Table 4.2 and Table 4.3 explain the finding of the measurement of the cells from both Nsawam Medium Security and Koforidua Local Prisons respectively. There is an internationally agreed criterion for the accommodation of inmates. By world standard, the overall number of openings and windows (exterior sheathing) in a cell or dormitory should not be less than 10% of the floor area. (Water, Sanitation, Hygiene and Habitat in Prisons ‘Supplementary Guidance’ by International Committee of Red Cross Geneva, Switzerland ‘ICRC’ pg. 37). The general “rule of thumb” requirement for the minimum amount of living space that a prisoner should be provided in a cell should be 6m<sup>2</sup> of living space for a single-occupancy cell and 4m<sup>2</sup> of living space per convict in a multi-occupancy cell. The required standard of the living room should be exempt from sanitary services inside a cell. As a result, a single-occupancy cell can weigh 6m<sup>2</sup> plus the space needed for the sanitary annexes (usually 1m<sup>2</sup> to 2m<sup>2</sup>). Equally, the area occupied by the sanitary annexes should be omitted from the measurement of 4m<sup>2</sup> per person in multiple occupancy cells.

From Table 4.2 representing Nsawam Medium Security and Table 4.3 representing Koforidua Local Prisons below, it can be observed that none of the cells has its windows been 10% of the floor space. It can also be observed that none of the cells meets the minimum required living space of a multiple-occupancy cell per prisoner. This is because none of the results obtained for the Living Space Area per Prisoner is  $4\text{m}^2$  or above.

**Table 4. 2 Structural dimensions of the Cells in Nsawam Medium Security**

<b>Blocks</b>	<b>Average Number of prisoners in the cell</b>	<b>Living space Area of Prisoners (Length×Breadth ) Including Sanitary annexe ( Toilet)</b>	<b>Living space Area per a Prisoner (Living space Area of Prisoners / No. of prisoners in the cell)</b>	<b>Number of windows and its Dimension</b>	<b>Design of Roof</b>
<b>MAIN ANNEX (ANNEX A)</b>	40	$4.20\text{m} \times 3.00\text{m}$ $= 12.6\text{m}^2$	$12.6\text{m}^2/40$ $= 0.32\text{m}^2$	3 window $0.45\text{m} \times 0.90\text{m}$ $= 0.405\text{m}^2$	Concrete Roof
<b>ANNEX B</b>	5	$2.4\text{m} \times 1.50\text{m}$ $= 3.6\text{m}^2$	$3.6\text{m}^2/5$ $= 0.72\text{m}^2$	2 windows $0.60\text{m} \times 0.90\text{m}$ $= 0.54\text{m}^2$	Concrete Roof
<b>BLOCK 1 – 5</b>	45	$6.60\text{m} \times 5.40\text{m}$ $= 35.64\text{m}^2$	$35.64\text{m}^2/45$ $= 0.79\text{m}^2$	3 windows $0.60\text{m} \times 1.20\text{m}$ $= 0.72\text{m}^2$	Concrete Roof

Source: Fieldwork, 2019.

NB: The dimensions ( $0.9\text{m} \times 2.1\text{m}$ ) of the doors are the same for each cell. They are metal in nature.

**Table 4. 3 Structural dimensions of the Cells of Koforidua Local Prisons**

<b>Blocks</b>	<b>Average Number of prisoners in the cell</b>	<b>Living space Area of Prisoners (Length×Breadth) Including Toilet</b>	<b>Living space Area per a Prisoner (Living space Area of Prisoners / No. of</b>	<b>Number of windows and its Dimension</b>	<b>Design of Roof</b>
<b>BLOCK A</b>	30	7.20m × 3.60m = 25.92m <sup>2</sup>	25.92m <sup>2</sup> /30 = 0.87m <sup>2</sup>	3 windows 0.45m × 1.20m = 0.54m <sup>2</sup>	Concrete Roof
<b>BLOCK B &amp; C</b>	15	3.60m × 3.00m = 10.8m <sup>2</sup>	10.8m <sup>2</sup> /15 = 0.72m <sup>2</sup>	2 windows 0.45m × 0.60m = 0.27m <sup>2</sup>	Concrete Roof
<b>BLOCK D (REMANDED CELL)</b>	60	9.00m × 4.80m = 43.2m <sup>2</sup>	43.2m <sup>2</sup> /60 = 0.72m <sup>2</sup>	2 windows 0.60m × 1.20m = 0.72m <sup>2</sup>	Corrugated slate Roof
<b>BLOCK E</b>	75	12.00m × 4.2m = 50.4m <sup>2</sup>	50.4m <sup>2</sup> /75 = 0.67m <sup>2</sup>	3 windows 0.45m × 0.60m = 0.27m <sup>2</sup>	Aluminium roofing sheet with wooden ceiling

Source: Fieldwork, 2019.

NB: The dimensions (0.9m × 2.1m) of the door are the same for each cell. They are wooden.



According to the world standard of accommodation, (Standard Minimum Rule for the Treatment of Prisoners “S M R” rule 14) cell windows should allow inmates to see portions of the surrounding atmosphere. This implies, in all areas where prisoners are expected to reside or work; the windows should be wide enough to enable the prisoner to read or write through natural light and should be built in such a manner that fresh air will enter whether or not there is provision for artificial ventilation. This is not the case in Ghanaian prison’s since the windows provided are not enough to allow inmates to read or write by natural light in the cells.

#### **4.3.2 Nature of the cell facility in terms of Ventilation and Illumination by Respondents**

After interviewing both Correction officers and Prison Administrators, it was revealed that the cells are poorly ventilated and illuminated. It was attested that some cells are poorly ventilated but have moderate illumination while most of them are both encountering poor ventilation and illumination. The submissions from the Correction officer and Prison Administrators were based on the complaints received from the inmates and observations made by themselves after receiving numerous complaints and they are not from the scientific point of view.

From the Correction officer:

*“An important thing to consider when building a cell is the provision of ventilation and lighting, thus the cell/dormitory should have enough windows to allow in natural air. The total number of inmates sharing cell/dormitory is above the reasonable number to share a cell/dormitory that in term denies the inmates access to adequate ventilation. The inmates complain a lot about*

*the heat in their cells/dormitories but since is not in their jurisdiction to change it, it ends nowhere.” [Interview with a correction officer, 2019].*

Another Prison Administrator attested that:

*“If there are any of the cells with some kind of good ventilation and illumination, then it is the isolated cells which are meant for those who are not well. This is because the amount of air that enters that cell is enough to take care of the number of inmates there at that particular time.” [Interview with prison administrator, 2019].*

#### **4.4 Current State of Prison Accommodation**

In an interaction with the correctional officer and prison authorities, it was checked that much of the current facilities are outdated, with few new ones being constructed, but the number of new convicts continues to increase. It was also checked that most of the infrastructure was not designed as a cell and has its difficulties associated with it. The views that were collected from interviewing the correction officers and administrators emphasized:

*“Owing to the spatial structure of the cells, we face so many obstacles. The primary one is due to inadequate ventilation and poor illumination in the cell due to structural proportions. Inmates complain of low ambient temperature owing to inadequate ventilation due to small cell space and insufficient air circulation openings. While expansions have taken place in existing jails, it is not enough to control overcrowded prisoners”. [Interview with prison administrator, 2019].*

From the correction officer:

*“When the cells are extended and new ones are constructed, the only concern is the security element of the facilities, they barely take into account ventilation and the number of illumination inmates gets. They hardly consult on professional advice and they do not care for the detrimental impact on the offenders and the real world at large. This leads to the fast transmission of contagious diseases such as chickenpox and tuberculosis”* [Interview with correction officer 2019].

#### **4.5 Current State of Illumination of Ghana Prisons**

There are various effects associated with poor illumination which affect individuals in many ways.

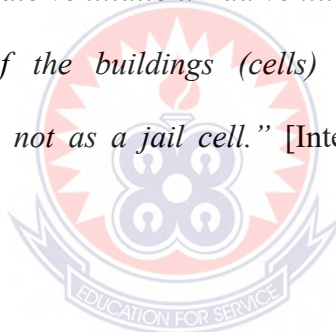
In an interview with twenty four (24) administrators, sixteen (16) from Nsawam and eight (8) from Koforidua prisons, we found out that the responses are related to poor illumination. These responses were similar to the responses given on challenges the prisoners face because of the structural dimensions of the cells. This is because the poor illumination are due to the structural nature of the cells.

From the administrators, the frequently reported cases they receive are basically on the intensity of heat in cells, an outbreak of diseases due to poor ventilation, discomfort in the cells, poor vision, and shortness of breath all these are the effects of poor ventilation and illumination have on inmates. One of the administrators emphasized;

*“Inmates who are directly affected in their cells typically complain that the high-temperature nature of the cells due to inadequate illumination poses a significant danger (thus reduced vision and loss of sight) to their health. It is often difficult to manage outbreaks of diseases, particularly airborne diseases”* [Interview with prison administrator, 2019].

The poor lighting are exacerbated by poor illumination. Another Administrator confirmed by emphasizing that emotional discomfort associated with illumination are worsened by poor ventilation in the cells:

*“The effects of poor illumination are compounded by heat in the cells as a result of inadequate ventilation. Bad ventilation in the cells is attributable to the structure of the buildings (cells) which were designed to store ammunition, but not as a jail cell.”* [Interview with prison administrator, 2019]



Interview with the in-charge of industries also confirms that most of these effects are because of the old nature of the Prisons with poor or no renovation.

*“The cells do not provide sufficient space for the increasing size of the prison population, and this causes a lot of inconvenience and discomfort in the living environment of the prisoners. They find it impossible to see physical hazards in the environment. I tell you the truth, I do not even think these problems will ever be dealt with or resolved, because no attempt has been taken to solve them for so many years now.”* [Interview with In-charge of Industries, 2019]

#### 4.5.1 The Measurement of Illumination in the Cells Using a Photometer

To ascertain the level of illumination in the dormitories or cells. And, to confirm or dispute the claims of the participants, the illuminance of the cells was measured by the use of a Photometer and findings are presented in the tables below.

From Table 4.4 and Table 4.5 it can be observed that none of the daylight factors had the minimum illumination of a cell of a prison, which is 1.5% of an 80% floor area in occupied space. The higher the (DF), the more daylight is available in the room. Rooms with an average DF of 2% or more can be considered daylight (Daylight Energy and Indoor Climate, page 44). The greater the daylight factor (DF), the more daylight in the room. Space would look strongly daylit when the average DF is 5% or higher, in which case electric lighting will most likely not be used during daytime (CIBSE, 2002).

**Table 4.4 Results obtained from the measurement of Illumination in the Cells from Nsawam Medium Security**

Time	Block And Cells	Average Ei (Lux)	Average Eo (lux)	Daylight factor	Average Day Light factor	Recommended Daylight Factor	Remarks
8.00 am	Annex A Cell 1	0.57	1	0.57%	0.643%	1.5%	Not adequately Lit
1.00 pm	Annex A Cell 1	0.66	1	0.66%			
8.00 am	Annex A Cell 2	0.54	1	0.54%			
1.00 pm	Annex A Cell 2	0.80	1	0.80%			

8.00 am	Annex B Cell 3	0.72	1	0.72%	0.715%	1.5%	Not adequatel y Lit
1.00 pm	Annex B Cell 3	0.61	1	0.61%			
8.00 am	Annex B Cell 5	0.56	1	0.56%			
1.00 pm	Annex B Cell 5	0.97	1	0.97%			
8.00 am	Bk 1 Cell 1	0.53	1	0.53%	0.563%	1.5%	Not adequatel y Lit
1.00 pm	Bk 1 Cell 1	0.57 0.56	1	0.57%			
8.00 am	Bk 1 Cell 4		1	0.56%			
1.00 pm	Bk 1 Cell 4	0.59	1	0.59%			
8.00 am	Bk 2 Cell 3	0.72	1	0.72%	0.668%	1.5%	Not adequatel y Lit
1.00 pm	Bk 2 Cell 3	0.80	1	0.80%			
8.00 am	Bk 2 Cell 4	0.62	1	0.62%			
1.00 pm	Bk 2 Cell 4	0.53	1	0.53%			
8.00 am	Bk 3 Cell 2	0.90	1	0.90%	0.783%	1.5%	Not adequate ly Lit

1.00 pm	Bk 3 Cell 2	0.82	1	0.82%			
8.00 am	Bk 3 Cell 5	0.72	1	0.72%			
1.00 pm	Bk 3 Cell 5	0.69	1	0.69%			
8.00 am	Bk 4 Cell 1	0.56	1	0.56%	0.620%	1.5%	Not adequate ly Lit
1.00 pm	Bk 4 Cell 1	0.78	1	0.78%			
8.00 am	Bk 4 Cell 5	0.62	1	0.62%			
1.00 pm	Bk 4 Cell 5	0.52	1	0.52%			
8.00 am	Bk 5 Cell 2	0.69	1	0.69%	0.526%	1.5%	Not adequate ly Lit
1.00 pm	Bk 5 Cell 2	0.76	1	0.76%			
8.00 am	Bk 5 Cell 3	0.59	1	0.59%			
1.00 pm	Bk 5 Cell 3	0.63	1	0.63%			

Source: Fieldwork, 2019

**Table 4.5 Results obtained from the measurement of Illumination in the Cells  
from Koforidua Local Prisons**

Time	Block and Cells	Average Ei (Lux)	Average Eo (lux)	Daylight factor	Average Day Light factor	Recommended Daylight Factor	Remarks
8.00 am	Bk A Cell 1	0.5	1	0.50%	0.635%	1.5%	Not adequately Lit
1.00 pm	Bk A Cell 1	0.77	1	0.77%			
8.00 am	Bk B Cell 2	0.31	1	0.31%	0.518 %	1.5%	Not adequately Lit
1.00 pm	Bk B Cell 2	0.57	1	0.57%			
8.00 am	Bk B Cell 5	0.22	1	0.22%			
1.00 pm	Bk B Cell 5	0.97	1	0.97%			
8.00 am	Bk C Cell 3	0.54	1	0.54%	0.878%	1.5%	Not adequately Lit
1.00 pm	Bk C Cell 3	1.38	1	1.38%			
8.00 am	Bk C Cell 4	0.92	1	0.92%			
1.00 pm	Bk C Cell 4	0.76	1	0.76%			
8.00 am	Bk D Cell 1	0.52	1	0.52%	0.505%	1.5%	Not adequately Lit
1.00 pm	Bk D Cell 1	0.49	1	0.49%			
8.00 am	Bk E Cell 2	0.41	1	0.41%			



1.00 pm	Bk E Cell 2	0.97	1	0.97%	0.688%	1.5%	Not adequately Lit
8.00 am	Bk E Cell 3	0.68	1	0.68%			
1.00pm	Bk E Cell 3	0.69	1	0.69%			

Source: Fieldwork, 2019

From the table above, it was discovered that all the cells at both Nsawam medium security and Koforidua local prisons were below 0.9% less than the 1.5% Daylight Factor (DF) standard of prison cell by the Standard Minimum Rule for the Treatment of Prisoners (SMR) and therefore were not adequately lit.



## **CHAPTER FIVE**

### **DISCUSSION OF RESULTS**

#### **5.1 Introduction**

In Ghana, there are few academic studies to prove the fact that prisoners in most of the prison yards suffer a lot from poor illumination. This chapter presents a thorough discussion of the data analysis in the above chapter, concerning the objectives set for this literature. Even though the sample gathered for the research is small, the results are a true representation of the Ghana prison service cell and it provides meaningful findings and insights that could be generalized as a normal occurrence.

#### **5.2 Current State of Illumination on Inmate of Ghana Prisons**

##### **5.2.1 Structural Dimensions of the Cells**

The findings of the research show that the structural dimensions of the cells in Nsawam Medium Security Prisons and Koforidua Central Prisons are punitive because they do not portray a comfortable and conducive environment that people in prison are supposed to have. This agrees with the study of Augustina (2014), who found out that overcrowding together with inadequate ventilation and toilet facilities, leaking roofs, how do inmates maintain good health? Committee for the Abolition of Torture and Cruel Punishment (CPT) (1990), also established a simple “rule of thumb” for the minimum extent of a living room that a prisoner should be provided in a prison. The research revealed that both Nsawam Medium Security Prisons and Koforidua Local Prison are really in bad structural dimensions of the cells. From the findings in chapter four, we can see none of the living rooms for cells in both Koforidua local prisons and Nsawam medium-security satisfies the CPT rule of thumb standard needed for the minimum living space for inmates. The

study revealed that the CPT rule of thumb for minimum living space for jail should be 6m<sup>2</sup> of living space for a single-occupancy cell and 4m<sup>2</sup> of living space per prisoner in a multi-occupancy cell. This means a minimum of 50 people occupying a cell will need not less than 4m<sup>2</sup> × 50, which is 200m<sup>2</sup>

United Nations Standard Minimum Provision for the Care of Prisoners (SMR) Article 11, is considered as one of the contemporary bedrock studies on the structural dimensions of a prison cell or dormitory, which emphatically states that, in all areas where prisoners are expected to reside, the windows, should be wide enough to allow the prisoner to read and write through natural daylight. According to world standards, the overall size of the windows and the holes in the dormitory or cell should not be less than 10% of the floor space. This current study largely deviates from the findings of these past researchers, because the identified window sizes for both study areas were not adequate to allow flow of natural air and light in the cells. Which means it does not conform to the mandatory world standard (not less than 10%).

The 1996 Kampala Declaration on the Conditions of Prison in Africa (KDPCA) specifies, “Detainees should have conditions of life that are not inconsistent with human dignity” and that the conditions under which inmates are held “the suffering already created by unlawful detention need not be exacerbated.”

### **5.2.2 Interview Participants’ Views on the Nature of Illumination of Prisons**

The finding of the result indicated that cells or the dormitories of the Nsawam Medium Security and Koforidua Central Prisons are poorly illuminated and

ventilated. Universal Declaration of Human Rights (1948), indicates that there is either inadequate space to put bed or sleeping on a shift basis in the cell as they failed to uphold the dignity of inmates. The following were realized after the analysis of the answers from the interview with the prison correction officers and prison administrators. According to Prisons Service Act, (1972), there is a need for a medical officer to certify in writing that the lighting, size, ventilation, heating, fittings and furniture of the cell to be used for the confinement of a prisoner are adequate for the health and that it allows the prisoner to communicate at any time with a prison officer as legally required. The study revealed that commonly recorded cases of prisoners owing to structural measurements of prison cells include insufficient ventilation, cell or dormitory heat intensity, inadequate daylight and electricity. These issues are attributed to the fact that owing to the structural size of the cells, there are insufficient light and ventilation in the cells. This indicates that, aside from the technical evidence of inadequate ventilation due to the limited living room of the cells required for housing, the small window and door height, and the design of the ceiling and walls, the interview proves the same.

Another problem that was found as a consequence of the structural dimension was the small amount of living room for prisoners to handle. This has changed the prisoners sleeping pattern. They sleep next to each other, others sleep on the student's mattress, but two prisoners sleep on one mattress, some on the bare floor, under which they are placed head-to-foot. This also affects their breathing since there is poor ventilation

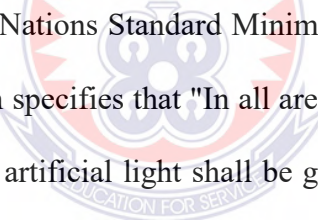
### **5.3 Current State of Prison Accommodation**

From the result of the interview with prison correctional officers and prison administrators, it was discovered that overcrowding of inmates and poor illuminance are the major setbacks observed through the study. This was a result of a structural proposition. However, this confirms the Basic Principles for the Treatment of Prisoners (1990) that either inadequate beds or inadequate space to put beds or both, sleeping on a shift basis in a deplorable dormitory condition are not the best solutions to uphold human dignity. ICPS (2012) also attest that prisons are overcrowded due to accommodation conditions. However, the phenomenal increase in prison populations with poor structural dimensions of prison accommodation facilities is a worldwide challenge in prison management (ACHPR, 2004). It was also checked that most of the infrastructure was not designed as a cell and has its difficulties associated with it. Sarkin (2009), indicated that overcrowding is perhaps the single most pressing issue facing African prisons which has its roots in the colonial past and prisons have always been at or above capacity. It was therefore adducted that the physical conditions of old buildings, poorly ventilated and illumination that served as accommodation for these high numbers of prisoners is no surprise since it was a colonial legacy design to punish instead of correction.

It is relevant to acknowledge the fact that inmates in prisons are still a human being and their right to dignity extended far beyond the fact that they are a prisoner. They deserve to sleep in well spacious rooms rather than they been in rooms which are almost like a pen. Due to the bad state of our prisons and the tremendous increase in prisoners, a lot of pressure has been placed on the old buildings of our prisons.

#### **5.4 Current State of Illumination of Ghana Prisons**

From the findings acquired with the photometer, it was discovered that none of the cells had the required level of luminance. This is valid as none of the findings collected is expected to be up to the appropriate Day Factor (DF) prison cell, which is 1.5% of the 80% floor area of the occupied room ([www.breem.com](http://www.breem.com)). "The higher the DF, the more daylight there is in the cell/dormitory. Cells with an average DF of 2% or more will be considered daylight, but electrical illumination may still be needed to perform a task. A cell seems strongly daylight when the average DF is 5% or higher, in which case artificial illumination is most likely not to be used during the daytime (CIBSE, 2002). Consequently, the findings obtained do not agree with the World Standard.



According to the United Nations Standard Minimum Rule for the Care of Prisoners (SMR), Article 11, which specifies that "In all areas where prisoners are expected to reside or work, adequate artificial light shall be given for prisoners to read or work without eye damage." This is not the case in Ghanaian jails, although none of the cells met the minimum lighting required by the world standard in any cell. This brings low visibility throughout the day and night. The artificial lights provided do not provide enough illumination for easy reading and activity. It is not enough to transport people at night, either. Given the conditions, proper electrical lighting is still required in Ghanaian prisons, in particular, Koforidua local prison and Nsawam medium security cells, to enable proper visual tasks to be carried out. This difficulty of poor illumination can result in a variety of health challenges, such as headache due to straining of the eyes, depression, stumbling, tripping and slipping. It can even cause pain in the throat, back and shoulder as you strain to see objects.

## **5.5 Comparison of Illumination Levels of Ghana's Prison Accommodation with Global Standards.**

Given the nature and construction of the accommodation in our prisons as per world standards, we refer to earlier discussions on the findings obtained from the photometer in the calculation of the amount of light in the cells and the structural measurements of the cells. From the earlier debates, we learned that none of the criteria and requirements of accommodation in the world had been reached. The primary intent of most prisons varies broadly, from private residences to shelters for workers, military barracks, military armouries, hospitals or other government facilities.

Most African countries correctional facilities do not meet the necessary structural dimensional requirements, for instance, many Israeli prison facilities complain that they experience stifling summer heat and chilly, inadequate hygiene, pest infestation and structural failures impacting the privacy of prisoners (ICPS, 2012). The cells of Ghana cannot be forgotten. Constructions are tall with high-security fencing, restricted cell size and capacity, lack of openings to let in natural ventilation, walls are broken down and damaged, bad lighting or darkness (Human Rights and Labor, 2011).

Amnesty International (2012) has acknowledged that working conditions in Ghana's jails are oppressive. Some of the buildings lack toilets, inadequate lighting, poor ventilation and very dirty kitchens and basic infirmaries. In some jails, six (6) prisoners were sleeping in 1.85 meters by 3.15 meters of cells, 45 sleeping in 4 meters by 5 meters of cells, and 115 sentenced prisoners shared 5 meters by 8 meters of cells. As also tested by the United States Department of State/Bureau of

Democracy, these prisoners slept on either side on mats or plain floors by turning head-to-toe to monitor limited space and had to walk carefully between sleeping co-workers to the corner to urinate, while in certain blocks, detainees had to sleep in clusters. The table below is some criteria relating to the world's norm to the Ghanaian existing prison accommodation.

**Table 5 1 Parameters for comparing the world standard prison accommodation to Ghanaian prisons**

PARAM-ETERS	WORLDS STANDARD	GHANA	REMARKS
Cell dimensions	Minimum living space 6m <sup>2</sup> for a single-occupancy cell and 4m <sup>2</sup> space per prisoner in a multiple-occupancy cell. Equally, the space taken up by the sanitary annexes should be excluded. Also, the CPT assumes that any cell used to hold inmates should weigh at least 2 m between the walls of the cell and 2.5 m between the floor and the ceiling.	Between 0.85m <sup>2</sup> and 2.33m <sup>2</sup> multiple-occupancy including sanitary space	Most African prison do not meet the required structural dimensional specifications. Ghana is not excluded from the results received.
Sanitary Annexes (e.g. Toilet)	In any cell housing more than one prisoner, the sanitary annexes should be fully	The sanitary annex which is only the toilet is in	The portioning of the annex should be performed for the sake of



<p>facility)</p>	<p>partitioned.</p>	<p>the cells partially partitioned</p>	<p>privacy and sanitation. In Ghana cells, inmates perform partitioning to avoid unforeseen injuries and suicide. It was also reviewed that while there are toilet facilities in the cells, not enough to serve the number of inmates in the cells.</p>
<p>Sleeping Conditions</p>	<p>According to the United Nations Standard Minimum Rule for the Care of Prisoners (SMR), 'where sleeping lodging is in individual cells, each prisoner shall occupy a cell by himself or herself by night. If, for particular circumstances, such as immediate overcrowding, it is appropriate for the central prison administration to make an exception to the law,</p>	<p>Most of the prisoners slept on their sides on mattresses or bare floors, alternated head-to-toe to monitor the limited room, and carefully shifted to the corner to urinate between the sleeping parties, while in some cases, the inmates had to sleep in groups.</p>	<p>According to world standards, to have two prisoners in a cell. However, provisions can be made for temporary jail overcrowding. That is not the case in Ghana. Ghanaian jails are essentially for various professions. This is because certain cells have been designed for reasons other than cells. The results showed that prisoners sleep in batches not due to insufficient accommodation, but</p>

			naturally, some people sleep and wake up early while others sleep late and wake up late
Illuminatio n	Illumination of a cell should be 1.5% of an 80% floor area in occupied space.	None of the daylight factors had the required illumination of 1.5% of an 80% floor area in occupied space.	The study revealed that none of the illumination levels of all the cells meet the minimum standard. Artificial lighting is inadequate.

### 5.6 Discussion of Themes Emerging from Interview

The purpose of this discussion is to explain what the respondents who happened to be officers and security agencies in this study understood by *poor illumination on inmates in prisons*. The respondents understood it to be a structural problem due to the use of old builds and poor structures that were inherited through slavery. Respondents seemed to think that poor ventilation and illumination is a specific kind of crises the inmates of the prisons faces, which does not consider personal experience to matter. As some officer's point out:

*Inmates complain about the low air temperature due to poor air circulation in prisons due to cell space. Although there are additions in the current prisons, overloaded convicts cannot be monitored adequately. We confront*

*so many hurdles because of the spatial organization of the cells. Inadequate lighting and poor cell lighting owing to structural dimensions.*

Correctional officers also noted that insufficient ventilation and illumination implies that prison facilities are inadequate and bad in construction due to the amount of years of maintenance they lack and also most these building were designed to store ammunition and not as prisons. The construction needs to be sophisticated, which means that these jail buildings must be redesigned as is normally used on a daily basis. This demonstrates that prison officials realize the distinction between prisoners' welfare and prison structural conditions. According to those interviewed, they should begin building restructuring and therefore pay attention to the quantity of ventilation and illumination the prisoners receive in order to ensure enough illumination. Sufficient and adequate lighting should be provided during restructuring. The respondents in the study commented on the poor ventilation and illumination on inmates as:

*When cells are enlarged and new cells are built, ventilation is barely considered and the number of illumination detainees get is barely taken into account. This means that infections, such as chickenpox and tuberculosis, are quickly transmitted.*

*I agree with the officer because, there is too much heat in the cells because of inadequate ventilation. Bad ventilation in the cells is attributable to the structure of the buildings (cells) which were designed to store ammunition, but not as a jail cell*

Some officers agree with the lack of structural design in these prisons. The ability to comply with certain regulations and structures laid down in each prison building structure is integral to the prison structure. Agencies have explained that facilities are not considered prison structures if these criteria are not fulfilled. In other words, if prisoners are to be part of the building structure, they need to talk to them about what is happening in the cells as expected by world prison standards:

*The cells do not give enough space for the jail population to increase in size, which creates a lot of pain and annoyances in the convicts' living environment, they adds. I tell you the truth, I do not even think these problems will ever be handled or fixed because for so many years there is no attempt to solve them, they added.*

#### **5.6.1 Strategies for Improving the Illumination of Prison Accommodation**

- ❖ Taking into consideration the orientation of prison accommodation in the design of prison accommodation.
- ❖ Providing an open court yard.
- ❖ Using translucent walling and ceiling technologies.
- ❖ Providing adequate artificial lighting of prison accommodation.
- ❖ Providing adequate openings to admit daylight while not compromising security aspects of prisons.

## CHAPTER SIX

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 6.1 Introduction

This Chapter provides a summary of key findings and conclusion of a study on “Assessment of illumination levels of prison accommodation in Ghana Prisons”. It also sets out guidelines for the administration of prisons in Ghana as well as policymakers to strengthen the quality of accommodation in prisons.

#### 6.2 Summary of Findings

The sections that follow present the summary of findings of the study in relation to the specific objectives of the study and research questions posed in Chapter One.

##### 6.2.1 Evaluate the Extent to Which Illuminance Level Have Been Implemented in the Ghanaian Prisons

The findings of the study revealed that the extent of illuminance level have been poorly implemented in the Ghanaian Prisons. The investigation also revealed that the Ghana prison service are facing challenges as far as illumination of the prison is concern. The existing illumination levels of the prisons studied fell drastically by 0.6% below the 1.5% established standards.

##### 6.2.2 Strategies for Improving Illumination of Prison Accommodation in Ghana

The findings of the study showed that the following strategies, if implemented could lead to significant improvement in illuminance level of prison accommodation.

- taking into consideration the orientation of prison accommodation in the design of prison accommodation
- providing an open court yard
- using translucent walling and ceiling technologies
- providing adequate artificial lighting of prison accommodation

### **6.3 Conclusion**

In conclusion, this study has attempted to establish some real issues about the assessment of illumination levels of prison accommodation in Ghana. Among them are the fact that all the cells in Koforidua Local Prisons and Nsawam Medium Security Prisons has Day Light Factor (DF) below 0.9% less than 1.5% which is the standard DF of a prison cell, the structural dimensions of the cells do not match the standard of the world, the inmates do not have comfort in their living conditions, the cells and dormitories are poorly ventilated and poorly illuminated due to its architectural structure and overcrowded nature. Ghana prisons service has not done much to improve accommodation in prisons. It was also realized that there is inadequate medicines, poor admission conditions (bedding), inadequate qualified health personnel that renders the infirmaries not up to the required standard.

Moreover, comparative account was presented of results that emerged from the study respondents during in-depth individual interviews with the interviewer. Through the method of thematic content analysis, themes were illuminated ranging from the ways poor illumination is understood at the prison services by prison officers and inmates.

#### 6.4 Recommendations

There are many concerns about the assessment of illumination levels of prison accommodation in Ghana. However, based on the emphasis and main conclusions of the study, the following intervention strategies are recommended for evaluating the governance of Ghana prisons (Nsawam Medium Security Prisons and Koforidua Local Prisons) and policymakers to aid resolve many of the issues or implications and ensure effective implementation to prevent future prison harms.

Most of the prisons in Ghana were built for other purposes but not to accommodate prisoners. Due to this, the inmates face challenges such as poor illumination and poor ventilation. According to United Nations Standard Minimum Rules for the Treatment of Prisoners (1957), it is identified that inmate sleeping accommodation must be adequate to their wellness in regards to indoor temperature, ventilation, space, and lighting and warming. Therefore,

- Ghana Government, through the Ghana Prisons Service, needs to embark on the broad renovation on existing prison facilities with Koforidua Local Prisons and Nsawam Medium Security Prisons even though all of them seem to be in horrible states (Amnesty International, 2012). The renovation should target increasing the sizes and the number of the existing doors and windows, to allow proper ventilation and illumination to encourage detainees to read or write through natural light, and to allow fresh air to enter, whether or not there is provision for artificial ventilation.
- I also want to advocate for the building of new modernized structures in all the prison establishments across the country that will take into consideration the world standard of building accommodation facilities for prisoners.

- I recommend also that, the government in consultation with the appropriate agencies, such as Amnesty International, United Nations Special Rapporteur, Red Cross International and the nations Architectural Engineering Services Limited concerning the Standard Minimum Rules in The Treatment of Prisoners (SMR) strategize proper and standard Prison facilities in terms of room living space, proper ventilation, and effective illumination.





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## APPENDIX I



UNIVERSITY OF EDUCATION, WINNEBA  
COLLEGE OF TECHNOLOGY EDUCATION, KUMASI  
FACULTY OF TECHNICAL EDUCATION  
DEPARTMENT OF CONSTRUCTION AND WOOD TECHNOLOGY EDUCATION

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UEW/KC/CW/

November 20, 2018

THE DIRECTOR GENERAL OF PRISONS  
PRISONS HEADQUARTERS  
P.O. BOX 129  
ACCRA.

Dear Sir/Madam,

### LETTER OF INTRODUCTION

I write to introduce **ASP. Michael Tetteh**, a graduate student with Index No. 8171760014 pursuing M.Phil (Construction Technology) Programme at the College of Technology Education, Kumasi(UEW).

ASP Michael Tetteh is undertaking a research project and wishes to collect some data at your organization. His research project is titled '**The Effects of Poor Illuminance and Ventilation in Prison Facilities in the Ghana Prison Service**'.

Please kindly offer him the needed assistance.

Thank you.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'M. Tsorgali'.

MICHAEL K. TSORGALI (Engr.)  
HEAD OF DEPARTMENT

## APPENDIX II

In case of reply the number and date of this letter should be quoted



HEADQUARTERS  
Ghana Prisons Service  
P. O. BOX 129, ACCRA  
GHANA WEST AFRICA  
TEL: 760093/760094  
Fax: 233-302-772865

Email: [info@ghanaprison.gov.gh](mailto:info@ghanaprison.gov.gh)

Your Ref: No.....

My Ref. No: OC/1082/V.1/2018 1763<sup>5</sup>

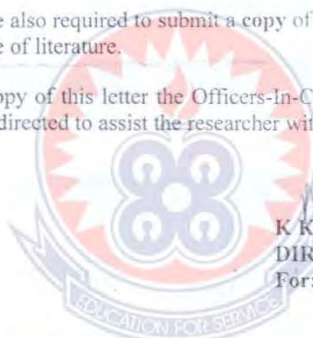
Date 28<sup>th</sup> DECEMBER, 2018

### RE: LETTER OF INTRODUCTION

Your Ref. No. UEW/KC/CW dated November 20, 2018

This is to acknowledge receipt of your letter on the above subject and inform you that permission has been granted to enable ASP. Michael Tetteh visit Nsawam and Koforidua Prisons to collect data relating to his research project titled "The Effect of Poor Illuminance and Ventilation in Prison Facilities in the Ghana Prison Service"

2. You are also required to submit a copy of the **research work** to the Service to enrich our knowledge of literature.
3. By a copy of this letter the Officers-In-Charge, Nsawam and Koforidua Prisons are informed and directed to assist the researcher without compromising security.



*[Signature]*  
K K KPELI  
DIRECTOR OF PRISONS/HRD  
For: DIRECTOR-GENERAL OF PRISONS

THE HEAD OF DEPARTMENT  
DEPARTMENT OF CONSTRUCTION  
AND WOOD TECHNOLOGY EDUCATION  
UNIVERSITY OF EDUCATION  
P. O. BOX 1277  
KUMASI

### Cc:

1. The Reg. Commander - Nsawam Male
2. The Officer-In-Charge - Koforidua Local
3. ASP. Michael Tetteh

/dl/

### **APPENDIX III**

#### **UNIVERSITY OF EDUCATION, WINNEBA**

#### **COLLEGE OF TECHNOLOGY EDUCATION, KUMASI**

#### **DEPARTMENT OF CONSTRUCTION AND WOOD TECHNOLOGY**

#### **EDUCATION**

#### **SEMI-STRUCTURED INTERVIEW GUIDE FOR PRISON OFFICERS**

These are to be treated as confidential and no any name be mentioned or whatsoever.

1. Can you tell me a bit about your position with Ghana Prison Service?
2. How long have you been with Ghana Prison Service?
3. What in your opinion is to be considered when building a prison?
4. Could you please comment on the illumination of the prison accommodation of the prisons you work with?
5. What standards of illumination levels are prison accommodations in Ghana expected to meet?
6. What strategies could be adopted to improve the illumination levels of prison accommodations in Ghana?
7. Do you wish to ask me any question?