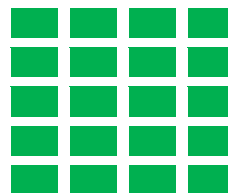


**ENVIRONMENTAL &
SOCIAL IMPACT
ASSESSMENT STUDY
REPORT**

**OCTOBER
2024**

**INTEGRATED
ENVIRONMENTAL &
SOCIAL IMPACT FOR
THE PROPOSED
COURTYARD BY
MARRIOTT AIRPORT
HOTEL ON PLOT No.LR
9042/315 WITHIN
JOMO KENYATTA
INTERNATIONAL
AIRPORT, OFF
MOMBASA ROAD
NAIROBI COUNTY**

Prepared by:



AWEMAC

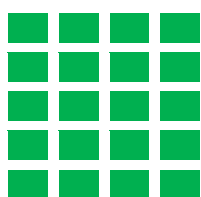
**INTEGRATED ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT FOR THE
PROPOSED COURTYARD BY MARRIOTT AIRPORT HOTEL ON PLOT NO.LR
9042/3I5 WITHIN JOMO KENYATTA INTERNATIONAL AIRPORT, OFF
MOMBASA ROAD NAIROBI COUNTY**

PROPONENT

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ESIA CONSULTANT



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CERTIFICATION

ESIA EXPERT

I, **Prof. Jacob K. Kibwage** submit this **Integrated Environmental and Social Impact Assessment Study for the proposed Courtyard by Marriott Airport Hotel on Plot No. L.R 9042/315 within Jomo Kenyatta International Airport, Nairobi County**. To the best of my knowledge, all information contained in this Report is an accurate and truthful representation of all findings relating to the proposed project as per project information provided by the proponent.

Signed in Nairobi on this day of **October 2024**.


Signature: 

Designation: **Lead Environmental Consultant NEMA Firm Reg. 0527**

PROJECT PROPONENT

I, on behalf of Freight Lane Hotel Limited submit this **Integrated Environmental and Social Impact Assessment Study for the proposed Courtyard by Marriott Airport Hotel on Plot No. L.R 9042/315 within Jomo Kenyatta International Airport, Nairobi County**. To the best of my knowledge, all information contained in this Report is an accurate and truthful representation of all findings relating to the proposed project.

Signed in Nairobi on this^{16th} day of^{October}....., **2024**.

Signature: 

Designation: ^{DIRECTOR}.....

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LIST OF ACRONYMS

AWEMAC - Africa Waste and Environment Management Centre

BC - Building Code

BMS- Building Management System

CBD - Central Business District

CO_x - Carbon oxides

DOSH - Directorate of Occupational Safety and Health

DOSHS - Directorate of Occupational Safety and Health Services

EHS - Environmental, Health, and Safety

ELCA - Environment and Land Court Act

EMP - Environmental Management Plan

EMCA - Environmental Management and Coordination Act

EIA - Environmental and Social Impact Assessment

ESMP - Environmental and Social Management Plan

GDP - Gross Domestic Product

GHGs - Greenhouse Gases

GIS - Geographic Information System

GOK - Government of Kenya

GPS - Global Positioning System

HCVs - Heavy Commercial Vehicles

HASP - Health and Safety Plan

HRA - Hotels and Restaurants Authority

HVAC - Heating, Ventilation, and Air Conditioning

IESIA- Intergrated Environmental and Social Impact Assessment

ILO - International Labour Organization

ISWMS - Integrated Solid Waste Management System

JKIA - Jomo Kenyatta International Airport

KAA - Kenya Airports Authority

KCAA- Kenya Civil Aviation Authority

KBS - Kenya Bureau of Standards

KEBS - Kenya Bureau of Standards

KEFRI - Kenya Forestry Research Institute

KEWI - Kenya Water Institute

KFS - Kenya Forest Service
KNBS - Kenya National Bureau of Statistics
KPLC - Kenya Power and Lighting Company
KRA - Kenya Revenue Authority
Kv- Kilovolt
KWTa - Kenya Water Towers Agency
KWS - Kenya Wildlife Service
L.N - Legal Notice
LOS- Level of Service
LR - Land Registry
LPG - Liquefied Petroleum Gas
MEAs - Multilateral Environment Agreements
MEP- Mechanical, Electrical and Plumbing
MTP - Medium-Term Plan
MSDS - Material Safety Data Sheet
MSME - Micro, Small, and Medium Enterprise
N/A - Not Applicable
NCA - National Construction Authority
NCWSC - Nairobi City Water and Sewerage Company
NEC - National Environmental Council
NECC - National Environment Complaints Committee
NET - National Environment Tribunal
NETFUND - National Environment Trust Fund
NEMA - National Environment Management Authority
NGEC - National Gender Equality Commission
OHS - Occupational Health and Safety
OSHA - Occupational Safety and Health Act
PCA - Penal Code Act
PLUPA - Physical and Land Use Planning Act
PPES - Personal Protective Equipment
SERC - Standards and Enforcement Review Committee
SGR - Standard Gauge Railway
SHE - Safety, Health, and Environment
SOx - Sulfur oxides

TMP- Traffic Management Plan

TOR - Terms of Reference

TRA – Tourism Regulation Authority

UACA - Urban Areas and Cities Act

UNDESA - United Nations Department of Economic and Social Affairs

UNFCCC - United Nations Framework Convention on Climate Change

UNICEF - United Nations International Children's Emergency Fund

VAT - Value Added Tax

WA - Water Act

WHO - World Health Organization

WIBA - Work Injury Benefit Act

WRA - Water Resources Authority

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EXECUTIVE SUMMARY

Introduction

Freight Lane Hotel Limited proposes the construction of a Four-Star Hotel on Plot No. L.R 9042/315 within Jomo Kenyatta International Airport, off Mombasa Road, Nairobi County. The proposed hotel will be managed and operated by *Courtyard by Marriott*. The proponent proposes to construct 180 guest accommodation rooms of varying options and typologies covering a Gross Floor Area of 10,000 M² with surface car parking of approx. 108 cars and other support facilities such as all-day dining restaurant, lobby bar, meeting rooms, gym and a rooftop swimming pool. The land earmarked for the project is approximately 2 acres. The project aims to address the growing demand for modern and accessible accommodation near the airport, contributing to economic development.

The Kenya Government policy on such projects, programmes or activities requires that an Environmental Impact Assessment (EIA) be carried out at the planning stages of the proposed undertaking to ensure that significant impacts on the environment are taken into consideration during the design, construction, operation, and decommissioning of the project. In accordance with the second schedule (Legal Notice No. 31 of 2019) of the Environmental Management and Coordination Act (EMCA) Cap 387, the project falls under the ‘**Urban Development**’ class of “**High-Risk Projects**” Category i.e “**hotels with a bed capacity exceeding one hundred and fifty**”. The proposed development will involve the construction of a hotel with 180 guest rooms and other support facilities.

The exercise was carried out in accordance with the National Environmental Management Authority (NEMA) and the Environmental (Impact Assessment and Audit) Regulations, 2003 and (Amendment) Regulations, 2019. The main purpose of this ESIA was to ensure adequate identification of potentially negative environmental and social impacts of the proposed project, propose workable mitigation measures and formulate an environmental monitoring and management plan articulating anticipated impacts.

The scope of the assessment covered impacts directly or indirectly associated with the construction, operation and decommissioning activities of the proposed project, supply of construction materials and other accessories. The consultant used both conventional and participatory approaches in identifying the potential environmental and social impacts and mitigation measures for the proposed project.

Project Description

The project site is situated within Jomo Kenyatta International Airport, Embakasi Sub County Nairobi County, along Third Freight Lane and Freight Road at GPS Co-ordinates: -1.339727°S and 36.918358°, -1.340284° and 36.917639°, -1.340776° and 36.918041°, and -1.340265° and 36.918671°. The proposed project site is surrounded by Kenya Airports Authority to the East, Third Freight Lane to the South, Four Points by Sheraton Nairobi Airport Hotel to the East and Maya Freight to the North. There also exists similar developments within JKIA such as Crowne Plaza Nairobi Airport Hotel and Four Points by Sheraton Airport Hotel. Buildings within Jomo Kenyatta International Airport have a height level of up to five levels. The proposed development will have a total height level of 28 m up six levels.

Key Policy, Legislative, and Administrative Framework

The project aligns with the Environmental Management and Co-ordination Act (EMCA) of 1999 and other relevant national and international environmental standards. The ESIA study adheres to legislative requirements set by the National Environmental Management Authority (NEMA), ensuring compliance with regulatory frameworks for sustainable development.

Public Participation and Consultation

Consultation and Public Participation was undertaken during the ESIA study. The process involved (a) Public Participation Interviews, (b) Key Informant Consultation and (c) Key Stakeholders' Meetings.

A total of Twenty-Six (26) ESIA questionnaires were administered to the business enterprises surrounding the project site and other key stakeholders. Key informant interviews were undertaken with stakeholders from the Kenya Civil Aviation Authority (KCAA).

A key stakeholders consultative meeting took place at the Crowne Plaza Nairobi Airport Hotel within Jomo Kenyatta International Airport **on 7th August 2024 at 9.00am**. The meeting had 30 participants. Stakeholder comments and concerns have been incorporated in the report with key issues being highlighted in *Table 0-1*.

Key Positive Impacts

The proposed hotel is anticipated to bring several positive impacts to the area, including economic growth, employment generation, increased government revenue, and optimal land use. During the construction phase, the project will stimulate the informal sector, provide a market for building materials, and contribute to the growth of the hospitality industry in the operational phase.

Key Negative Impacts

While recognizing the positive contributions, the ESIA study identifies potential negative impacts associated with the construction, operational and decommissioning phases. The potential negative environmental impacts of the proposed project and possible mitigation measures are summarized below.

Table 0-1 Summary of Negative Environmental Impacts and the proposed Mitigation Measures

Potential Impact	Mitigation Measure
Construction Phase	
Clearance of Vegetation	<ul style="list-style-type: none"> • Landscape and plant vegetation in all open areas after the completion of the project; • Provide drainage channels to minimize erosion; • Restriction of construction activities to defined project areas.
Increased Noise and Vibrations Generation	<ul style="list-style-type: none"> ▪ Employ sound insulation technologies work effectively towards minimizing high noise levels from the external environment in the vicinity; ▪ Ensure that all vehicles and construction machinery are well maintained and regularly serviced to avoid excessive noise generation. ▪ Provide appropriate protective gear to all construction workers working in noisy sections; ▪ The delivery of construction materials and noisy activities should be done preferably at off-peak hours to minimize high level noise impacts. ▪ Ensure compliance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.
Increased Solid Waste Generation	<ul style="list-style-type: none"> ▪ Use of an Integrated Solid Waste Management System (ISWMS); through a hierarchy of options including source reduction, recycling, composting and reuse; ▪ Efficient estimation and use of building material to reduce waste and recycling/reuse where feasible; ▪ Engage the services of a NEMA licensed waste handler to collect and transport waste to designated disposal sites; ▪ Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006 and Sustainable Waste Management Act, 2022.
Increased Generation of Wastewater	<ul style="list-style-type: none"> ▪ Installation of adequate mobile toilets separate for males and females that are well-maintained and have adequate hand washing facilities; ▪ Water containing pollutants such as cement, concrete, lime, chemicals, and fuels to be discharged into a conservancy tank for removal from the site; ▪ Comply with the provisions of the Environmental Management and Coordination (Water Quality) Regulations, 2006.
Air Pollution	<ul style="list-style-type: none"> ▪ Regular sprinkling of water on work areas to prevent fugitive dust violations. ▪ Use of dust nets/screens around the construction site to contain and arrest dust. ▪ All construction machinery should be regularly serviced to minimize the generation of hazardous gases; ▪ Sensitize construction drivers and machinery operators to switch off engines when not in use;

			<ul style="list-style-type: none"> Regularly monitor air quality levels to ensure compliance with Environmental Management and Coordination (Air Quality) Regulations, 2014.
Traffic Impact			<ul style="list-style-type: none"> Adopt a Traffic Management plan and Delivery Management Plan to enhance traffic movement within the site and along third freight lane; Minimize haulage and transportation of construction material during peak hours; Construct acceleration and deceleration lanes to channel delivery trucks to the site without creating a backlog of traffic behind them as they navigate turns of entry; Proper signage and warnings should be placed at strategic locations; Construction activities should be done within the confines of the construction area. Any change in the normal programming of activities that will significantly disrupt normalcy along the abutting project roads should be timely communicated.
Occupational Health and Safety Risks			<ul style="list-style-type: none"> Registration of the site prior to commencement of construction works; Provide appropriate PPE to workers; Training of workers in Occupational Safety and Health and Construction Safety; Obtain a Work Injury Benefit Act (WIBA) cover for employees. Ensure compliance to the Occupational Safety and Health Act (OSHA), 2007. Hire a qualified safety officer to oversee compliance to OSHA, 2007.
Aviation Safety			<ul style="list-style-type: none"> Avoid the use of reflective materials due to the site's proximity to an aerodrome; Adopt planting of bird repellent plant and tree species; Utilizing moving water features such as fountains that are a deterrent to birds; Install bird spikes on ledges to deter birds from perching on them.
Operational Phase			
Increased Solid Waste Generation			<ul style="list-style-type: none"> Use of an Integrated Solid Waste Management System (i.e. through a hierarchy of options: Reduce, Reuse, Recycling and Dispose); Contract a NEMA registered solid waste handler to collect, transport and dispose of the waste in legal dumpsites; Undertake regular employee training programs to raise awareness about waste reduction and recycling practices; Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006 and Sustainable Waste Management Act, 2007.
Increased Wastewater Generation			<ul style="list-style-type: none"> Regular inspection and maintenance of internal sewer systems; Adopt more efficient use of water resources in order to reduce overall amount of waste water generated by the facility.

	<ul style="list-style-type: none"> Comply with the provisions of Environmental Management and Coordination (Water Quality) regulations, 2006.
Noise Pollution	<ul style="list-style-type: none"> Ensure sound insulation technologies are employed during the construction phase work effectively towards minimizing high noise levels from external environment in the vicinity. Using equipment with low noise ratings or noise reduction technologies such as silencers for the generators. Provision of PPES such as ear plugs for employees working in noisy conditions or with noisy equipment. Ensure compliance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.
Increased Pressure on the Existing Resources	<ul style="list-style-type: none"> Explore alternative means which are environmentally sound like employing Green Energy Technologies when and where applicable; Liaise closely with other development partners and Government/Council Departments, to upgrade the existing shared facilities including roads, water distribution systems etc.
Decommissioning Phase	
Generation of Demolition Waste	<ul style="list-style-type: none"> Conduct a thorough environmental audit of to ensure proper disposal of demolition waste; Engage in community outreach programmes to address post-decommissioning impacts on local communities; Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006.
Occupational Health and Safety Risks	<ul style="list-style-type: none"> Establish a Health and Safety Plan (HASP) that covers the scope of works carried out at this phase. Appoint/maintain a trained health and safety team for the duration of the works. Provide workers with adequate and appropriate PPE. Ensure all other applicable safety standards according to the provisions of OSHA 2007, are adhered to.
Noise and Vibration	<ul style="list-style-type: none"> Workers should be provided with appropriate Personal Protective Equipment (PPE); Consult neighbors and schedule demolition activities during the day and at off-peak hours as agreed; Ensure contractors compliance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.
Air Pollution	<ul style="list-style-type: none"> Erection of dust nets around the site; Sprinkling dusty areas including access roads with water to suppress dust levels; Cover trucks used in transportation of soil and other solid materials from the site to prevent the spreading of dust into the surrounding area; Regularly monitor air quality levels to ensure compliance with Environmental Management and Coordination Act (Air Quality) Regulations, 2014.

Conclusion

In conclusion, the ESIA study concludes that the proposed Courtyard by Marriott Airport Hotel is a worthwhile investment that, if executed with strict adherence to the outlined mitigation measures, will contribute positively to the local economy. The proponent of the proposed project shall be committed to putting in place several measures to mitigate the negative environmental, safety, health and social impacts associated with the life cycle of the project. The proponent's commitment to environmental compliance and performance standards, as well as the implementation of the ESMP, ensures responsible and sustainable development. It is recommended that the project proceeds, contingent on adherence to the conditions of approval by NEMA and ongoing commitment to the outlined mitigation strategies.

1 INTRODUCTION

1.1 Background Information

Freight Lane Hotel Limited contracted Africa Waste and Environment Management Centre (AWEMAC) to offer Integrated Environmental & Social Impact Assessment (ESIA) consultancy services for the proposed Courtyard by Marriott Airport Hotel on Plot No. L.R 9042/315 within Jomo Kenyatta International Airport, Nairobi County. The proposed hotel will be managed and operated by *Courtyard by Marriott*.

The proponent proposes to construct 180 guest accommodation rooms of varying options and typologies covering a Gross Floor Area of 10,000 M² with surface car parking of approx. 108 cars and other support facilities such as: All day dining facilities, lobby bar, meeting rooms, gym, rooftop swimming pool and back of the house facilities. The proposed project aims to provide affordable, modern and easily accessible accommodation, conference facilities and hospitality services to both local and international guests. The proposed hotel will be operated/managed by Marriot.

1.2 Rationale for the Environmental and Social Impact Assessment

The Kenya government policy on such projects, programmes or activities requires that an Environmental Impact Assessment be carried out at the planning stages of the proposed undertaking to ensure that significant impacts on the environment are taken into consideration during the design, construction, operation and decommissioning of the project.

In accordance with the second schedule (Legal Notice No. 31 of 2019) of the Environmental Management and Coordination Act (EMCA) Cap 387, the project falls under the ‘**Urban Development**’ class of “**High-Risk Projects**” Category i.e “**hotels with a bed capacity exceeding one hundred and fifty**”. The proposed development will involve the construction of a hotel with 180 guest rooms and other support facilities.

Part VI, sections 58 and 59 of EMCA, Cap 387, provides that the proponent shall: before any financing, commencing, proceeding with, carrying out, executing or conducting or causing to be financed, commenced, proceeded with, carried out, executed or conducted by another person any undertaking specified in the second schedule to this Act, submit a study report to the National Environment Management Authority, (NEMA), in the prescribed form, giving the prescribed information and which shall be accompanied by the prescribed fee. Further in section 58 (5), the Act states that the Environmental Impact Assessment (EIA) studies and reports required under the Act shall be conducted or prepared respectively by individual experts or a firm of experts authorized on that behalf by the Authority.

1.3 Scope, Approach, and Criteria of the Integrated Environmental Impact Assessment

The “Integrated Environmental Assessment,” which is a more holistic approach to the evaluation of the proposed project, was used to undertake a detailed and integrated study of the project. It entailed the following:

- **Environmental Impact Assessment:** This involved an examination, analysis, and assessment of planned activities with a view of ensuring environmentally sound and sustainable development. It is the evaluation of a project's potential environmental risks and impacts in its area of influence; examination of project alternatives; identification of ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation.

- **Social Impact Assessment:** This entailed analyzing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of the projects and any social change processes invoked by the proposed project.

The scope of the assessment covered impacts directly or indirectly associated with the construction, operation and decommissioning activities of the proposed project, supply of construction materials and other accessories. The consultant used both conventional and participatory approaches in identifying the potential environmental and social impacts and mitigation measures for the proposed project. In pursuing the exercise in accordance with the Environmental (Impact Assessment and Audit) Regulations, 2003 (rev 2012) and (subsequent amendments 2016 & 2019), the consultant:

- a) Identified the anticipated environmental, social, health and safety impacts of the project and the scale of the impacts;
- b) Identified and analyzed alternatives to the proposed project;
- c) Proposed mitigation measures to be taken into consideration during and after the implementation of the project; and
- d) Developed an environmental and social management plan with mechanisms for monitoring and evaluating the compliance and environmental performance, which shall include the cost of mitigation measures and the time frame of implementing the measures.

The objective of this work was to deliver an Integrated Environmental and Social Impact Assessment study report for the purposes of applying for an EIA License.

1.4 Objectives

The principal objective is to highlight the possible positive and negative environmental and social impacts expected during the establishment and operation of the proposed project, with the aim of proposing possible mitigation measures. This is in line with ensuring that such a development does not negatively impact the environment in terms of the social, health, economic and physical (soil, water, plant and animals) state of the area. The study identified the possible environmental impacts during the implementation and operational phases of the project. The exercise was carried out in accordance with: the National Environmental Management Authority (NEMA); and the Environmental (Impact Assessment and Audit) Regulations, 2003 and (Amendment) Regulations, 2019

1.5 Purpose and Terms of Reference

The purpose and terms of reference developed for this project were to assess the impacts that may arise during the construction, operational and decommissioning phases of the proposed project. The consultants, on behalf of the proponent, conducted the study by committing themselves to the integrated study report standard terms of reference which requires that the report specify: -

- a) The nature of the project;
- b) The location of the project including;
 - i. proof of land ownership,
 - ii. the Global Positioning System coordinates, and
 - iii. the physical area that may be affected by the project activities;
- c) The activities that shall be undertaken during the project construction, operation and decommissioning phases;
- d) A description of the relevant International, National and County environmental legislative and regulatory frameworks on environmental and socioeconomic matters;

- e) Preliminary design of the project;
- f) The materials to be used, products and by-products, including waste to be generated by the project and the methods of their disposal;
- g) The potential environmental impacts of the project and the mitigation measures to be taken during and after implementation of the project;
- h) An analysis of available alternatives including an alternative
 - i. project site,
 - ii. design,
 - iii. technologies and processes; and
 - iv. the reasons for preserving the proposed site design, technologies and processes;
- i) An action plan for the prevention and management of possible accidents during the project cycle;
- j) A health and safety plan for the workers and neighboring communities;
- k) The economic and sociocultural impacts on the local community and the nation in general;
- l) Strategic communication plan to ensure inclusive participation during the study and provide a summary of issues discussed at the public participation forum;
- m) An environmental management plan;
- n) Integration of climate change vulnerability assessment, relevant adaptation and mitigation actions;
- o) The Project cost;
- p) Any other information the Authority may require.

2 ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT METHODOLOGY

2.1 Introduction

Given the scale of the proposed project, a full Environmental and Social Impact Assessment (ESIA) study was undertaken to ensure the comprehensiveness and completeness of the assessment. The study was conducted as guided by the Environmental Management and Coordination Act Cap 387 and the Environmental Impact Assessment/ Audit Regulations of 2003 and Amendment in 2019.

The general steps that were followed during the assessment included:

- Environmental screening, in which the project was identified as a high-risk project requiring an Environmental Impact Assessment study under the Amendment of the Second Schedule of EMCA 1999 *and the* Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2003 and Amendment in 2019;
- Environmental scoping, which provided the key environmental issues, desktop studies, biodiversity studies and interviews;
- Physical inspection of the proposed project site and surrounding areas;
- Observations, Photography, and application of Geographic Information System (GIS);
- Noise and Air Quality Measurements and Traffic Impact Assessment;
- ESIA Public Participation and Stakeholder Consultation through key stakeholders' consultation meeting and Administration of Questionnaires;
- Desktop Studies;
- Data Analysis; and
- Report Preparation

The environmental assessment aimed at examining, analyzing, and assessing the proposed project activities to ensure environmentally sound and sustainable development systems.

2.2 Environmental Screening

A screening exercise was conducted in the month of June 2024 to determine whether an Environmental and Social Impact Assessment (ESIA) would be required and what level of assessment was necessary. This was done in line with the requirements of the Environmental Management and Coordination Act (EMCA) Cap 387 and the Environmental (Impact Assessment and Audit) Regulations, 2003 and (Amendment) Regulations, 2019 (L.N No. 32 of 2019).

The screening exercise identified that the proposed project is listed in the amended Second Schedule of EMCA 1999 (L.N No. 31 of 2019), and the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 as a project for which an Integrated Environmental and Social Impact Assessment study report is necessary.

2.3 Environmental Scoping

The scoping exercise was carried out in the months of July and August 2024, where key issues identified during screening were further investigated through desktop analysis, field data collection and key stakeholders' engagement to ascertain whether additional information was needed to evaluate baseline conditions and potential impacts within the proposed project area. The desktop evaluation included reviewing applicable environmental and social data collected from external sources with published information. In addition to desktop review, primary data

was collected through field studies conducted by the consultant. The key objectives for the Scoping phase were: -

- To identify stakeholders and inform them of the proposed project and the ESIA process.
- To provide stakeholders with the opportunity to identify any issues and concerns associated with the proposed project; and equally propose potential interventions to the issues raised for consideration in the ESIA process.
- To identify environmental and social issues that may require further investigation at the study level.
- To determine the final Terms of Reference (ToR) for the specialist's baseline and impact assessment studies in response to initial stakeholder input.

The scoping exercise established the need for an ESIA study due to the nature of the project; its classification by the regulating authorities in Kenya; and the complexity of environmental issues that required further assessment. The outputs of the scoping exercise were the project's Terms of Reference (ToR).

2.4 Data Collection Procedures

The Environmental Management and Co-ordination Act No.8 of 1999, (CAP 387) stipulates that an integrated ESIA study shall be conducted in accordance with the general ESIA guidelines and administrative procedures issued by the National Environment Management Authority ("NEMA" or "the Authority"). The Authority therefore oversees all aspects of Environmental and Social Impact Assessments (ESIAs).

It is worth noting that there are multiple methods to meet the necessary requirements for an ESIA and hence our objective was to select an array of methods that could collectively meet the assessment's needs. It is therefore for this reason that AWEMAC undertook environmental screening and scoping to identify the key issues and data requirements.

The full ESIA Study was carried out based on the NEMA approved ESIA Terms of Reference and in compliance with the government of Kenya's Environment Management and Coordination Act Cap 387 and the Environmental (Impact Assessment and Audit) Regulations 2003 and its amendment of 2019.

The process of conducting the ESIA Study involved the following methods:

- Administration of ESIA Questionnaires to the business entities surrounding the project site as well as relevant key stakeholders.
- ESIA Scoping Checklists.
- Field Visits, Observations,
- Noise Measurements.
- Ambient Air Quality Measurements
- GIS/ GPS Technologies.
- Stakeholder Consultation and Participation Meetings.

2.5 Description of the Proposed Project

To provide a comprehensive description of the proposed project, the consultant relied mainly on the review of available literature in regard to the project. Additionally, the consultant reviewed the proposed project drawings as provided by the proponent.

2.6 Description of the Environmental and Socioeconomic Condition of the Project Area

The consultant sought to provide a clear description of the proposed project including its area of influence and baseline information on the existing environmental and socioeconomic situation. The Consultant undertook baseline surveys aiming to provide a measure of the existing environment and the socioeconomic situation against which future changes due to the project can be monitored. This entailed conducting detailed environmental assessment and carrying out preliminary social surveys. Further, the following studies were conducted to supplement existing baseline information for the project site: Baseline Ambient Air Quality Assessment, Noise Impact Assessment and Traffic Impact Assessment.

The consultant collected, evaluated, and presented baseline data and information on the relevant environmental characteristics of the present environment, determined from actual site visits, and site-specific and regional baseline studies in physical, biological, and socioeconomic domains. The collection of baseline data was designed to satisfy information requirements and focused on relevant aspects that were likely to be affected by the proposed project.

2.6.1 Desktop Study

The following key documents were reviewed: -

- Project Drawings
- Project Geo-technical Investigation Report
- Applicable Multilateral Environment Agreements (MEAs).
- Applicable legislation and policies in Kenya.
- Nairobi County Government laws
- Existing documentation on other studies undertaken within the project area.

2.6.2 Project Site Assessment

Field visits were meant for physical inspections of the site characteristics and the environmental status of the surrounding areas to determine the anticipated impacts. Transect walks within the project area were undertaken to collect baseline information for the project area. Observations were made regarding the following:

- Flora;
- Fauna;
- Business enterprises surrounding the project site;
- Characteristics of existing structures surrounding the project site;
- Existing social infrastructure;

2.7 Policy, Legislative, Regulatory and Administrative Framework

The consultant identified the pertinent policies, regulations and standards - both local and international- governing the environmental quality, health and safety, protection of sensitive areas, land use control at the national and local levels and ecological and socioeconomic issues. The examination of the legislation included the relevant international conventions to which the Kenyan government is a signatory. The consultant assessed the relevant government agencies involved in environmental and social management issues, to ensure that the Environmental and Social Management Plan (ESMP) will be effectively implemented. The

consultant described how the identified legislation, regulations and policies constrain or support the project designs and implementation.

2.8 Stakeholder Engagement and Public Participation

The consultant carried out stakeholder analysis and prepared a participation plan for the inclusion and consultation with all identified key stakeholders throughout the ESIA process.

Questionnaires were administered within the project area to ensure adequate public participation and stakeholder involvement in the ESIA process. The information gathered was essential in drafting of the baseline information and determining potential project impacts and mitigation measures. Additionally, a key stakeholder consultative meeting was convened. This was done to incorporate the concerns and views of all stakeholders and individuals in the project area. The venue selection was based on the ease of site accessibility.

2.9 Environmental and Social Impact Analysis

The consultant predicted and assessed the environmental and social benefits and negative impacts of the project as well as any environmental enhancement that may occur. The assessment distinguished between positive and negative impacts, direct and indirect impacts, and immediate and long-term impacts as well as impacts that are unavoidable or irreversible.

2.9.1 Impacts Prediction and Analysis

When predicting and analyzing the impacts, the consultant considered the **Intensity** and **severity** of the Impacts. Impact prediction was done through: **Checklists; Environmental modelling; GIS analysis** and **Professional judgment**.

2.9.1.1 Intensity of Impacts

Intensity covers all dimensions of the predicted impact on the natural and social environments, namely:

- the nature of the change (which resource or which receiver is allocated and how).
- the spatial extent of the affected area or the part of the population or affected community.
- its temporal extent (duration, frequency, reversibility); and if so,
- the probability of an impact following an accidental or unexpected phenomenon.

Table 2-1: Predicting the intensity of impacts.

Intensity	Impacts
Type	Direct - resulting from direct interaction between the project and resource/receiver.
	Indirect - resultant direct interaction between the project and its environment, due to interactions occurring thereafter.
	Armature - impacts from other follow-up activities to the project.
Scope	Local - limited impact in the project area and its surroundings.
	Regional - impacts felt beyond the local areas, even in the extended region.
	International - impacts felt at the international level, thus affecting another country.
Duration	Temporary - Short-term impacts, on the order of hours to weeks.
	Short-term - impacts predicted to last only during drilling and construction operations (up to about 2 years).
	Medium-term - impacts predicted to last between two years and the end of the project (20 years)
	Long-term - anticipated impacts of a longer duration than the project but which will cease in time.
	Permanent - impacts causing a permanent change on the receiver or the affected resource (s) and extending well beyond the lifetime of the project.
Frequency	Recurrent - impacts occurring frequently or continuously
	intermittent - occasional impacts or appearing only in specific circumstances.
	Unlikely - unlikely event that may take place during the project.

Probability	Possible - event likely to occur at some point during the project.
	Likely - the phenomenon will occur during the project (e.g. it is inevitable)

2.9.1.2 Severity of Impacts

The consultant assessed the severity of impacts to provide information on the importance of different impacts of the project. It is important to note that there is no statutory definition of the severity of an impact. Thus, as part of the ESIA, the evaluation of the severity of impacts is based on the Consultant's professional judgments using objective criteria, when available, legal norms, national government policies, regionally recognized good industry practices and opinions of stakeholders.

An impact is **negligible** when a resource/receptor (including people) is affected in any way by a particular activity or when the intended effect is judged "Imperceptible" or indistinguishable, from a natural background.

An impact is **minor** when a resource / receptor is affected, but the intensity of the impact is small enough to remain within the limits of applicable standards (i.e., regulations and guidelines applicable) or in the absence of standards when sensitivity/vulnerability/importance of the resource / receptor is low.

An impact is **moderate** when its intensity remains within the standards but is between a threshold below which the impact is minor and a level likely to be on the verge of a legal offense. For moderate impacts, it should reduce impacts to a level "as low as reasonably practicable" (ALARP). This does not necessarily mean that the so-called impact "moderates" must be reduced to minor impacts, but they are managed efficiently and effectively.

A **major** impact is when the acceptable or allowable standards limits may be exceeded, or high intensity impacts can allocate resources/receptors quality / importance / high sensitivity. One of ESIA's goals is to get to a configuration where the project is not associated with any major residual impact, or any impact that would remain in the long term or a significant extent. However, in some respects, there may be major residual impacts, once all mitigation options (a level as low as reasonably achievable is then applied) have been exhausted. It can be for example the visual impact of an installation. Regulators and stakeholders must then balance these negative factors with respect to the positive aspects such as employment.

The consultant assessed the magnitude and significance of impacts based on the following factors:

- Location or extent: The area/volume covered.
- Timing: Whether immediate or delayed
- Duration: Short-term, long-term, intermittent or continuous
- Reversibility or irreversibility
- Likelihood: Probability of the impact taking place
- Significance: Whether it is local, regional, or global

The consultant used the scale in the table below in the analysis of impacts and quantified them in a scale of 0 – 5.

Table 2-2: Levels of Scale to be used in the Analysis of Impacts

Value	Description	Scale Description
0	No impact	This means that to the best knowledge of the expert, the activity/action will not have any known impact on the environment. Such an impact will not in any way affect the normal functioning of either the human or the natural systems and does not therefore warrant any mitigation.

Value	Description	Scale Description
1	Minimal impact	Any activity with little impact on the environment calls for preventive measures, which are usually inexpensive and manageable. Such activities have minimum impacts on either natural or human environment or both.
2	Moderate impact	A moderate impact will have a localized effect on the environment. If the effect is negative and cumulative, action in form of mitigation measures needs to be put in place to ensure that it doesn't become permanent and /or irreversible.
3	High impact	An impact is high if it affects a relatively large area (spatial), several biological resources (severity) and/or the effect is felt for a relatively long period (temporal) e.g. more than one year. In case the effect is negative, such an impact needs to be given timely consideration and proper mitigation measures put in place to prevent further direct, indirect, or cumulative adverse effects.
4	Very high impacts	Such an activity rates highly in all aspects used in the scale i.e., temporal, spatial and severity. If negative, it is expected to affect a huge population of plants and animals, biodiversity in general and a large area of the geophysical environment, usually having trans-boundary consequences. Urgent and specialized mitigation measures are needed. It is the experts' opinion that any project with very high negative impacts MUST be suspended until sufficient effective mitigation measures are put in place.
5	Not known	There are activities for which impacts are not yet known e.g. some chemicals are suspected to produce carcinogenic effects, but this has not yet been confirmed.

2.9.2 Occupational Health and Safety Concerns

The ESIA Consultant analyzed and described the potential occupational health and safety concerns that are associated with the proposed project construction and operation activities. The Consultant further made recommendations on both preventive and corrective or remedial measures to be implemented under the environmental management plan.

2.9.3 Analysis of Alternatives

The Consultant systematically compared feasible alternatives to the proposed project site, technology, design, and operation including the "without project" situation in terms of their potential environmental and social impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. After the analysis, the Consultant recommended the preferred alternative and stated why it was chosen.

2.9.4 Preparation of an Environmental and Social Management Plan

During the ESMP preparation, the consultant presented the mitigation measures that will need to be implemented by the proponent/contractor to prevent or reduce significant negative impacts to acceptable levels. The ESMP has highlighted recommendations for actions and procedures for their implementation in the short and long term, and the cost of their implementation.

2.9.5 Preparation of an Environmental and Social Monitoring Plan

The consultant has developed a monitoring plan with a characteristic description of all project impacts that can be quantitatively or qualitatively monitored including technical details, of

monitoring measures for the ESMP, including the parameters to be measured, methods to be used, sampling locations and frequency of measurements.

3 PROJECT DESCRIPTION

3.1 Introduction

This chapter gives a detailed description of the proposed project. It starts by a highlight of the project background before describing the project location and site accessibility. A review of the proposed drawings explaining various floor plans are discussed with architectural maps illustrations in the (Annex 4)

3.2 Site Location

The Proposed project site is located on Plot No. L.R 9042/315 within Jomo Kenyatta International Airport, Embakasi Sub County, Nairobi County and within the following GPS Co-ordinates: -1.339727°S and 36.918358°, -1.340284° and 36.917639°, -1.340776° and 36.918041°, and -1.340265° and 36.918671°. The land earmarked for the project is Approximately 2 Acres.

The proposed project site is located at the junction of Freight Lane and Third Freight Lane and is surrounded by Kenya Airports Authority to the East, Third Freight Lane to the south, Four Points by Sheraton Nairobi Airport Hotel to the West and Maya Freight to the North.



Figure 3-1 Google Earth Image of the proposed Project site

3.3 Project Components

- The Proponent -Freight Lane Hotel Limited- a Kenyan registered company (*Annex 2 KRA PIN and Annex 1 – Certificate of Incorporation*) intends to develop the land into an Airport Hotel with 180 guest rooms and other support facilities. With a ground floor area of approximately 10,000 m², the development will entail the following facilities:

Table 3-1 Summary of the Project Components

LEVEL	PROJECT COMPONENTS	
Basement Level	<ul style="list-style-type: none"> • Grey Water Treatment plant • Water Storage Tanks; Domestic, • Raw Water, Flushing Water, Fire Fighting 	<ul style="list-style-type: none"> • Hot Water heating Plant room • Water and Fire Pump room
Ground Floor	<ul style="list-style-type: none"> • LPG Storage Area • Waste Holding area • Generator room • Guard Houses • Transformer room • Laundry room • Courtyard 	<ul style="list-style-type: none"> • Surface car park of approx. 108 parking lots • Kitchen and Stores • Meeting Rooms • Lobby Bar • All day dining area • Staff Canteen
1st to 4th Floor	<ul style="list-style-type: none"> • Guest Rooms • Landscaped terrace on 1st floor 	
5th Floor	<ul style="list-style-type: none"> • Guest Rooms • Gym and Spa 	<ul style="list-style-type: none"> • Roof top bar and Swimming Pool
6th Floor	<ul style="list-style-type: none"> • Lightning Arrestors • Solar PV Panels (118 no.) 	<ul style="list-style-type: none"> • Obstruction Lights • Lift Overruns

The development proposes to accommodate guest rooms in varying options and typologies as listed below;

Table 3-2: Tabulation of Suite Typologies

Typology	Guestroom No
Standard Suite (King, Double & Twin Bed)	174
Junior Suite	6
	180

The proposed project drawings detailing the facilities within the proposed Airport Hotel are attached as *Annex 4*.

3.4 Project Design

In terms of site planning, the project design team has ensured maximum utilization of the plot with consideration of the best land usage, in the most efficient way to layout the hotel rooms to achieve the maximum number of rooms possible and most importantly the best spacial quality for the hotel.

In order to achieve efficiency, the design team developed a grid that will provide the guiding principle for the development. This grid allows the hotel rooms and suites to be laid out efficiently within this grid.

3.5 Project Site accessibility

The project is easily accessible to:

- Nairobi CBD and other parts of Nairobi through Nairobi Expressway Road and Mombasa Road.
- The Standard Gauge Railway at Syokimau
- Jomo Kenyatta International Airport.

3.6 Project Activities

3.6.1 Key project activities during the construction phase

The Key Construction Works will include:

a) Site Preparation Works

This will involve clearing of the minimal vegetation on site and demolition of the concrete foundation (from the previous establishment). Proper site clearing and demolitions will be conducted and arrangements made to properly and safely dispose of materials out of site. An excavation plan will be developed, and appropriate shoring and bracing will be used. Excavated materials will be sorted and reused, recycled or disposed as per the excavation plan.

Any blasting works (if required) will obtain the necessary permits from local authorities and safety strategies will be employed such as debris control, dust control, noise control and other necessary safety protocols. Post blast assessment and surveys will be conducted as well. Site clearance and construction will involve the use of heavy earth-moving machinery such as excavators and bulldozers. The proponent will utilize human labour where feasibly possible to create employment opportunities for the local communities and youth around the area.

b) Excavation and Earthworks

Excavation shall be done using backhoes for removing top soil and jackhammers for areas with hard rock. The excavated soil will be transported off-site, while any excavated rock material will be reused for back-filling on-site and off-site in the event of an excess, to ensure efficient excavation while minimizing environmental impact and adhering to safety regulations.

c) Storm-water Drainage System

The client will apply soil erosion control measures such as leveling of the project site to reduce run-off velocity and increase the infiltration of storm-water into the soil. A storm-water drainage infrastructure shall be constructed for the facility. In select areas, a dedicated manhole and storm-water drainage connections will be provided to serve the facility.

d) Storage of Materials

Temporary stores for building materials will be erected on-site during the construction phase. Materials will be stored as per a material storage plan at the designated storage areas for materials that will be accessible and properly located to minimize transportation. Materials will be categorized and labeled appropriately, weather protected and stored securely. Any hazardous materials will be stored as per safety regulations and waste management shall be employed to avoid wastage through reuse, recycling and appropriate disposal.

Bulky materials such as stones, ballast, sand and steel will be carefully piled at designated areas on site. To avoid piling large quantities of materials on site, the proponent will order bulky materials such as sand, gravel and stones in quotas.

e) Masonry, Concrete Work and Related Activities

The construction of the building walls, foundations, floors, pavements, drainage systems, and parking among other components of the project involves a lot of masonry work, laying of plumbing and related activities. General masonry and related activities include concrete mixing, plastering, slab construction, construction of foundations, and erection of building walls and curing of fresh concrete surfaces. These activities are known to be labour-intensive and will be supplemented by machinery.

Precast concrete blocks, Precast concrete units and Natural Masonry Stone shall be used for walling within the project. Class 25 concrete shall be used on foundations, slabs and beams; Class 35/40 concrete on columns. and 375mm thick hollow pot slab for guest room floors

f) Structural Steel Works

The building will be reinforced with structural steel for stability as follows:

- Rebar to Bases @ 105/m
- Rebar to RC wall footings @ 67/m
- Rebar to Columns @ 150/m³
- Rebar to down stand beams @ 275/m³
- Rebar to slab beams @ 325/m³
- Rebar to hollow pots (one way) @ 18/m³

Structural steelworks will involve steel cutting, welding and erection of forms for beams and slabs.

g) Roofing

A flat reinforced concrete roof slab with screed to fall will be constructed to the Engineers detail.

h) Electrical Installations

Electrical work during the construction of the premises will include the installation of electrical gadgets and appliances including electrical cables, lighting apparatus, sockets, lifts, security installations and ICT Installations. In addition, there will be other activities involving the use of electricity such as welding and metal cutting.

The estimated power demand for electrical installation works for the proposed hotel is 80A on 11kV. Sufficient capacity is available through a nearby 11kV feeder line. An oil type 1500KVA transformer and 2 No. oil type LT Voltage regulators will be located on site.

Connection will be mainly on the Kenya Power Line with backup power using Diesel Generators of 750KVA each with acoustic enclosures. Solar Power shall also be utilized with a maximum of 118 no. 550 Watts Monocrystalline panels provided for Solar PVs oriented along the North East-South West orientation.

The proponent will contract an organization specialized in designing and executing electrical works to ensure electrical installations comply with national regulations and international standards.

i) Plumbing Activities

Plumbing works will entail; low flush sanitary fittings, plumbing pipework, water storage, recycling and re-use of water. Installation of pipework will be done while doing plumbing works and drainage and sanitary fittings to connect Grey water from the hotel to the Grey wastewater treatment plant. Plumbing installation shall comply with national regulations and international standards.

j) Mechanical Installations

Mechanical installations shall include: Water supply, irrigation and treatment, connection of fire systems to the water source, installation of gym and pool equipment. The proponent will also install mechanical Heating, Ventilation and Air Conditioning (HVAC) and security systems.

Communication facilities and systems/ ICT Infrastructure: These shall entail the installation of communication systems in meeting rooms and data systems to support hotel operations.

Air conditioning and refrigeration equipment: The proposed air conditioning system is the inverter type which uses variable refrigerant volume technology. This type compared to

the non-inverter type is energy efficient and most favorable for such a development. The equipment will use R32 and R410A refrigerant gases which are ozone friendly.

Energy sources and lighting systems: Proposed lighting fixtures are LED type which are energy efficient, saving up to 50% of energy on lighting. The main power source for the development will be a supply line from KPLC which will be supported by back-up silent generators with acoustic enclosures. The amount of energy required is 80A on 11KV.

Liquefied Petroleum Gas (LPG) Installation: LPG and High-Speed Diesel Tanks (12 Kiloliters per day, 48 – hour storage) will be installed in the Northern side of the site. The Kitchen gas leak detector system and automated shut off shall also be installed.

Lightning Protection: A lightning protection system shall also be installed as per Faraday Cage Method with down conductors in structural columns and each conductor linked and connected to the earthing system.

k) Traffic Management

Entry for site works will be through Freight Road. Working hours shall be those in the NEMA EIA License and in force Building and Civil Engineering Trades in Kenya. No work shall be carried out at night or on gazetted holidays unless necessary where a permit shall be obtained from NEMA.

To ensure the protection of motorists, pedestrians and cyclists, the proponent will employ traffic marshals to ensure the proposed development construction activities do not bring traffic snarl-ups around the proposed project site. A detailed Traffic Impact Assessment has also been done to address traffic related issues.

l) Landscaping

The developer will adopt landscaping features that create a serene environment for the hotel. These shall include:

- Provision of a water feature, outdoor seating area with a fire place, planters and trees at the courtyard level.
- A landscaped terrace with native plants and trees and outdoor seating on the first floor.

The proponent shall employ the following strategies to ensure the landscaping features do not attract birds;

- The developer shall consider planting bird repellent plant and tree species such as daffodils, lavender, peppermint and thyme;
- Construction of moving water features such as fountains that are a deterrent to birds;
- The development shall entail slopes on niches and copings within the building for birds not to nest on them;
- Installation of Bird Spikes on ledges to deter birds from perching on them;

m) Interior and External Finishes

The interior finishes will have porcelain tiles and granolithic flooring for ground floor spaces, power floated concrete for service rooms, vinyl flooring with plywood backing for the guest rooms, carpet for the corridors and meeting spaces.

External finishes will have walls with white coral cladding on the ground level, Wood-look aluminium fins on the upper floors, Mvule louvres on Ground floor and external textured plaster paint on the 1st to 5th Floor.

Façade: The façade will be of wood look. Aluminium Louvres with a low reflectivity acoustic glass for the windows on the façade, 10.76mm laminated glass and a clear glass with solar control.

3.6.2 Key project activities during the operation phase

a) The facility users

The Proposed Four-Star Airport Hotel, when completed will target both local and foreign visitors visiting Kenya or Nairobi. The targeted occupancy is 180 hotel room units at 80% occupancy.

b) Electrical System

The proposed facility will be connected to the Kenya Power Limited Company (KPLC) electricity main line which will be used in all phases of the project. The necessary guidelines and precautionary measures relating to the use of electricity shall be adhered to.

c) Water Reticulation System

The estimated water demand per day is 131 cubic meters. 84 cubic meters will be sourced from the Grey water treatment plant. The remaining 47M³ will be sourced from Nairobi City Water and Sewerage Company (NCWSC) and a borehole to be drilled on site.

d) Solid Waste Management

In terms of operational waste, a refuse room shall be provided on-site for separation of waste; and recycling bins will be clearly labeled for use by the staff and guests. The scheme will utilize a proper waste management system with the following facilities:

- Enclosed Waste Room for efficient management of bird control
- Cold storage for wet waste to mitigate odors and insect/rodent infestation
- Separate storage for hazardous waste
- Recycling systems

Electronic waste, paper and cardboard, plastic, metal and cans, glass bottles, and food waste will all be separated during operations. The proponent will contract a NEMA licensed waste company to handle all wastes on the basis that they will collect the separated waste in trucks that maintain separation, and that will have an extensive sorting site. Plastic waste will be recycled and reused. The proponent will ensure that the volume of solid waste generated within the entire facility is minimized through the principles of reduce, re-use and recycle.

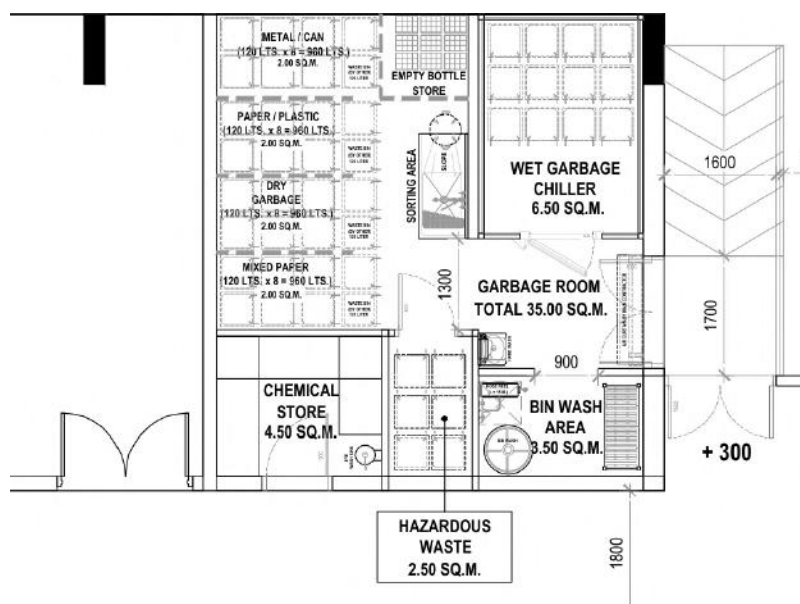


Figure 3-2 Proposed design for the waste holding room

e) Sewerage System/Liquid Waste Management

The proposed development will be connected to the Nairobi County Public Sewer System. The proponent plans to install a grey water treatment plant with a capacity of 100 cubic meters. The water from the plant will be treated and used to flush toilets and to irrigate the hotel landscaped areas.

f) General Repairs and Maintenance

The proposed hotel and support facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include the repair of building walls and floors, repair and maintenance of electrical gadgets, painting and replacement of worn-out materials among others.

g) Fire Fighting

The firefighting system shall consist of a water-based sprinkler firefighting system, a breeching inlet for external fire services, fire hose reels, portable extinguishers, fire alarm system and a pressurized emergency escape staircase with fire-rated doors. The developer shall also provide fire procedures and instructions, fire exit signs, a fire action plan and well-labeled fire assembly points.

h) Emergency and Disaster Preparedness

The contractor and proponent shall endeavor to provide a safe environment which is required of any investment through internal policies and protocols, risk mitigation strategies, creating direct links with the relevant civic authorities (including the JKIA police, NEMA, fire department and the nearby Port health facility), and establishing contracts with professional private contractors able to respond to emergency situations.

In case of an emergency relating to fire, spill of materials, theft or major injury, the ESIA team recommends that Emergency telephone numbers to the nearest fire station, JKIA Police unit, and Health facility be strategically displayed.

i) Traffic Management

Entry for the site will be through Third Freight Lane with a service entrance through Freight Lane.

j) Security systems

The proponent shall employ the following strategies to guarantee security within the proposed development.

- Conducting regular risk assessments of the facility.
- Screening of all persons entering the project at the main gate and main entrances of the building;
- Employment of security personnel
- Installation of Security Equipment such as: CCTV, boom barrier gates, metal detectors, and baggage scanners.
- Organizing for Emergency preparedness training.

3.7 Description of the Project's Decommissioning Activities

a) Demolition Works

Upon decommissioning, the project components including buildings, pavements, drainage systems, parking areas and the perimeter fence will be demolished. This will produce a lot of solid waste, which will be reused for other construction works or if not re-usable, disposed of appropriately by a NEMA licensed waste handler.

b) Dismantling of Equipment and Fixtures

All equipment including electrical installations, furniture, finishing fixtures partitions, pipework and sinks among others will be carefully dismantled and removed from the site upon decommissioning of the project. Priority will be given to the reuse of this equipment in other projects. This will be achieved through the resale of the equipment to other building owners or contractors or donation of the used equipment to schools, churches and charitable institutions.

c) Site Restoration

Once all the waste generated from demolition and dismantling works is removed from the site, the site will be restored through replenishment of the topsoil and vegetation.

3.8 Green Building Technologies

The Proponent will put in place the following Waste Management, Energy and Water conservation technologies to ensure the sustainability of the hotel:

- a) Water Conservation System:** The development will make use of water efficient fittings and equipment such as shower-heads, faucets, and washing machines; water efficient irrigation systems and use of recycled water for irrigation and flushing toilets.

b) Waste Recycling and Recovery System

Solid Waste Management: In terms of operational waste, spaces will be provided on site for separation of waste; and recycling bins will be clearly labeled for use by the staff and guests. Electronic waste, Paper and cardboard, plastic, metal and cans, glass bottles, and food waste will all be separated during operations. The appointed waste collection company will be awarded a contract on the basis that they collect the separated waste in trucks that maintain separation and have an extensive sorting site. Plastic waste generated by the facility will be recycled and reused.

Liquid Waste Management: Grey water treatment plant of a capacity of 100 cubic meters shall be installed. Recycled water will be used to flush toilets with low flush sanitary fittings. The treated water will be utilized to irrigate the landscaped areas

- c) Energy Conservation:** The proponent will put in place the following measures in a bid to reduce energy consumption:
- Solar panels and variable refrigerant flow systems with heat recovery will be used for domestic hot water production.
 - LED lighting and lighting controls will be installed thus saving up to 50% of the energy used on lighting.
 - HVAC systems will be of inverter type and utilized Variable Refrigerant Technology, thus consuming less energy
 - A Building Management System (BMS) for Mechanical, Electrical and Plumbing (MEP) systems monitoring and operation optimization will be installed.
- d) Use of Renewable Materials:** The proposed development will incorporate the use of locally available masonry stones, concrete blocks, coral stone and timber; low VOC paints, recycled materials and sustainable wood products.
- e) Landscaping:** The proponent shall plant native plants that require less water and maintenance, use water efficient irrigation systems and construct smaller and shallow water features that minimize water evaporation and run off.
- f) Facilities for the aged and disabled persons:** The proposed hotel design is user-friendly and accessible to all persons. The hotel has been designed to have disabled rooms and washrooms; ramps, and lifts for accessibility.
- g) Smoking facilities/ areas:** Designated external smoking areas shall be provided.
- h) Use of local materials:** Majority of the building will be built from locally available materials. The contractor will be required to locally source masonry & coral stone.

3.9 Materials to be Used, Products and By-products

a) Materials to be used/ Inputs

The materials to be used in the project include but are not limited to:

- Construction raw materials: i.e. sand, cement, stone blocks, cobble stone, crushed rock (gravel/ ballast), Porcelain tiles and other ceramic fittings, parquet, clay vent blocks, iron fittings and wooden fixtures and fittings (such as doors and windows), Plaster board, glass, steel metals, hard wood timber, vinyl paints, High-density Polyethylene (HDPE) Pipes and power cables among others. All these should be obtained from licensed dealers and especially those that have complied with the required environmental management guidelines and policies.
- Construction machines including machinery such as trucks, concrete mixers, tools and other construction equipment.
- A construction labour force of both skilled and non-skilled workers. They will require services such as clean drinking water supply and sanitation facilities.
- Large volumes of water for construction purposes which will be supplied by NCWSC and Supplemented by a borehole.
- Power will be sourced from the main KPLC grid.

b) Expected Waste

- i. **Construction Waste:** Paper polythene, metal shavings, cement, concrete, welding particles, plastics, sand, Grey water, adhesives, paints, soil, plants, cloth, rubber.
- ii. **Air Emissions** from vehicle engines and burning and friction operations (CO₂ and SO_x). Oil and fuel spills from vehicles and storage of oil and fuel. Dust from the movement of vehicles and excavation activities.
- iii. **Sewerage and domestic/Municipal waste** emanate from sanitary systems and wastewater generated from construction activities and make their way to drainage systems or possible lines.

c) Output

The output will be a 180-key hotel with support facilities such as all-day dining, lobby bar, meeting rooms, gym, rooftop swimming pool and surface car parking of approx. 108 cars.

3.10 The Proof of landownership

Freight Lane Hotel Limited owns the parcel of land on Reference No. 9042/315. The land ownership document has been attached as *Annex 3*.

3.11 Project Cost

The project is anticipated to be undertaken within 30 months i.e., two and a half years) at a cost of approximately **One Billion One Hundred and Ninety-Four Million, Seven Hundred and Fifty-Two Thousand, Six Hundred and Three Kenyan Shillings only (Kshs. 1,194,752,603)**. The Bill of Quantity document detailing a breakdown of the project costs is attached as *Annex 10*

4 BASELINE INFORMATION OF THE STUDY AREA

4.1 Introduction

This chapter describes the current environmental baseline setting around the proposed project site. The information presented here has been obtained from primary and secondary sources. The detailed baseline survey on the physical environment, biological environment and, sociocultural and economic environment are discussed in this chapter.

Jomo Kenyatta International Airport (JKIA) serves as a hub for most airlines' operations in the Eastern Africa region. Jomo Kenyatta International started as an airstrip in the 1950s named Embakasi Airport and mainly handled domestic flights. It was renamed Jomo Kenyatta International in 1978 after Kenya's first president. The airport underwent major expansion in the 1980s, including construction of new terminals and runways. Today it continues to undergo periodic upgrades of facilities. In 2019, Phase 1 of the Greenfield Terminal was launched. This increased the airport's capacity from 2.5 million to 7.5 million passengers annually.

Jomo Kenyatta International Airport land is designated for private investments, allowing for diverse developments, including hotels. In Kenya, the concept of establishing airport hotels was introduced 5 years ago. There are already two existing airport hotels near the proposed project i.e Four Points by Sheraton Airport Hotel and Crowne Plaza Airport Hotel. The proposed Courtyard by Marriott Airport Hotel will thus fill a significant role in accommodating the increased number of passengers.

4.2 Project Location

The project site is located in the Embakasi suburb 18 kilometers Southeast of Nairobi's Central Business District and is easily accessible further enhancing its strategic location for both local and international guests. The land earmarked for the project is approximately 2 acres and is located on GPS Co-ordinates: -1.339727°S and 36.918358°, -1.340284° and 36.917639°, -1.340776° and 36.918041°, and -1.340265° and 36.918671°, along Third Freight Lane and Freight Road within Jomo Kenyatta International Airport, Nairobi County.

4.3 Brief Description of the Project Site

The project as it is currently is occupied by bushes, Aloe vera plants, 3 young acacia trees, one palm tree and concrete slabs. The site was previously occupied as a Godown/Warehouse by a flower freight company known as Homegrowers. These occupants did not fully decommission the site and many of their facilities were spotted on the proposed site. These included a septic tank, loading/parking area with slabs and water supply point. There is also an existing borehole to be decommissioned.



Plate 4-1 Septic tank and loading area on site

4.4 Project Surrounding

The proposed project site is surrounded by Kenya Airports Authority to the East, Freight Lane to the South, Four Points by Sheraton Nairobi Airport Hotel to the West and Maya Freight to the North.

Other immediate neighbors to the proposed project site include: Freight in Time, Nippon Express, Airflow, Freight Wings, Explolanka, Siginon Group Logistics, Kuhne Nagel, United Freight Logistics and Airflo.



Plate 4-2 Four Points Sheraton Hotel which is an immediate neighbor to the project area

4.5 Administrative Setting

The airport is a public utility operated by Kenya Airports Authority (KAA) and it serves Nairobi Metropolitan Region. The proposed project will be located within JKIA grounds in Embakasi

location within Embakasi sub-county. It is sandwiched to the south by Katani and Mlolongo locations in Athi River sub-county, to the East and North by Mihang'o location in Embakasi sub-county and, Githunguri location in Athi River sub-county and to the West Embakasi and Mukuru Kwa Njenga locations Nairobi East sub-county. Politically, JKIA entirely falls within Embakasi South (Embakasi and Mukuru Kwa Njenga locations) and Embakasi East constituencies.

Jomo Kenyatta International Airport (JKIA) is currently owned and administered by the Kenya Airports Authority (KAA) - a State Corporation that oversees the operation and management of all international airports in Kenya. As the country's largest airport, JKIA is a key strategic asset for KAA and the Kenyan government.

4.6 Physical Environment

4.6.1 General Climate

Nairobi, the capital city of Kenya, is situated at a high altitude, and its climate is influenced by its elevation and proximity to the equator. The climate within JKIA identifies with that of the greater Nairobi region; a tropical city located about 140km south of the equator and approximately 500km west of the Indian Ocean coast. The area is characterized by a semi-humid climate that is highly influenced by semi-aridity on the east (towards Machakos) and southern (towards Kajiado) directions.

4.6.1.1 Average Daily Temperatures

The average daily temperature throughout the year varies slightly from month to month with average temperatures of around 17°C during the months of July and August to about 20°C in March. But the daily range is much higher, with the differences between maximum and minimum temperatures each day around 10 degrees in May and up to 15 degrees in February.

The minimum temperatures also remain low during cloudy nights, usually hovering around 8 degrees Celsius and sometimes even reaching 6 degrees Celsius. Clear skies in January and February also bring colder nights.

4.6.1.2 Average Humidity Values

Because of Nairobi's location just south of the equator in combination with humid air pumped in from the Indian Ocean, the humidity values for each day are generally on the higher end. This is not to say that values are always high since the Easterly winds coming off the Indian Ocean tend to keep the temperatures standard throughout the country; therefore the "warm sticky" feeling is usually not associated with Nairobi. In the months of January to April, relative humidity values have been known to plummet to anywhere from 10% to 20%. The typical day, humidity-wise, starts nearly saturated in the morning hours and steadily decreases throughout the remainder of the day. The average annual percentage of humidity in Nairobi city is 72%. May is the most humid month while February is the least humid month. The figure below represents the average relative humidity level of Nairobi city.

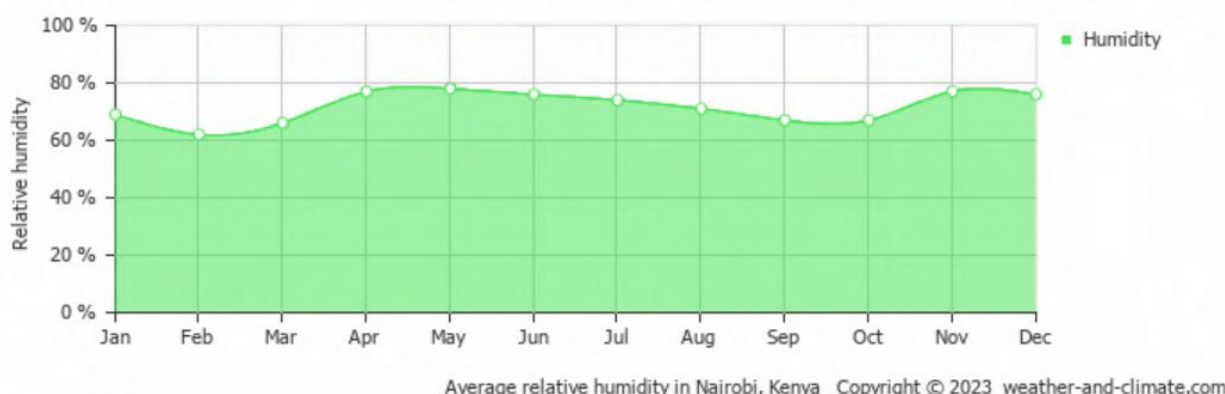


Figure 4-1: Average relative humidity in Nairobi. (Source: weather and climate.com)

4.6.1.3 Average Rainfall Amounts

With routinely high relative humidity figures, it is not surprising that the Nairobi climate produces much rain annually. In fact, from the past 50 years, the expected amount of rain could be anywhere in the range of 500 to 1500 mm, with the average ranging in at 900 mm. The majority of these rainfall figures crash down in Nairobi in one major and one minor monsoon seasons respectively.

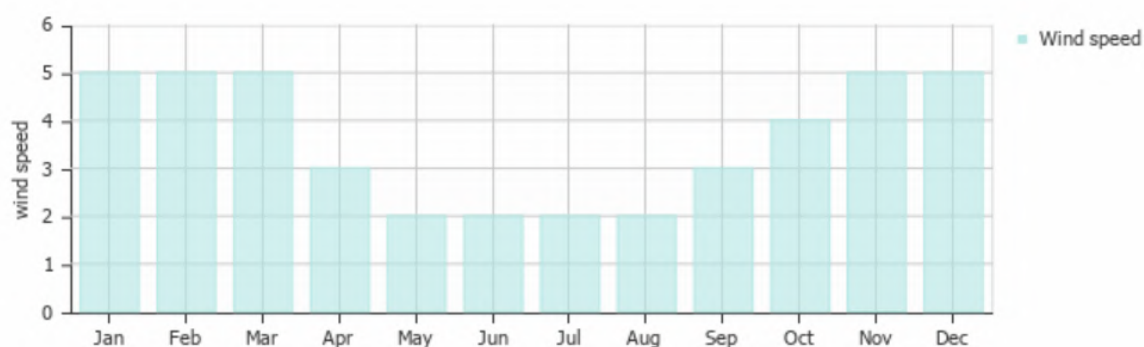
The major monsoon season occurs between March to May and is called the “Long Rains” by the locals. The minor monsoon seasons emerge within the October to December Months and is called the “Short Rains” by the Nairobi citizens. That is what the meteorologists as a whole know about the monsoon seasons. What they do not know is exactly when these seasons will start. There is usually not an indication of when these rainy seasons will start, since it is difficult to determine when one starts and when the other finishes. Consequently, one may think there is only one rainy season when looking at the annual rainfall amounts.

April 2024 marked the peak of the Long Rains (March-April-May) season over most parts of the country. This rainfall was near to above average all over the whole country except over Voi Meteorological station where below-average rainfall was recorded. By 26th April, the highest monthly rainfall total (767.9mm) was recorded in Miad Kandongu rainfall station in Kirinyaga county, followed by Kabete Meteorological station with 623.9mm. Areas around Nairobi including JKIA airport experienced flooding during the heavy rains between March to May. The proposed project site is one of the areas that were flooded during the heavy rains.

4.6.1.4 Average Winds

Winds along the surface are predominantly easterly throughout the entire year. They are shifted to the Northeast between October and April, and they are shifted Southeast between May and September. Right before the “Long Rains” season, the strongest winds occur, reaching speeds of 20 to 25 miles per hour. During the rest of the year, winds are usually at speeds of 10 to 15 miles per hour. During the night, the winds are calm.

The figure below shows the average wind speed in Nairobi.



Average wind speed in Nairobi, Kenya Copyright © 2023 weather-and-climate.com

Figure 4-2 Average wind speed in Nairobi

4.6.1.5 Average Sunshine

Early mornings in Nairobi are often cloudy, but the sun peeks by mid-morning. Throughout the year, there is an average of seven hours of sunshine per day. Thirty percent more sunlight reaches the ground during the afternoon than in the morning. Of course, there is more sunshine during the summer months, when the sun is more overhead in the southern hemisphere. Infrequently during the rainy season, the sun never shows through the clouds. Even in August, the cloudiest month, there is an average of four hours of sunshine.

4.6.2 Topography and Drainage

Nairobi lies at an average altitude of 1,680m above sea level, but this height ranges from 1500m (to the East) to 2300m (to the West). It is located at longitude 36° 50' East and latitude 1° 18' South about 140 km South of the Equator and situated at an elevation of about 5,500 feet above sea level, placing its high effect for the cooler air to keep its temperatures moderate.

Jomo Kenyatta International Airport (JKIA) is situated within the low-lying plains to the southeast of Nairobi City. This region is strongly influenced by the topography of the Athi Plains spanning across Machakos and Kajiado counties. The airport area itself consists of mild undulating and relatively flat terrain, sloping gently downwards in a south-easterly direction.

The overall drainage pattern is determined by the greater Athi River basin. There are no major permanent surface water formations in the immediate vicinity. The typical altitude ranges from around 1,500 meters near Athi River, located approximately 8 km to the southeast of JKIA, up to 1,800 meters further west towards the Ngong Hills where fault lines have created slightly more varied relief.

The landscapes around JKIA comprise open grassland savanna and scattered small farms. Soil types tend towards well-drained, sandy loam interspersed with patches of darker cracking clay. Although the natural environment has been modified substantially by airport infrastructure, sections of indigenous vegetation remain, while seasonal streams thread across parts of this topography during Kenya's rainy seasons before evaporating in the dry months. There are no natural permanent surface water bodies in the immediate neighborhoods. The proposed project site ground surface is almost flat with very shallow falls to the north and the south. The site slopes from South to North and has characteristics of flooding during the rainy season as observed during the site visit. A flood analysis is therefore recommended.

The proposed project site will however have no impact on surface run off compared to the existing condition as the ground coverage allows for sufficient percolation of ground water. The site is also not at risk of flooding as it is significantly higher than the areas that were flooded at the time.

4.6.3 Soils and Geology

The soils in Nairobi County are products of weathering of mainly volcanic rocks. This weathering has produced red soils of more than 50 feet in thickness. Various subdivisions are recognized in Nairobi according to the drainage, climatic regions and slopes. Particularly soils found at the project site area are defined as black clay or black cotton soils characteristically having high to extreme plasticity. The rocks in the Nairobi area mainly comprise of a succession of lavas and Pyroclastic of the Cainozoic age and overlying the foundation of folded Precambrian schists and gneisses of the Mozambique belt. The crystalline rocks are rarely exposed but occasionally fragments and found as agglomerates derived from the former Ngong volcano. Weathering has produced red soils that reach more than 15m in thickness in some parts of Nairobi.

The project area is mainly underlain by volcanic rocks, tuff and metamorphic rocks. The area is characterized by the Nairobi phonolite separated from the underlying Mbagathi phonolite trachytes by some thickness of a few feet of dark grey tuff, which belongs to the Athi Tuffs and Lake Beds Series. The soil around the JKIA airport are black clays referred to as black cotton soils described as being high to extremely high plasticity clays, silty clays or silty clays with sand.

The map below represents the geology of Nairobi city.

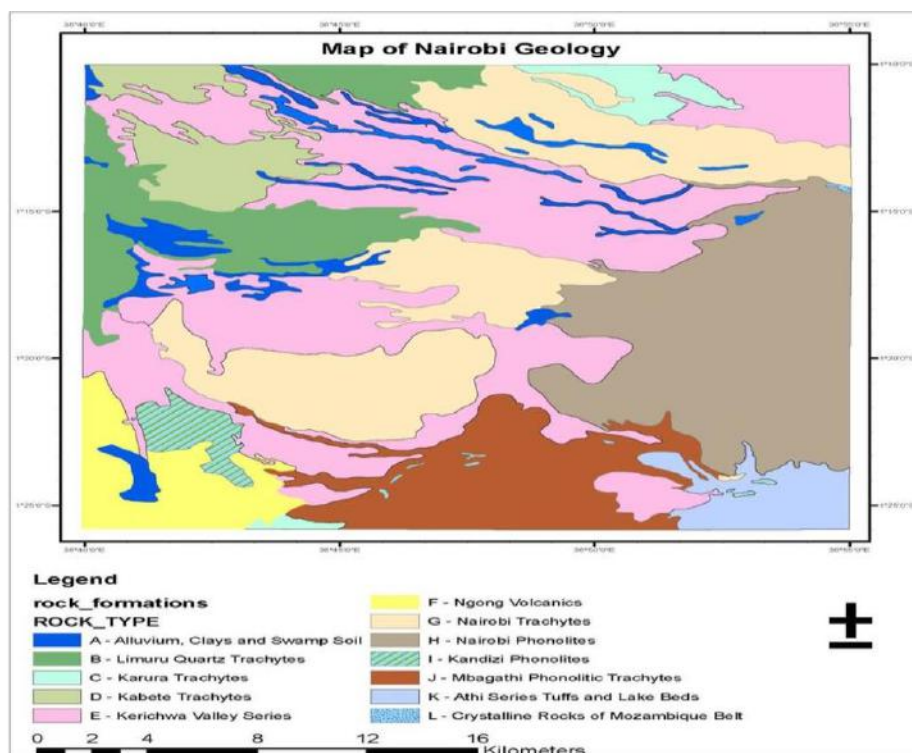


Figure 4-3 Map of Nairobi city geology

Based on the Geo-technical study that was undertaken in June 2024, the soils of the project area were found to be of an intermediate Pale Brown to Pale Grey, Moderately Weak, Damp to Wet plastic clay which was found to be unsuitable as a foundation. The underlying rock is however a sound foundation though the surface may be fractured and need to be removed during construction. It was recommended that the excavated soil should not be employed as fill under the proposed development. Reinforced concrete strip foundation bases are recommended under load bearing walls and pad foundation bases under columns for structural stability.

4.6.4 Water Resources

Due to a lack of natural surface freshwater bodies in the immediate JKIA vicinity, the airport depends on municipal water supplies from Nairobi City alongside groundwater extraction. The Nairobi Water and Sewerage Company (NWSC) provides the main domestic water lines to the airport from the city along the Outer Ring Road via a 200mm diameter pipeline. This links to storage tanks with 8,300 cubic meter capacity within JKIA's infrastructure network.

In addition, JKIA operates seven drilled boreholes scattered around the airport grounds tapping into the underlying aquifers. Combined, these locally abstracted groundwater sources supplement piped municipal supplies, contributing to JKIA's overall water security and providing backup during periodic city water shortages.

The boreholes tap localized shallow aquifers containing fresh groundwater lenses floating above deeper saline layers. Yield and water quality from these varies - while some produce potable supplies, higher salinity in certain wells restricts use to non-potable applications like landscaping irrigation. Monitoring and governance of sustainable yields from the airport's borehole fields remains an ongoing imperative to manage this valuable groundwater resource over the longer term. The proposed project will source water from Nairobi Water and Sewerage Company supplemented by the existing borehole on site. If need be, the proponent has identified a site to drill another borehole.

4.6.5 Land Use Planning and Zoning

The land occupied by JKIA itself remains fully government-owned, under the jurisdiction of the Kenya Airports Authority (KAA). However, the surrounding neighborhoods have undergone extensive changes in land tenure and usage over recent decades. Initially, it consists of large group-owned ranch properties like Syokimau, Katani and Githunguri focused on livestock rearing, these range lands have gradually given way to intensified subdivision and development. Through the process of demarcation, communal ranch lands were apportioned out to individual members, who incrementally sold off plots for private residential and commercial building construction.

This land privatization and sale for real estate has rapidly converted the previous ranching landscape into clustered high-density housing estates, retail parks, warehouses and light industrial plants. Enabled by infrastructure expansion like roads leading to JKIA, virtually all adjoining land has transitioned from expansive grazing uses into mixed residential-industrial neighborhoods accommodating Nairobi's sprawl. Planning policies strive to retain open spaces and impose zoning restrictions. However, the area remains characterized by intense, often unregulated small-scale building activity on tightly subdivided plots. These changes in land tenure and usage patterns right up to the airport perimeter continue shaping a built landscape that bears ever less resemblance to its recent ranching past.

Land use around the JKIA ranges from residential settlements to industrial and commercial establishments. Jomo Kenyatta International Airport is currently under Zone 20 of the Nairobi Zone Guide. The zone allows for Special/strategic facilities and developments whose boundaries need to be clearly defined.

The proposed project site parcel of land L.R. No. 9043/315 lies within Jomo Kenyatta International Airport (JKIA). The land is owned by Freight Lane Hotel Limited whose Title deed is attached as *Annex 3*. The proponent has processed a Change of Use for the proposed project site from Godowns / Warehouse to Hotel and Offices by Nairobi City County. The client is currently pursuing necessary approvals from Kenya Airports Authority to develop the land and from Kenya Civil Aviation Authority on height Approval.

4.6.6 Air Quality

Emissions within JKIA are associated with aircraft (that accounts for 98% of the total CO₂ generated) dependent on among other factors fuel type, aircraft type, engine type, load and flying altitude. The main source from the operations is experienced during the landing and take-off events that are within the 1,000m above ground level, taxing-in, taxing-out, climb-out and approaching landing. Recent air quality assessments conducted at JKIA have shown compliance with national and international air quality standards (Ministry of Environment and Forestry, Kenya, 2020). Air quality monitoring programs are conducted at JKIA to assess the concentration of air pollutants such as particulate matter (PM₁₀, PM_{2.5}), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs) in the ambient air. These pollutants originate from aircraft emissions, ground support equipment, vehicular traffic, and industrial activities within the airport premises.

Data from air quality monitoring stations located at strategic locations within and around JKIA provide real-time measurements of air pollutant levels, enabling authorities to evaluate compliance with air quality standards and identify potential sources of pollution. Comprehensive air quality assessments include dispersion modelling, source apportionment studies, and health risk assessments to quantify the impact of air pollution on human health, ecosystems, and sensitive receptors.

The potential mobile sources of air pollutants emissions from the proposed development during the construction stage will mainly consist of: vehicular traffic emissions as a result of the contractor's batching plant, movement of trucks ferrying in construction materials, and ferrying out waste products; dust emissions during the construction phase and emissions from

generators during the operational phase. Potential sources of air pollutants during the operational phase will consist of vehicular traffic emissions and power backup generators

Baseline Air Quality Measurements (AQM) for the proposed project site were conducted on the 26th July 2024. The objective of the assignment was to determine the concentration levels of gaseous and particulate matter pollutants of concern within the boundary of the premises. The scope of the measurement survey involved air quality sampling at four monitoring stations that collected 60-minute air samples at 1-minute intervals.

The Short-term concentration for the ambient air pollutants of concern were compared with the Environmental Management and Coordination Act (EMCA) Air Quality regulations, 2014 and the World Health Organization (AAQG, 2021), and target values for the protection of human health.

Five Ambient Air Quality Monitoring Stations (AAQMS) were established on site; All sites were within the boundary of the facility. The five ambient monitoring locations were selected as the best locations to represent surrounding. The figure below presents the coordinates of the monitoring Locations:

Monitoring Point	GPS Coordinates	
MP 1	1.33972°S	36.91835°E
MP 2	1.34031°S	36.91765°E
MP 3	1.34050°S	36.91784°E
MP 4	1.34035°S	36.91856°E

Figure 4-4 Monitoring points for the Air Quality Measurements

The measurements were done continuously for a period of 60 min at each monitoring point and results were as shown in the **figure 4.5 and 4.6** below:

Sampling Location	Time Weighted Average	Concentration Levels ($\mu\text{g}/\text{m}^3$)	
		PM 2.5 ($\mu\text{g}/\text{m}^3$)	PM10 $\mu\text{g}/\text{m}^3$
MP 1	60 mins	0.0	0.0
MP 2	60 mins	0.0	0.0
MP 3	60 mins	0.0	1.6
MP 4	60 mins	0.13	2.9
EMCA (AQG)		75 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$

Figure 4-5 Particulate Matter Results

The ESMP Chapter outlines some of the measures the proponent/contractor will put in place to reduce emissions.

Sampling Location	Average Concentration Levels			
	CO	NO ₂	SO ₂	VOC
MP 1	BDL	140.7	420.0	310
MP 2	BDL	44.01	431.03	200
MP 3	BDL	53.67	423.07	320
MP 4	BDL	57.50	433.3	280
EMCA –AQG	300ppm	100 µg/m ³	125 µg/m ³	600 µg/m ³

Figure 4-6 Results for the gaseous pollutants

The average PM 2.5 and PM 10 results recorded across all monitoring points were found to be within limits set in the Environmental Management Coordination Act (EMCA) Air Quality Regulations, 2014. The level of gaseous pollutants of concern which include (CO, VOCs and NO₂) were found to be within the recommended EMCA Air Quality Regulations, 2014. The results indicated that there is an excess of SO₂ levels at all monitoring locations. This could be attributed to gases emanating from vehicular emissions along the nearby road. Detailed report has been annexed to the report (*Annex 11*)

Continuous monitoring of the ambient air quality is recommended as this will assist in obtaining concrete information on the status of air pollution. Measurements should be done during different weather and seasons to ensure that all the weather patterns are taken into consideration during the monitoring process.

4.6.7 Noise and Vibration

Noise pollution is a significant environmental concern at JKIA due to the continuous operation of aircraft, ground handling equipment, and vehicular traffic within the airport vicinity. Noise levels are measured using decibel (dB) scales and are influenced by factors such as aircraft engine noise, ground operations, and nearby road traffic. Comprehensive noise monitoring programs are implemented to assess and mitigate the impact of noise pollution on surrounding communities, wildlife habitats, and airport personnel. Regulatory standards set by the International Civil Aviation Organization (ICAO) and national aviation authorities govern permissible noise levels and require airports to implement noise abatement strategies to minimize adverse effects on the environment and public health.

These main sources of noise at JKIA are associated with aircraft operations and peak during flight events (landing, takeoff and taxiing) of different aircraft types (large and small). Noise pollution levels at JKIA are monitored to mitigate the impact of aircraft operations on surrounding communities (Environmental Management and Coordination Act, 2015). Noise mapping studies have identified areas of concern, prompting measures such as flight path optimization and sound insulation for affected buildings.

The main meteorological parameters affecting the propagation of noise include wind speed, wind direction and temperature. The wind speed average within the area is 3.5 m/s annually with the wind direction being from the East. Downwind levels may have an increase in decibels while upwind levels can drop in levels. Wind speeds of more than 5 m/s can result in ambient noise levels being dominated by wind generated noise. Buildings can act as noise barriers, reflectors or amplifiers depending on the design, construction and orientation of the building, for example reflective surfaces such as glass and metal reflect sound waves.

The proposed project site is located along Third Freight Lane and Freight Road and within a specialized freight area surrounded by light industrial companies dealing with Cargo operations that are noisy especially at night. The potential noise emitting sources within the project area include: Aircraft and Dollies used in transporting Cargo along second freight lane, Trucks and Lorries. Noise from incoming and ongoing traffic is also a potential source.

The site is surrounded by the following noise receptors:

- Parastatal buildings and officers: KAA headquarters (25m from site) to the East of the site.
- Cargo use buildings i.e., Maya Freight (10m from site), Freight in Time (50m from site), Kuenhe + Nagel (100m from site), to the North of the site.
- Commercial use hotels and offices to the West of the site i.e. Four Points by Sheraton (50m from site), East African Growers (100m from site).
- The South of the site is currently abated by roads: Third Freight Lane and Tower Road and the Airport Reserved areas which are not sensitive noise receptors.

The baseline noise measurements were undertaken on Wednesday 20th December from 1500 hrs to Thursday 21st December 2023, 1130, hrs. The background noise levels measured in the project area were used in assessing the baseline noise conditions whereby noise levels were taken from (2) positions on site and measured over 24 hours. In position (1), noise levels averaged 53 Db. When planes flew above the area, the noise levels would reach as high as 87 Db. At the 2nd position, noise levels averaged 51.6 Db, with the highest noise recorded at 82Db, whenever planes flew over the area. The highest noise level recorded was 87 Db whilst the lowest was 37 Db. The peak in noise levels can be attributed to passing planes. The top 1% of values averaged at 61.3 dB. The top 25% of values averaged 51.2 dB whilst the top 50% averaged at 48.8 dB.

The most recent Noise level measurements were conducted on **12th August 2024, 13th August 2024, and 14th August 2024**. The noise levels and monitoring points are as represented in the table and image below:



Figure 4-7: Noise sensitive receptor points

The highest noise levels were recorded at P4 – Kuehne Nagel attributed to the ongoing construction on the site, industrial trolleys and passing airplanes. The table below displays noise levels at different Monitoring points:

Point	Location	Zone Use	L _{AMAX} (dB)	L _{AEQ} (dB)	L _{AMIN}
P1	Kenya Airport Authority Headquarters (KAA)	Office	75.4	50.4	35.1
P2	Maya Freight	Industrial	88.6	50.7	34.6
P3	Freight in Time	Industrial	86.5	52.4	32.7
P4	Kuehne + Nagel	Industrial	93.5	65.4	37.2
P5	Four Points Sheraton	Commercial	74.2	56.3	34.2
P6	East African Growers	Industrial	82.4	48.2	35.3

Table 4-1: Table showing the location of the noise sensitive receptor points

The Environmental Management and Coordination Act (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009, has made provisions for maximum permissible levels within different operation zones as shown in the figures below.

MAXIMUM PERMISSIBLE NOISE LEVELS					
Zone		Sound Level Limits dB(A)		Noise Rating Level (NR)	
		(Leq, 14 h)		(Leq, 14 h)	
		Day	Night	Day	Night
A.	Silent Zone	40	35	30	25
B	Places of worship	40	35	30	25
C.	Residential : Indoor	45	35	35	25
	Outdoor	50	35	40	25
D.	Mixed residential (with some commercial and places of entertainment)	55	35	50	25
E.	Commercial	60	35	55	25

Time Frame

Day: 6.01 a.m. – 8.00 p.m. (Leq, 14 h)
 Night: 8.01 p.m. – 6.00 a.m. (Leq, 10h)

Figure 4-8 Maximum Permissible Noise Levels (Source : EMCA (Noise and Excessive Vibration Pollution Control) Régulations, 2009

Based on the noise survey conducted on 12th August 2024, 13th August 2024, and 14th August 2024, the average noise levels across all Monitoring Points (MP) were found to exceed the noise limits established under the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 under zone D as indicated in Figure 4.8. This could be attributed to the ongoing construction on the site for Kuehne and Nagel, industrial trolleys and passing airplanes

Sound power specifications for potential operational and construction equipment was sourced from literature and subsequently used as a basis for attenuation-over-distance calculations to determine worst-case operational noise levels.

Detailed construction plans have not yet been developed and a generic construction plan was assessed for the FLH site based on previous experience with construction phase noises. Below is a list of potential noise from construction equipment on site.

Equipment Sound Power Level (dB(A))	Sound Power Level (dB(A))
Excavators	80-101
Tipper Trucks	80
Graders	87
Bulldozers	88-110
Front end loaders	104.0
Rollers	101
Concrete Mixers	94
Generators	58

Table 4-2: Potential noise levels from construction equipment

Due to the lack of detailed operational phase plans and associated source parameters at, a high-level, semi-quantitative assessment of the potential sources and impacts associated with the site has been undertaken. Such an assessment is based on the current design for the hotel as presented in the table below:

Typical Source	Source Power Level (dB (A))
Rooftop Bar	60-110
Guestrooms	28-32
All Day Dining	60-80
Back of House	60
Diesel Generators	58

Table 4-3: Potential noise sources during the project's operational phase

The attenuated sound levels given by the source is a scenario sound level at 110 dbA measured 1 metre from source are as below:

Point	Distance from Source	Attenuated Sound Level
P1	25m East	82
P2	10m North	90
P3	25m North	82
P4	100m North	70
P5	25m West	82
P6	100m West	70

Table 4-4: Attenuated sound levels

Detailed report has been annexed to the report (*Annex 12*). The Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations 2009 has also established limits for maximum permissible noise levels for construction sites for different facilities as shown in the figure below:

MAXIMUM PERMISSIBLE NOISE LEVELS FOR CONSTRUCTIONS SITES
(Measurement taken within the facility)

Facility		Maximum Noise Level Permitted (Leq) in dB(A)	
		Day	Night
(i)	Health facilities, educational institutions, homes for disabled etc.	60	35
(ii)	Residential	60	35
(iii)	Areas other than those prescribed in (i) and (ii)	75	65

Figure 4-9 Maximum Permissible Noise Levels for Construction Sites (Source: EMCA (Noise and Excessive Vibration Pollution Control) Regulations, 2009)

The proponent will be advised to ensure noise levels for the proposed project during construction work do not exceed the maximum permissible levels. Where necessary, the proponent will be advised to notify the community/neighbors of any scheduled noisy activities. If need be, these activities can be rescheduled to weekends or 5 pm to 6 pm after working/school hours. The proponent will also be advised to apply for a noise permit from the county government of Nairobi before undertaking activities that exceed the permissible levels and that would be a nuisance to the public.

4.7 Biological Environment

4.7.1 Flora and Fauna

The landscape around JKIA has undergone extensive transformation as a result of intensive urban and industrial development, alongside the growth of the airport infrastructure. This has led to a sharp reduction in natural vegetation cover. Within the airport boundaries and immediate vicinity, there is now a notable absence of indigenous flora apart from occasional small patches of short, withered grass and newly planted exotic tree varieties. The surrounding areas comprise built-up residential suburbs, factories, warehouses, highways, and other sealed surfaces.

This highly modified setting with limited vegetation is favourable from an aviation operational perspective for the airport. The lack of tall buildings, forests or obstacles prevents obstruction to flight paths or aircraft movements. Outside the busier developed zones, some small pockets of indigenous vegetation persist in nearby riparian zones along seasonal streams. Out on the Athi-Kapiti plains south-eastwards, the traditional grassland savanna and woodland habitats retain higher biodiversity, although increasing land subdivision threatens this as well.

Overall, the airport's vegetation profile has been transformed into one dominated by infrastructure and managed green spaces concentrated in developed zones rather than natural areas. While favourable for flights, proactive environmental conservation is required to offset habitat losses while supporting social and economic progress for Nairobi. Careful planning can achieve an integrated sustainable balance.

The airport is within a mixture of industrial and commercial area and there is a notable absence of natural vegetation following intensive social and economic-driven land use changes. On the undeveloped land area earmarked for the Airport hotel, there exists vegetation cover, bushes, 1 palm tree and 3 young acacia tree species.



Plate 4-3 A palm tree observed on proposed project site



Plate 4-4 Bushes and a young acacia tree observed on site

4.8 Socioeconomic Environment

4.8.1 Population

According to the 2019 National Population and Housing Census, the population of Nairobi city is estimated to be 4.397 million. This is projected to rise to about 7.14 million by 2030 (UN DESA, 2016). The population growth rate stands at 4.1 percent per annum. Nairobi's population is notably youthful with 49 percent between 15 and 36 years. The general growth rate of Nairobi city is approximately 4.1% a year, which signifies a steady upward population growth trend into the future. Nairobi has an overall population density of 3,079 people per square kilometre. A growing economy and swelling population numbers from both immigration and natural growth are continually increasing the city's population size.

The proposed project is timely in its conception and development as it will meet the demand for accommodation facilities within the Airport and Nairobi city at large, for the steadily increasing city's population. In the last census report (2019), the project area sub-county had about 988,808 people with a population density of 11,458/km².

On the other hand, the internal population within JKIA grounds consists of workers working at JKIA and different organizations/ companies located within the Airport, passengers (local and international), transit service providers (mostly transporters) and passenger escorts/receivers (relatives and friends).

4.8.2 Infrastructure and Transport

Due to rapid urban growth, the provision of basic infrastructure for all has become an important concern of development planners in Nairobi. Basic infrastructural services such as Solid Waste Management (SWM) systems; Water and Sewerage Systems; Drainage and flood protection; Roads and Rail; Mass transportation; Electric installations; and telecommunications are currently under immense pressure due to ever-increasing population rates within Nairobi. Environmental pollution, congestion and problems have been the result of the under-provision of such basic services.

Nairobi city is well served with good telecommunication and transport networks such as air, road, and railway. It is centrally located to serve the Eastern African Countries. Bus and train stations are within an easy walk of the city centre. The newly launched Expressway has toll points in close proximity to the area: JKIA toll Station. The Network facilitates transportation of agricultural products from Western Kenya to the Coast. The city is a hub of road transport connecting other major towns in the country. On air transport, Jomo Kenyatta International Airport makes it easy to transport people and goods from all over the world into the country and vice versa.

4.8.2.1 Energy Access

The main sources of energy in Nairobi County are electricity, solar, LPG, biogas, paraffin, charcoal and firewood. Lack of access to clean sources of energy is a major impediment to development through health-related complications such as increased respiratory infections and air pollution. The type of cooking fuel used by households is related to the socioeconomic status of households/individuals.

The project area is connected to Kenya's Power grid (11kv Power line) which serves as the main source of energy for most enterprises in the area.



Plate 4-5: K11 Kv Kenya Power line next to the site

4.8.2.2 Road, Rail and Airports

Nairobi County comprises of various infrastructure developments including road and railway networks, water supply, power supply, airports, transport and telecommunication systems, sewerage networks and treatment works. Key infrastructure development that links the County includes Thika Road Superhighway together with the Eastern and Northern Bypasses, the Standard Gauge Railway (SGR) and the Nairobi Expressway. The most common means of public transport within the county are matatu, buses and train. The proposed facility is strategically located with easy access to the Standard Gauge Railway in Syokimau, Jomo Kenyatta International Airport, Wilson Airport, Nairobi Expressway and Mombasa Road.

4.8.2.3 Water supply

Approximately 94% of the piped water supply in Nairobi comes from rivers and water reserves in the Aberdare Ranges, north of the city. Portable water in Nairobi County is mostly piped

water from Nairobi City Water and Sewerage Company (NCWSC). The source of this water is from rivers and reservoirs which undergo treatment before being distributed to consumers. The project is well served with water supply from NCWSC. However, several factors compromise the city's water quality, ranging from natural phenomena such as the high fluoride content in groundwater to anthropogenic factors such as poor wastewater treatment and environmental degradation both within the city and in the surrounding areas. The project area and many areas within Nairobi have a high potential for underground water use through construction of boreholes to supplement the other sources of water supply. It is anticipated that the development will source its water supply from Nairobi City Water and Sewerage Company. The proponent shall decommission the existing borehole and drill another borehole on site to supplement the water supply from Nairobi Water and Sewerage Company.



Plate 4-6: Water supply within the project site

4.8.2.4 Waste Water Management

Wastewater from homesteads and industries is collected in Nairobi via a system of interconnected channels and flows to Ruai Treatment works where it's treated, and effluent is released to the Nairobi River. However, due to the higher population in the slums within Nairobi, most of the wastewater is directly released to the nearby streams and rivers, accounting for the high level of pollution in the rivers. This is currently being addressed by the Rehabilitation and Restoration programme by the Ministry of Environment, Water and Natural Resources. The programme began in 2010 and is aimed at rehabilitation, restoration and sustainable management of the Nairobi River Basin in order to provide improved livelihoods and enhance environmental quality and values through well-regulated economic and recreational ventures.

JKIA has an extensive sewerage and wastewater management system for safe handling of all liquid discharges from airport operations. Sewage from airport terminals and buildings is directed to a 20,000 m³ capacity treatment plant via underground sewer lines. Here it undergoes pre-treatment, primary treatment, secondary biological treatment and disinfection before the treated effluent is discharged as per National Environmental Management Authority guidelines. Regular sampling ensures consistent standards are maintained.

The project site area is well served by Nairobi City Water and Sewerage Company sewerage services. The proponent intends to establish a grey water treatment plant. This will enable treatment and recycling of wastewater for re-use in flushing toilets and irrigation. The proponent will also put in place a storm water foul water drainage channel that will be connected to the existing sewer line.

4.8.2.5 Solid Waste Management

Out of 1,600 metric tons of solid waste generated daily in the city by 2002, only 40 percent was being collected. Out of this total the Nairobi City Council and Private Companies combined, only managed to dispose 47.1 percent of the total garbage turnover. The

accumulated waste over the years has continued to be a bottleneck to Nairobi City administrators. The persisting poor waste management problems calls for proper waste disposal strategies and facilities like incinerators.

Solid waste at JKIA is segregated into biodegradable, recyclable and hazardous streams for responsible disposal. Color-coded bins across the airport guide users appropriately. Waste is transported from collection points to dedicated disposal sites in covered trucks to restrict leaks or spills. Hazardous medical and electronic waste is incinerated via approved handlers. Composting and partnerships with recycling companies promote the reuse of materials. Open dumping or burning is prohibited. With growing passenger traffic, JKIA continues to expand its waste handling capacities through advanced treatment infrastructure, latest technologies adoption and process standardization - ensuring both legal compliance and environmental conservation.

The proponent will contract a NEMA Licensed Waste collector to handle all waste within the facility. Waste management during the construction period will be addressed through a clause in the contract between the proponent and the contractor. This clause stipulates that the contractor must sign an agreement with a NEMA approved waste collector operating within the airport premises. Compliance with all airport regulations, including Environmental Management and Coordination (Waste Management) Regulations, 2006 and Sustainable Waste Management Act, 2022 will be mandatory for the contractor.

The proponent shall ensure Proper Waste management practices such as Separation at source, Re-use and recycling of waste are adopted during the operational phase of the project. Plastic waste generated by the hotel operations shall be re-used and recycled.

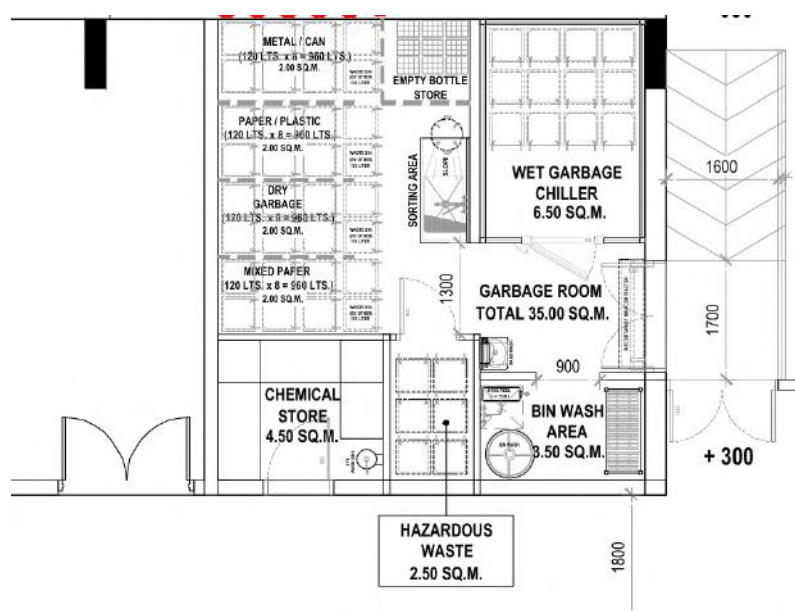


Figure 4-10: Proposed Solid Waste management design System

4.8.2.6 Economic Activities

The major economic activities in Nairobi County include businesses in formal and informal lines. Some of the major investments in the city are industries, service providers and office complexes among others. Due to its population, Nairobi provides numerous opportunities for trade at various scales. Because of these characteristics, it is considered the commercial centre for Kenya and even East Africa. Owing to its huge economic potential, Nairobi was once the headquarters of the East African Community (EAC).

In 2020, Nairobi City County accounted for 27.5 percent of the total national economy with gross domestic product (GDP) valued at Ksh 2,669,829 (KNBS 2021). Nairobi's economically

active population is 2.23 million. The economic structure of Nairobi city is dual, characterized by shrinking formal employment opportunities and an informal sector that is increasingly expanding and accounts for 83 percent of total employment opportunities (KNBS, 2022).

Main economic activities around the project site are business enterprises with a majority being transport and logistics companies. There are also similar hotel developments such as Crowne Plaza Airport Hotel and Four Points by Sheraton Airport Hotel located within Jomo Kenyatta International Airport Area.

4.8.2.7 Tourism Activities

Nairobi City County has major parks and museums that serve as main tourist attractions and activities centres. The main national parks are Nairobi National Park, Nairobi Safari Walk and Nairobi Mini Orphanage. The County also boasts of the Nairobi National Museum which houses a large collection of artifacts portraying Kenya's rich heritage through history, nature, culture, and contemporary art. Nairobi city is also the centre for many tour companies and travel agencies. City hotels range from low-cost budget to luxury and offer good value and excellent service. The proposed Airport hotel is strategically located to provide access to the tourist attraction centres.

4.8.3 JKIA's current initiatives towards greener aviation

As part of its sustainability efforts, JKIA has implemented various green programs to minimize the environmental impact from its operations. A large tree planting drive has seen over 3,000 indigenous trees planted along the airport's periphery. This serves as an additional natural sound barrier supplementing the earth embankments installed for noise attenuation. More greening drives are planned alongside upcoming developments.

An advanced sewage treatment plant allows recycling of water for non-potable uses like horticulture and landscaping. Extensive waste segregation and composting also prevent useful materials from reaching landfills. Motion sensor lights, solar heaters and optimized HVAC systems curb energy demands.

As JKIA evolves to meet Nairobi's air transport needs, environmental stewardship remains an integral aspect through tree planting, clean vehicle adoption, water recycling and energy conservation initiatives airport wide. The goal is to become the region's benchmark for eco-friendly airport infrastructure operation.

The proponent will adopt Green-Building Technologies in line with JKIA's sustainability efforts and initiatives towards greener aviation. The technologies aiming at ensuring energy conservation, reducing water use and waste generation have been discussed in detail in section 3.8.

4.8.4 Traffic Movement

JKIA serves as a crucial hub for international air travel, facilitating the movement of passengers and cargo between Kenya and various global destinations. International traffic flow at JKIA encompasses arrivals, departures, and transit passengers traveling to and from diverse destinations across Africa, Europe, Asia, the Middle East, and America.

4.8.4.1 Passenger Movements

According to recent data from the Kenya Airports Authority (KAA), JKIA handles millions of international passengers each year, with passenger traffic exhibiting steady growth due to increased connectivity, airline route expansions, and tourism initiatives. The airport serves as a gateway to Kenya's renowned wildlife reserves, pristine beaches, and cultural attractions, attracting leisure and business travelers from around the world.

In 2021, JKIA handled approximately 7.5 million passengers, making it one of the busiest airports in Africa (Kenya Airports Authority, 2022). The annual growth rate of passenger traffic at JKIA has been averaging around 5% over the past five years, indicating consistent demand for air travel services (Kenya Civil Aviation Authority, 2021).

4.8.4.2 Goods Movement

Jomo Kenyatta International Airport serves as a major cargo center for both inbound and outbound goods. Air cargo has emerged as a key driver of activity at the airport. According to Kenya Airport Authority, total air cargo throughput at JKIA reached approximately 550,000 metric tonnes in 2021, up from just over 330,000 tonnes in 2013. This represents an average annual cargo growth rate of 8.5% over the past decade. Analysts predict JKIA air cargo volume could double over the next 10 years. This might be driven by rising global demand for Kenyan exports like fresh produce, flowers, and pharmaceuticals. The access road to the proposed project site is also used for freight area activities that include the distribution of goods for both national and international transit.

4.8.4.3 Air Traffic

JKIA also recorded approximately 120,000 aircraft movements in 2021, including both passenger and cargo flights (Kenya Airports Authority, 2022). The airport operates as a key transit point for international flights connecting Africa to other regions worldwide.

4.8.4.4 Surface Traffic

Jomo Kenyatta International Airport (JKIA) is Kenya's largest aviation facility and the busiest airport in East and Central Africa. The airport has witnessed substantial growth in passenger traffic over the last decade, resulting in increased vehicular volumes entering and exiting the airport daily. Approximately 12,800 vehicles access the airport per day which is a 51% increase from the 8,500 daily vehicle average reported in the past (Kenya Airports Parking Services).

4.8.4.5 Traffic survey around the Project Site

A traffic impact Assessment has been conducted and the report (*Annex 13*) will aid in the preparation of a **Traffic Management Plan (TMP)** to address the potential traffic effects associated with the construction. This plan will identify the standards necessary for the management of traffic during construction as well as operational phase of the project.

5 RELEVANT POLICY, LEGISLATIVE AND PLANNING FRAMEWORK

5.1 Introduction

This chapter includes a summary of the laws, regulations and institutional setup relevant to environmental and social management in Kenya. A review of the most pertinent regulations and standards governing health and safety has been included. In addition, an analysis of MEAs and their applicability to the proposed project were reviewed and presented to guide the proponent. This section also includes a review of environmental quality standards relevant to the proposed project. Kenya has in place a wide range of policy, institutional and legislative frameworks to address the major causes of environmental degradation and negative impacts on ecosystems emanating from industrial and economic development programmes. The legislative framework is meant to ensure that proposed projects are economically beneficial while being environmentally sustainable. A brief description of how the proposed project will comply with the relevant environmental quality standards has been given for each case.

5.2 Constitution of Kenya

The Constitution of Kenya is the country's supreme legislation and has Environmental provisions in Chapter Four, under 'Rights and Fundamental Freedoms', Chapter Five, under 'Environment and Natural Resources', and Chapter Ten, under 'Judicial Authority and Legal System'. The Fourth Schedule also includes environmental provisions under 'Distribution of functions between National and County Governments' and the Fifth Schedule titled 'Legislation to be enacted by Parliament'. Environmental rights and freedoms are presented in Article 42 of the new constitution, which states: Every person has the right to a clean and healthy environment, which includes the right:

- To have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69; and
- To have obligations relating to the environment fulfilled under Article 70.

The Kenyan constitution also gives prominence to public participation; as a general national value in environmental protection. Article 69(1) states that the State shall encourage public participation in the management, protection, and conservation of the environment. Chapter 5 Part II -Environment and Natural Resources - Article 69 (1) of the Constitution of Kenya, 2010 commits the State to:

- a) Ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;
- b) Work to achieve and maintain a tree cover of at least ten percent of the land area of Kenya;
- c) Protect and enhance intellectual property and indigenous knowledge of, biodiversity and genetic resources;
- d) Encourage public participation in the management, protection and conservation of the environment;
- e) Protect genetic resources and biological diversity;
- f) Establish systems of environmental impact assessment, environmental audit and monitoring of the environment;
- g) Eliminate processes and activities that are likely to endanger the environment; and
- h) Utilize the environment and natural resources for the benefit of the people of Kenya.

Article 69 (II) states that "Every person has a duty to cooperate with state organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources."

The proposed project is compliant with the provisions of the Kenya Constitution through the undertaking of Integrated Environmental and Social Impact Assessment that incorporates the ethos of sustainable development and efficient use of natural resources

5.3 National Policy Framework

5.3.1 The Vision 2030

Vision 2030 (GOK, 2007) is divided into three fundamental pillars: economic, social and political. The social pillar aims at realizing a just and cohesive society enjoying equitable social development in a clean and secure environment. These pillars are anchored on the following foundations: Macroeconomic stability; continuity in governance reforms; enhanced equity and wealth creation opportunities for the poor; infrastructure; energy; science, technology and innovation; land reform; human resources development; security and public sector reforms.

Vision 2030 aims to transform Kenya into a globally competitive, newly industrialized, middle-income and prosperous country. The growth objectives underpinning Vision 2030 require a sustainable annual economic growth rate of more than 10% supported by industry, agriculture and services. Efficient, accessible and reliable infrastructure has been identified as an enabler for achieving sustained economic growth, development and poverty reduction by lowering cost of doing business and improving the country's global competitiveness.

It is anticipated that the proposed project will spur economic growth and development both at the construction and operational stages of its implementation through creation of a number of economic opportunities. The ideals of a safe and clean environment will be as well adopted and engraved in all the stages of the proposed project as envisioned in the social pillar of Vision 2030, which identifies Environment, Water and Sanitation as a key priority sector of Kenya's development agenda.

5.3.2 Sessional Paper No. 10 of 2014 on the National Environment Policy

This Policy proposes a broad range of measures and actions responding to key environmental issues and challenges. It seeks to provide the framework for an integrated approach to planning and sustainable management of natural resources in the country. It recognizes the various vulnerable ecosystems and proposes various policy measures not only to mainstream sound environmental management practices in all sectors of society throughout the country but also recommend strong institutional and governance measures to support the achievement of desired objectives and goals.

The broad objectives of the national environmental policy in Kenya are: -

- a) To ensure optimal use of natural resources while improving environmental quality.
- b) To conserve natural resources such that the resources meet the needs of the present without jeopardizing future generations in enjoying the same.
- c) To develop awareness that inculcates environmental stewardship among the citizens of the country.
- d) To integrate environmental conservation and socioeconomic aspects in the development process.
- e) To ensure that national environmental goals contribute to international obligations on environmental management and social integrity.

In line with the above policy statements, this ESIA has been conducted to ensure that potential environmental and social issues are appropriately addressed. Once approved by NEMA, the Project Proponent will also need to conduct periodic Environmental Audits to ensure continuous conformity with the overall goal of this Session Paper.

5.3.3 Sessional Paper No. 6 of 1999 on Environment and Sustainable Development Policy.

The policy defines approaches that will be pursued by the Government in mainstreaming the environment into development. The policy harmonized environmental and developmental objectives with the broad goal of achieving sustainable development.

The key objectives of the Policy include: -

- (i) To ensure that from the onset, all development policies, programs, and projects take environmental considerations into account,
- (ii) To ensure that an independent Environmental Impact Assessment (EIA) report is prepared for any industrial venture or other development before implementation,
- (iii) To come up with effluent treatment standards that will conform to acceptable health guidelines.

The policy recommends the need for enhanced re-use/recycling of residues including wastewater, use of low or non-waste technologies, and increased public awareness-raising and appreciation of a clean environment. It also encourages the participation of stakeholders in the management of waste within their localities. Regarding human settlement, the paper encourages better planning in both rural and urban areas and the provision of basic needs such as water, drainage, and waste disposal facilities among others.

This policy is relevant to the proposed project in view of the potential impacts on the environment.

5.3.4 The National Climate Change Response Strategy (NCCRS), 2010

Climate change remains one of the greatest challenges facing humanity globally in the 21st Century. Locally, some of the effects of climate change experienced include temperature increases, rainfall intensification and irregularity. This policy fast-tracks and rallies nationwide actions towards climate change adaptation and mitigation of GHG's emissions.

The National Climate Change Response Strategy has the following key recommendations: Adaptation and mitigation measures in key sectors; necessary policy, legislative and institutional adjustments; enhancing climate change awareness, education and communication in the country; capacity building requirements; enhancing research and development as well as technology development and transfer in areas that respond to climate change, among many others.

It is prudent to ensure that the proposed project infrastructure design is climate-proof over its lifespan, and designing infrastructure that can withstand the prevailing climatic conditions, e.g., structures that can withstand strong wind, high temperatures and flooding. Measures that are geared towards offsetting carbon emissions should also be incorporated in the project design.

5.3.5 Sessional Paper No. 1 of 2017 on National Land Policy

The overall goal of the national land use policy is to provide a legal, administrative, institutional and technological framework for optimal utilization and productivity of land-related resources in a sustainable and desirable manner at national, county and community levels. The Policy is premised on the philosophy of economic productivity, social responsibility, environmental sustainability and cultural conservation.

It recognizes and addresses the effects of land mismanagement which are environmental, social, economic and political in nature. Some of these impacts include; deterioration in land quality, under-utilization of land, urban squalor, insecurity and conflict. Other fundamental issues such as compulsory acquisition and development, and security of tenure for all have also been taken into consideration

Among the key principles envisioned by the policy include;

- Land use planning, resource allocation and resource management for sustainable development to promote public good and general welfare;

- Environmental management and sustainable production in the utilization of land resources;
- Coordination and integration of institutional linkages in planning at sectoral and cross-sectoral levels to foster collaboration and decision-making among different land users;
- Equitable utilization of land resources to meet governance, social-economic and cultural obligations of the people of Kenya;

The proposed project will need to be consistent with the provisions of this Policy to ensure environmental sustainability.

5.3.6 Sessional Paper No. 02 of 2019 on National Policy on Gender and Development

The Policy spells out a policy approach of gender mainstreaming and empowerment of women and clearly states that it is the right of women, men, girls and boys to participate in and benefit equally from the development process. The NPGD provides a framework for mainstreaming gender in all policies, planning and programming in Kenya and puts in place institutional mechanisms to ensure effective implementation.

The proposed project should hence ensure gender concerns are mainstreamed into the development to ensure that the needs and interests of each gender are addressed.

5.3.7 The National Occupational Health and Safety Policy Of 2012

This policy is intended to protect the safety and health of workers in workplaces. The proposed development project will provide employment opportunities to many workers in various categories.

The contractor will be expected to comply with the requirements of this policy when engaging workers in various construction activities. The preliminary environmental management plan provides mitigation measures that can be undertaken to ensure compliance with the requirements of this policy.

5.3.8 Sessional Paper No. 1 of 2021 on National Water Policy

The goal of the policy is to guide the achievement of sustainable management, development, and use of water resources in the country. The overall objective of the policy is to provide a framework that is dynamic, innovative, and effective for re-engineering the water sector. It aims at accelerating the delivery of water supply services through progressive realization of the human right to water towards universal access and to strengthen sustainable water resource management in the country.

The proponent will be expected to use water efficiently and be mindful of the needs of the current and future generations, and in cognizance of maintaining the environmental reserve to ensure inter-generational and intra-generational existence. Additionally, the proponent should also adhere to the precautionary principle provided under this policy to ensure that there is no pollution to the nearby water resources.

5.3.9 Nairobi City County Development Control Policy, 2021

Zoning is the legal regulation of the use of land. It involves segregation of parcels of land or acres of towns in a physical development plan and ascribes to them broad classifications of appropriate use such as residential, commercial, educational, institutional, etc. The policy aims at protection of public health, welfare needs and safety, including the provision for the use of property and limitations upon the shape and bulk of the building that occupy the land. The zoning plan provided under the policy serves as a comprehensive guide for urban development in Nairobi and will be adopted and rendered effective as a legal ordinance for this project.

The proponent complied to the policy by processing and obtaining a change of use from Godowns/Houses to hotel and Offices from the Nairobi City County.

Roads, storm & foul drainage, water reticulation and street lighting which are adoptive to the Nairobi City standards have been factored in the project designs. This proposed project will be adjacent to access roads, hence imposing on it a building line of 6-9 meters from the access roads, and this has been factored in the designs provided. Further, the proponent is committed to the provision of adequate and functional on-site parking, to the satisfaction of Nairobi City County's Director of Roads, Public works and Transport.

5.3.10 Government of Kenya Fourth Medium Term Plan 2023-2027

The overall aim of the Kenya Vision 2030 is to transform the country into a newly industrializing middle-income country providing a high quality of life to all its citizens in a clean and secure environment. Kenya transitioned from a Low-Income Country status to a Lower Middle-Income Country upon attaining a Gross Domestic Product (GDP) per Capita of USD 1,430.35 in 2014.

The Core Pillars for the Fourth MTP include, Agriculture, Micro, Small and Medium Enterprise (MSME) economy, Housing and Settlement, Healthcare, Digital Superhighway and Creative Economy. The MTP IV 2023-2027 implements the Bottom-Up Economic Transformation Agenda (BETA), which is geared towards economic turnaround and inclusive growth through a value chain approach. BETA targets sectors with high impact to drive economic recovery. BETA's objectives are to; bring down the cost of living, eradicate hunger, create jobs, expand tax base, improve foreign exchange balances and inclusive growth.

Relevance

The proposed project supports the MTP's principles which includes expansion of revenue base as its implementation will create jobs and promote business & conference tourism, thus strengthening the economic pillar of the plan, which will contribute to the growth of the country's GDP rate. Additionally, jobs created will improve the livelihoods of those who shall be employed, thus it will promote the plan's agenda to bring down the National Poverty Level.

5.4 Legal Framework / Laws and Key Relevant Regulations

There are several legal provisions on environmental protection, which touch on and regulate the development of infrastructure like the proposed project. A brief review of the various legislation relevant to the development is given hereunder.

5.4.1 Environmental Management and Coordination Act (EMCA Cap 387) and its Amendment of 2015

EMCA Cap 387 applies to all policies, plans and programs as specified in part IV, part V and the Second Schedule of the Act. A number of legislations are in place to ensure the provision of a healthy and clean environment but EMCA Cap 387 takes precedence. It is the principal law that governs the use, management and regulation of environmental resources in Kenya. Under the second schedule, **amended vide legal notice number 31 of 2019**, the proposed project is categorized as a **High-Risk Project** under urban development projects i.e. **"establishment of hotels with a bed capacity exceeding one hundred and fifty"**. The proposed four-star airport hotel will entail 180 guest rooms. This Study Report has been prepared for submission pursuant to Regulation 7 (4) of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019. The assessment was conducted following a recommendation under sub-regulation 3 (a) stating, "Where Authority considers that the proposed project will have a high environmental impact, it shall recommend that the proponent should prepare and submit a study report."

This project is listed under High-Risk Project for which an Integrated Environmental and Social Impact Assessment study report is prepared. This report has been prepared in compliance with the provisions of the Act, and will be submitted to the National Environment

Management Authority (NEMA), so as to obtain an EIA License, prior to the implementation of the proposed project. The Proponent will be required to commit to implementing the environmental management plan laid out in this report and any other conditions laid out by NEMA.

Through EMCA, various regulations have also been gazetted which the proponent is expected to abide as discussed below;

5.4.1.1 Environmental Management and Coordination (Environmental Impact Assessment and Audit) Regulations, 2003 and (Amendment) Regulations, 2016 (L.N 149) & 2019 (L.N 32)

Environmental Impact Assessment under the EMCA Cap 387 Act is guided by the Environmental Impact Assessment (Assessment and Auditing) Regulations of the year 2003, which is given under legal notice no. 101 and (Amendment) Regulations, 2016 (L.N 149) & 2019 (L.N 32). Regulation 11(1) provides that Environmental Impacts Assessment be conducted by the proponent in accordance with the terms of reference developed during the scoping exercise and approved by the Authority. The regulations stipulate the ways in which environmental impact assessment and audits should be conducted and categorically assigning a lead expert, qualified in accordance with criteria for listing of experts as outlined under regulation 13(2), with the responsibility for undertaking them. *The project falls under the second schedule of EMCA, Cap 387 High Risk Project that requires an Environmental Impact Assessment Study be undertaken to provide baseline information upon which subsequent environmental control audit shall be based.* The EMCA, Cap 387 requires that during the EIA process, a proponent shall in consultation with the Authority seek views of persons who may be affected by the project or activity through posters, newspaper, radio and public meetings with the affected parties and communities.

This Report complies with the requirements of the Environmental Regulations in the coverage of environmental issues, project details, impacts, legislation, mitigation measures, management plans and procedures.

5.4.1.2 Environmental Management and Coordination (Water Quality) Regulations, 2006

Water Quality Regulations apply to water used for domestic, industrial, agricultural, and recreational purposes; water used for fisheries and wildlife purposes, and water used for any other purposes. Different standards apply to different modes of usage. These regulations provide for the protection of lakes, rivers, streams, springs, wells and other water sources. The effective enforcement of the water quality regulations will lead to a marked reduction of water-borne diseases and hence a reduction in the health budget.

The regulations also provide guidelines and standards for the discharge of poisons, toxins, noxious, radioactive waste or other pollutants into the aquatic environment in line with the Third Schedule of the regulations. The regulations have standards for discharge of effluent into the sewer and aquatic environment. While it is the responsibility of the sewerage service providers to regulate discharges into sewer lines based on the given specifications, NEMA regulates the discharge of all effluent into the aquatic environment.

Everyone including the proposed project proponent is required to refrain from any actions, which directly or indirectly cause water pollution, whether or not the water resource was polluted before the enactment of the Environmental Management and Coordination Act (EMCA) Gazetted in Cap 387.

Every person who generates and discharges effluent into the environment under a license issued under the Act shall carry out effluent discharge quality and quantity monitoring in accordance with methods and procedures of sampling and analysis prescribed by the Authority, and shall submit quarterly records of such monitoring to the Authority or its designated representative.

The proponent will obtain an effluent discharge license for the proposed waste treatment plant and undertake frequent effluent discharge quality and quantity monitoring through sampling.

5.4.1.3 Environmental Management and Coordination (Waste Management) Regulations, 2006

The Waste Management Regulations are established in accordance to section 174 of the EMCA, Cap 387. Waste management includes activities, both administrative and operational that are used in handling, packaging, treating, conditioning, reducing recycling, re-using, storage and disposal of waste.

These regulations stipulate how the different types of waste streams should be stored, transported, and disposed of. The type of waste streams described herein include solid waste, industrial waste, hazardous waste, pesticides and toxic substances, biomedical waste and radioactive substances. Cleaner production principles are championed under Regulation 6(1) which obligates owners of premises or facilities generating waste to minimize the amounts generated through adoption of best practices such as conservation of raw materials and energy, reduction in toxic emissions and waste, avoidance of using toxic raw materials and adoption of recycling and re-use strategies. The regulations also stipulate the conditions for licensing any person dealing with the transport or waste disposal.

The proponent and contractor will put all measures in place to ensure all waste generated is collected and handled appropriately by a NEMA licensed waste handler and disposed of at a designated waste disposal site and in accordance with the national and county waste management regulations.

5.4.1.4 Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009

Regulations 3 (1) prohibits any person from making or causing any loud, unreasonable, unnecessary or unusual noise that annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. On the other hand, Regulation 4(1) outlaws excessive vibrations and imposes a limit on the maximum permissible vibration levels as 0.5 centimeters per second of a source property boundary or 30 meters from any moving source. It also stipulates the factors to be considered when determining the amount of noise produced from various sources. The regulations further provide the permissible noise levels within different neighborhoods at different times. For a typical construction project, Regulation 14(1) gives powers to the Authority to impose requirements on how the work is to be carried out, machinery that may be used and permitted noise levels. In determining whether noise is loud, unreasonable, unnecessary or unusual, the following factors may be considered:

- Time of the day;
- Proximity to residential area;
- Whether the noise is recurrent, intermittent or constant;
- The level and intensity of the noise;
- Whether the noise has been enhanced in level or range by any type of electronic or mechanical means; and,
- Whether the noise is subject to be controlled without unreasonable effort or expense to the person making the noise.

Machinery and equipment used during the construction phase will be the main source of noise pollution.

Table 5-1 Maximum Permissible Noise levels for Construction sites

Maximum Permissible levels for Construction sites (Measurements taken within the facility)

Facility	Day	Night
Health facilities, educational Institutions, Homes for the disabled and residential areas	60 dB	35 dB
Other areas	75 dB	65 dB
Day: 6.01am to 6.00pm	Night: 6.01pm to 6.00am	

During the construction phase, machinery and equipment used will be the main sources of noise pollution. The proponent and contractor are required to implement the mitigation measures provided in the ESMP of this IESIA report to ensure noise reduction. In addition, the proponent and contractor shall be required to adhere to the provisions of maximum permissible noise levels for construction sites.

5.4.1.5 Environmental Management and Coordination (Air Quality) Regulations, 2014

These regulations provide for the prevention, control and abatement of air pollution to ensure clean and healthy ambient air. It applies to all internal combustion engines, all premises, places, processes, operations, or works to which the provisions of the Act and Regulations made thereunder apply, and any other appliance or activity that the Cabinet Secretary may by order in the Gazette, specify. Specifically, air pollution within the occupational areas is highlighted in under Regulation 17 which requires owners of controlled facilities to ensure that occupational air pollutants workers are exposed to are monitored and recorded accordingly. Release of particulate matter during construction activities not in excess of the permissible limits is addressed under Regulation 33 of these regulations. They stipulate the measures to prevent air pollution from both stationary and mobile phases. They also provide for the permissible occupational exposure limits.

The emissions generated from construction activities have the potential of polluting the immediate atmospheric environment. Demolition works, Vegetation clearing, earthworks and bulk delivery of construction material, if poorly managed may result in generation of dust.

The proponent should comply with the mitigation measures proposed in this IESIA study report and endeavour to conduct ambient air quality monitoring as guided by these regulations during the construction, operational and decommissioning phases of the Project. Air quality monitoring will be guided by standards stipulated thereof.

5.4.1.6 Environmental Management and Coordination of Controlled Substances Regulations, 2007 (Legal Notice No.73 of 2007)

The Controlled Substances Regulations define controlled substances and guides on how to handle them. This regulation mandates NEMA to monitor the activities of persons handling controlled substances, in consultation with relevant line ministries and departments, to ensure compliance with the set requirements. The regulations stipulate that controlled substances must be clearly labeled. E.g., “Controlled Substance-Not ozone friendly” to indicate that the substance or product is harmful to the ozone layer. Advertisement of such substances must carry the words, “Warning: Contains chemical materials or substances that deplete or have the potential to deplete the ozone layer.” Producers and/or importers of controlled substances are required to include a Material Safety Data Sheet (MSDS).

Persons are prohibited from storing, distributing, transporting or otherwise handling a controlled substance unless the controlled substance is accompanied by a material safety data sheet. Manufacturers, exporters or importers of controlled substances must be licensed by NEMA. Further, any person wishing to dispose of a controlled substance must be authorized by NEMA. The licensee should ensure that the controlled substance is disposed of in an

environmentally sound manner. These regulations also apply to any person transporting such controlled substances through Kenya. Such a person is required to obtain a Prior Informed Consent (PIC) permit from NEMA.

The proponent and contractor should ensure adherence to the provisions of this regulation during the project's life cycle. The proposed project will use coolants and refrigerants during the operation phase, therefore it is imperative that the proponent ensures that the appropriate ones are adopted.

5.4.2 Sustainable Waste Management Act, 2022

The objectives of the Act are but not limited to: Promotion of sustainable waste management; promotion of effective delivery of waste services; improvement of the health of all Kenyans by ensuring a clean and healthy environment; reduction of air, land, fresh water and marine pollution; and the creation of an enabling environment for employment in the green economy in waste management, recycling and recovery.

The proponent shall comply to this Act throughout its three major phases by carrying out frequent monitoring and auditing of the waste management infrastructure; enhancing waste mapping, segregation, collection and transportation; contracting a NEMA registered waste handler to handle all waste generated from the site and it's surrounding; and implementing measures set out in the ESMP and EMP of this report.

5.4.3 Kenya Airports Authority Act (Cap. 395)

The Act established the Kenya Airports Authority in 1992. It provides for the powers and functions of the Authority. It mandates KAA to among other things manage civilian airports and airstrips efficiently and profitably; provide, develop and maintain such services and facilities that are necessary or desirable for the efficient operation of the aircraft; provide rescue and firefighting equipment and services at the airports and approve the establishment of private airstrips and control the operations thereof.

To support the functions of the Authority, other Government agencies are also involved, including;

- a) The Kenya Airport Police Unit to provide security for Airport installations, handle incidents of hijacking, carry out detection and disposal of bombs, participate in the prevention and detection of crime, carry out investigation of accidents, take control of all points of entry into restricted and controlled areas, and maintenance of law and order.
- b) Specialized security units including bomb detection and disposal experts.

Section 15 vests powers to the Authority to enter land to prevent accidents. In particular, Part (3) states that where any person erects any building which in any way interferes with the operation of any service provided by the Authority under this Act, the Authority may, unless such person has previously obtained the approval of the managing director to the erection of such building, or has modified it to the satisfaction of the managing director, apply to the High Court for an order for the demolition or modification of such building, or, as the case may require, for the payment to the Authority of the cost incurred in the resetting or replacement necessary to prevent such obstruction or danger and the court at its discretion may grant such order as it may deem fit as to the payment of compensation and costs. The proponent shall ensure all necessary approvals from the Kenya Airports Authority are obtained before commencement of construction works.

5.4.4 The Civil Aviation Act No. 21 of 2013

The Civil Aviation Act 2013 (amended in 2016) provides for the control, regulation and orderly development of civil aviation in Kenya and for matters incidental thereto or connected therewith.

The Act establishes the Kenya Civil Aviation Authority KCCA under Section 4 (1) whose role is to plan, develop, manage, regulate and operate a safe, economical, and efficient civil aviation system in Kenya in accordance with the provisions of the Act. Other responsibilities of the Authority as stated under section 7(1) include; licensing of air service; provision of air navigation services; advising the government on civil aviation matters; dealing with incidents of unlawful interference with aviation security and undertaking investigations on general incidents not classified as accidents or serious incidents. The Act empowers the Cabinet Secretary in charge of Transport, under Part V section 56 (1) of the Act to prohibit the erection of buildings or structures above a certain height in declared areas; where he considers it to be necessary in the interests of the safety of air navigation, by order published in the Kenya Gazette.

Part V section 57 gives the Director-General of KCAA powers to Control structures, etc., on or near aerodromes if the Director-General considers that provisions for the safety or efficiency of air navigation ought to be made by lighting or otherwise for giving aircraft warning of the presence of any building, structure, tree or natural growth or formation on or in the vicinity of an aerodrome; or by the removal or reduction in height of any such obstruction. Section 58 of Part V further prohibits persons from trespassing on any land forming part of a government aerodrome or an aerodrome licensed under the regulations established under the Act.

The proponent owns the proposed project area (A copy of the land ownership document is attached). Freight Lane Hotel Limited requires necessary approvals (Height Approval) from the Kenya Civil Aviation Authority to erect a hotel within Jomo Kenyatta International Airport. The Approval is being processed.

5.4.5 Occupational Safety and Health Act (OSHA, 2007)

The Occupational Safety and Health Act applies to all workplaces where any person is at work, whether temporarily or permanently. The purpose of the Act is to secure the safety, health and welfare of persons at work and protect persons other than persons at work against risks to safety and health arising out of the activities. Section 6(1) obligates the occupier or employer to ensure that the safety, health and welfare of all the people at work within the work premises are secured and maintained. Workers also have their part to play by taking all the necessary precautions to ensure their own safety and health and that of other people in their workplace or within the environs of their workplaces. The Act protects workers by requiring the use of appropriate safe systems of work, preventive and control measures and full utilization of Personal Protective Equipment and clothing.

Section 19 of the Act provides that an occupier of any premises likely to emit poisonous, harmful, injurious or offensive substances, into the atmosphere shall use the best practicable means to prevent such emissions into the atmosphere and render harmless and inoffensive the substances which may be emitted. Ergonomics aspects of the workplace environment are covered under section 76(1) while section 81 (1) highlights the relevant housekeeping rules of the workplace setup. The employer or occupier is expected to develop a suitable area for the safe collection, recycling and disposal of chemical wastes, obsolete chemicals and empty containers of chemicals to eliminate risks to the safety and health of employees and the environment.

Part VII of the Occupational Safety and Health Act (OSHA), 2007, elaborately deals with machinery safety requirements, mainly from the point of view of avoiding accidents and injuries at work.

There will be a need to ensure that all employees and people around the area are protected against any risks that could arise from the operations, hence the provisions of this Act will be fully incorporated and adhered to. All plants shall be subjected to periodical examination as provided by law.

5.4.5.1 Factories and Other Places of Work (Medical Examination) Rules, 2005 (L.N No. 24)

These Rules provide for the conducting of medical examination on various occupations including work involving exposure to noise. There should be Pre-employment and annual repeat examinations within two weeks where abnormal examination results are noted. Examinations are to involve clinical examinations, biological monitoring and other necessary tests depending on the type of exposure.

The proponent is required to ensure that all employees undergo pre-employment and periodic medical testing within the course of the project activities to survey on their health.

5.4.5.2 Factories and Other Places of Work (Noise Prevention and Control) Rules, 2005 (L.N No. 25)

According to section 5 of the rules, where noise in a workplace exceeds the continuous equivalent of 85 A-weighted decibels (dB (A)) the occupier must develop and implement an effective noise control and hearing conservation programme which must be in writing and should address: Noise measurement; Education & training; Engineering noise control; Hearing protection; Posting of notices in noisy areas; and Annual programme review

Where the noise level will be above 90 dB (A), the proponent will be required to:

- a) Post a sign at the entrance to and in every room or conspicuous place, clearly and prominently marked “DANGER HEARING PROTECTION MUST BE WORN”.
- b) Supply hearing protection to all persons required to enter such an area.
- c) Ensure that all workers and any other person entering this area wear hearing protection devices.

The proponent should implement the measures set out in the ESMP of this report to mitigate against any negative impacts associated with noise during the project's life cycle.

5.4.5.3 Factories and Other Places of Work (Safety and Health Committees) Rules, 2004 (L.N No. 31)

These Rules make several provisions in support of formation of Safety and Health Committees at all workplaces which regularly employ twenty or more employees. These committees are tasked with the responsibility of overseeing Occupation Safety and Health (OSH) implementation and performing safety audits.

The proposed project will employ more than 20 workers during all phases, therefore the proponent should endeavour to comply with the requirements of this regulation by: establishing a safety and health committee in a manner provided by the rules; and ensuring the committee meets at least four times in every year (interval of three (3) months).

5.4.5.4 Factories and Other Places of Work (Fire Risk Reduction) Rules, 2007 (L.N No. 59)

These regulations were made in exercise of the powers conferred on the Minister of labour by section 41 (2) (k) of the Factories and Other Places of Work Act. The rules provide for secure storage of vessels containing dangerous liquids and measures for prevention of fire.

The proponent is required to:

- a) *Provide firefighting and fire detection appliances at the development and ensure they are regularly inspected. These have been provided for in the designs and respective costs captured in the bill of quantities.*
- b) *Conduct Fire audits.*
- c) *Ensure that staff are trained on fire-fighting*

5.4.5.5 Factories (First-Aid) Rules, 1977 (L.N No. 160)

These rules stipulate that there shall be provision of well-maintained and readily available and accessible first aid boxes or cupboards.

Section 7 of the rules provide that no person shall be placed in charge of a first aid box or cupboard unless he or she has received adequate training in the application of first-aid to the injured persons and holds a certificate of competence issued by: The St. John Ambulance of the St. John Council of Kenya; or The Kenya Red Cross Society; or such other body or society as may be approved from time to time, by the Labor Commissioner.

The proponent will adhere to the provisions of section 2 (c) and 5 of these rules. Additionally, the proponent will ensure that fully stocked and sufficient first aid boxes/cupboards are provided and clearly marked on the outside with the words “FIRST AID” and contact information of the First Aider on-duty.

5.4.5.6 Factories (Building Operations and Works of Engineering Construction) Rules, 1984

Section 48(1) prohibits any timber or material with projecting nails to be placed or be allowed to remain in any place at a site where they are a source of danger to persons employed. Section 55 (C) provides that properly maintained scaffolds or; where appropriate, ladders or other means of support which shall be sufficient and suitable for the purpose shall be provided, placed and kept in position for use where work cannot be safely done on or from the ground or from part of a building or other permanent structure.

The proponent and contractor will ensure that the relevant provisions of these rules and the general provisions under OSHA, 2007 are adhered to throughout the construction and operation phases of the project.

5.4.6 Employment Act, 2007 and it's Amendment in 2022

The Act is enacted to consolidate the law relating to trade unions and trade disputes, to provide for the registration, regulation, management and democratization of trade unions and employer organizations and federations. The purpose of the Act is to promote sound labor relations through freedom of association, the encouragement of effective collective bargaining and the promotion of orderly and expeditious dispute for the protection and promotion of settlements conducive to social justice and economic development for connected purposes. This Act is important since it provides for an employer-employee relationship that is important for the execution of the project.

The basic conditions of employees should be observed to avoid unnecessary conflicts during the construction works. The Contractor shall pay the entire amount of the wages earned by or payable to the workers. Payment of such wages should be done at the end of a working day at or near the place of work.

5.4.7 The Energy Act of 2019

The Energy Act 2019 was approved on 12th March 2019 and commenced on 28th March 2019. The Act establishes an Energy and Petroleum Regulatory Authority mandated to regulate the generation, importation, exportation, transmission, distribution, supply and use of electrical energy except for licensing of nuclear facilities; ensure, in collaboration with the Kenya Bureau of Standards, that only energy efficient and cost-effective appliances and equipment are imported into the country; certify energy managers and license energy auditors among other duties. The Act gives provisions for the need to protect the health and safety of users of energy by providing an enabling environment of operation that protects the health and safety of users of the service for which the license or permit is required and other members of the public affected by the undertaking. Section 107(1) of the Act also provides that for energy producing facilities, a Strategic Environment Assessment and Social Impact Assessment will be undertaken among other requirements, before commencement of construction activities.

The provisions of this Act have and will be enforced by the management in consultation with the Environmental experts, planners, mechanical and electrical consultants in ensuring that best practices are adopted for sustainable energy use while attaining public health and safety.

5.4.8 Land Act, 2012 and Land Laws (Amendment) Act, 2016

This is an Act of Parliament that revises, consolidates and rationalizes the registration of titles to land, to give effect to the principles and objects of devolved government in land registration, and for connected purposes. The act requires proper marking and maintenance of boundaries. With regard to the maintenance of boundaries, the Act requires every proprietor of land to maintain in good order the fences, hedges, stones, pillars, beacons, walls and other features that demarcate the boundaries, pursuant to the requirements of any written law.

The land on which the proposed project will be undertaken is owned by the proponent and the proof of ownership has been provided as an Annex to this report. The proponent has adhered to the provisions of this act by ensuring the project land boundaries are marked and development will only be undertaken within the boundaries owned by the proponent.

5.4.9 Penal Code Act (Cap.63)

This Act stipulates the various activities and conduct that are considered to be unlawful or criminal in nature, and the penalties as provided for by the Act. According to section 191, any person who voluntarily corrupts or fouls the water of any public spring or reservoir, so as to render it less fit for the purpose for which it is ordinarily used, is guilty of a misdemeanor. Section 192 also stipulates that any person who voluntarily vitiates the atmosphere in any place, so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighborhood or passing along a public way, is guilty of a misdemeanor.

The contractor and proponent should ensure strict adherence to the measures provided in the ESMP throughout the project cycle in order to mitigate any possible negative impact associated with air pollution, noise, solid waste generation and effluent discharge.

5.4.10 Physical and Land Use Planning Act, 2019;

This Physical and Land Use Planning Act, 2019 makes provision for the planning, use, regulation and development of land and connected purposes. Article 5 of the Act under Principles and norms of physical and land use planning, notes that every person engaged in physical and land use planning development activities shall be in a manner that integrates economic, social and environmental needs of present and future generations. Article 4 notes that major developments should be subjected to environmental and social impact assessment.

The proponent and contractors of the proposed development should ensure compliance with the provisions of the act and land use planning. Public participation has been conducted to ensure the involvement of stakeholders in the planning process.

5.4.11 Water Act, 2016

The Act provides the legal framework for the management, protection, usage and regulation of water resources as well as procurement and control of rights towards usage of water. Regulations provided for in this act are in line with the Constitution of Kenya. It also makes provision for the control and management of the supply of water and the provision of sewerage services. It also addresses issues to do with ownership, management and usage of water resources and protection with regard to water catchment areas.

Section 25 (1) of this Act states that a permit shall be required for any of the following purposes:

- any use of water from a water resource, except as provided by Section 26;
- the drainage of any swamp or other land;
- the discharge of a pollutant into any water resource.

Any purpose, to be carried out in or in relation to a water resource, which is prescribed by rules made under this Act to be a purpose for which a permit is required. Part II, Section 18, of this Act provides for national monitoring and information system on water resources. Following this, Sub-section 3 of the same Section, allows the Water Resources Authority (WRA) to demand from any person or institution, specified information, documents, samples or materials on water resources. Under these rules, specific records may be required to be kept by a facility operator and the information thereof furnished to the Authority.

The proponent will adhere to the requirements of the act.

5.4.12 The Environment and Land Court Act, 2011

This Act is in place to give effect to Article 162(2) (b) of the Constitution; to establish a superior court to hear and determine disputes relating to the environment and the use and occupation of, and title to, land, and to make provision for its jurisdiction functions and powers, and connected purposes.

This Act shall be of great essence to the proponent, public, interested or affected party that may want to litigate against the development on settlement issues, location of the project or even effects of the project to the public.

5.4.13 Work Injury Compensation Benefit Act (WIBA), 2007

This is an Act of Parliament to provide compensation to employees for work-related injuries and diseases contracted in the course of their employment and for connected purposes. The Act applies to all employees, including employees employed by the Government, other than the armed forces, in the same way and to the same extent as if the Government were a private employer. It is the duty of all employers to obtain and maintain an insurance policy from an approved insurer in respect of any liability the employer may incur as provided for by the Act. The Act also stipulates that an employee who suffers an accident that leads to disablement or death is subject to the provisions of this Act and is entitled to compensation.

It will be important for the Contractor of the proposed project to ensure that all workers contracted during the project implementation phase are provided with appropriate insurance covers so that they can be compensated in case they get injured while working.

5.4.14 Public Roads and Roads of Access Act Cap 399, Rev. 2012

The Public Roads and Roads of Access Act Cap.399 Act states that a public road is any road which the public has a right to use immediately before the commencement of this Act, or all proclaimed or reserved roads and thoroughfares being or existing on any land sold or leased or otherwise held under the East Africa Land Regulations, 1897, the Crown Lands Ordinance, 1902, or the Government Lands Act at any time before the commencement of this Act and all roads and thoroughfares hereafter reserved for public use.

The proponent will observe the requirements of this act while carrying out their operations.

5.4.15 Public Health Act (Cap. 242)

This is an Act of Parliament that makes provision for securing and maintaining the health of individuals and the public in general. Section 115 of the Act states that no person shall cause nuisance or cause to exist on any land or premises any condition liable to be injurious or dangerous to human health. Section 116 requires that Local Governments take all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and sanitary to prevent the occurrence of nuisance or condition liable to be injurious or dangerous to human health. Section 130 further empowers the Cabinet Secretary to delegate functions to County Governments to enforce rule in respect of define areas to prohibit or regulate erection of dwellings, sanitary convenience, tanks or other works to entail risk of harmful pollution or pollution threatening to sources of water being used by the public.

Such nuisance or conditions are defined under section 118 as waste pipes, sewers, drainers or refuse pits in such state, situated or constructed as in the opinion of the medical officer of

health to be offensive or injurious to health. Any noxious matter or wastewater flowing or discharged from any premises into the public street or into the gutter or side channel or watercourse, irrigation channel, or bed not approved for discharge is also deemed as a nuisance. Other nuisances are an accumulation of materials or refuse which in the opinion of the medical officer of health is likely to harbor rats or other vermin.

Part XII, Section 136, states that all collections of water, sewage, rubbish, refuse and other fluids which permit or facilitate the breeding or multiplication of pests shall be deemed nuisances under this Act. This part seeks to guard against the breeding of mosquitoes which is key as they cause malaria which is one of the major causes of death in the country.

The proponent will observe all the provisions of this Act.

5.4.16 Urban Areas and Cities Act No. 13 of 2019

This is an Act of Parliament to give effect to Article 184 of the Constitution, to provide for the classification, governance and management of urban areas and cities and to provide for the criteria of establishing urban areas. According to section 5 of the Act, an urban area only qualifies for the status of a city if it possesses infrastructural facilities such as good roads, street lights, markets, fire stations, regional infrastructural connectivity and adequate capacity for disaster management. The Act also provides for the principle of governance and participation of residents of towns and cities. Under the Act a town is an urban area with a population of at least ten thousand residents. Also, under the Act the management of a city and municipality is vested in the county governments. The County Governments may impose such fees, levies and charges for the delivery of services by the municipality or the city county. The Act under section 44, provides for collaboration between the County Governments and all relevant stakeholders in provision of infrastructural services including environmental conservation, construction of roads, health facilities and promotion of tourism among others.

The proponent shall comply with the act.

5.4.17 The Climate Change (Amendment) Act, 2023

On September 1st, 2023, against the backdrop of Kenya hosting the Africa Climate Summit and Africa Climate Week, the Climate Change (Amendment) Act, 2023, (“the Act”) was assented to by the President. The Act came into force on 15th September 2023, and builds upon the foundations laid by the Climate Change Act, 2016, in pushing Kenya a step forward towards realizing its obligations under the Paris Agreement. The Act has brought with it a wide array of changes, particularly in relation to effecting Article 6 of the Paris Agreement by introducing provisions on the regulation of and participation in carbon markets.

In an effort to boost accountability and transparency, the Act provides for the establishment of a carbon registry that would be accessible to the public with registers on information relating to carbon credit projects and the amount of carbon credits issued or transferred from Kenya. The carbon registry will boost climate financing activities in the country by reassuring investors in carbon markets. A Designated National Authority as established by the Act will be the custodian of the Registry.

Whilst the importance of climate financing cannot be overemphasized, it is equally important to safeguard the environment from further degradation. In this regard, the Act requires that before commencing a carbon trading project, an environmental impact assessment must be carried out in compliance with international obligations. The Act also entrenches the need for carbon projects to specify the anticipated environmental, economic or social benefits which includes the extent to which the project will contribute to the removal of greenhouse gases from the atmosphere in order to contribute to meeting Kenya’s greenhouse gas emissions targets.

The proposed project should therefore ensure that infrastructure design is climate-proof over its lifespan and undertaken as per provisions of the act specifically on planning and implementation stages.

5.4.18 Building Code, 2009

This by-law recognizes the county governments as the leading planning agencies. It compels potential developers to submit development applications for approval. The county governments are hence empowered to approve or disapprove any plans if they do or don't comply with the law, respectively. Any developer who intends to erect a building must give the respective local authority a notice of inspection before the erection of the structure. On completion of the structure, a notice of completion shall be issued by the local authority to facilitate final inspection and approval. No person shall occupy a building whose certificate of completion has not been issued by the county government.

Section 194 requires that where a sewer exists, the occupants of the nearby premises shall apply to the local authority for a permit to connect to the sewer and all the wastewater must be discharged to the sewers. Section 196 provides that the county government may refuse to admit to sewer any trade waste or any other effluent unless it has been treated in an approved manner. In this regard, the county government may cause the occupier of the premise to construct an approved manhole connected to the pipe conveying such effluent. Finally, this Act requires supply of water for buildings and provisions be made for water shortages.

In the development of the project, the proponent will have to comply with the provisions of this Act by complying to the building code provisions.

5.4.19 The Traffic Act Cap 403

The Traffic Act, of 2012 gives provisions and guidelines that govern the Kenya roads transport sector. These guidelines are essential to private, public and commercial service vehicles in ensuring safety and sanity on the roads hence ensuring the environment is safeguarded. In section 41, the Act demands for installation and certification of speed governors for the commercial vehicles ferrying goods adjusted to the loading condition of such vehicles to a limit of 80 KPH. Moreover, the owner of commercial vehicles or trailers shall ensure clear markings on their vehicles in English language on the right side of the vehicle showing ownership details, as well as tare weight of the vehicle and maximum authorized weight. Section 26 and 27 of the same discourages engines that emit exhaust gases into the atmosphere without passing via a silencer or expansion chamber. In ensuring safety of all the persons in transit, section 56 encourages that every public and commercial vehicle be fitted with inspected and first-class first aid box and fire extinguisher. In ensuring compliance to this Act, the contractor and developer shall ensure that all site drivers and all material suppliers to the site satisfy the provisions as stipulated in the Act.

In ensuring compliance to this Act, the contractor and developer shall ensure that all site drivers and all material suppliers to the site satisfy the provisions as stipulated in the Act.

5.4.20 The Standards Act Cap 496

The Act is meant to promote the standardization of the specification of commodities, and to provide for the standardization of commodities and codes of practice; to establish a Kenya Bureau of Standards, to define its functions and provide for its management and control. Code of practice is interpreted in the Act as a set of rules relating to the methods to be applied or the procedure to be adopted in connection with the construction, installation, testing, sampling, operation or use of any article, apparatus, instrument, device or process. KEBS is mandated, according to section 10(7) (a) and (b) of the Act, to issue standardization marks to commodities.

The proponent, contractor and project engineer will enforce the overall safety of the development, by ensuring strict vetting of material to ensure that only construction materials that meet the acceptable quality of standards and which are labeled with a standardization mark are used for construction. Thorough scrutiny of these materials and frequent monitoring will also be assisted by the construction supervisory staff on site such as the Resident Engineers.

5.4.21 Food, Drugs and Chemical Substances Act, CAP 254

This Act was enacted by parliament to make provision for the prevention of adulteration of food, drugs and chemical substances. According to the Act, food includes any article manufactured, sold or represented for use as food or drink for human consumption including chewing gum or any other ingredient. Food is offered in all hotels and restaurants therefore provisions of this Act are very relevant.

The Act prohibits the sale of any food which is adulterated, unwholesome or unfit for human consumption or which is poisonous. This includes food that consists of in whole or in part of any filthy, putrid, disgusting, rotten, decomposed or deceased substance. It is unlawful to label, package, treat, process, sell or advertise any food in contravention of the regulations set out in this Act or in a manner that is false, misleading or deceptive as regards to its character, nature, value, substance, quality, composition, merit or safety. In the case where a standard has been prescribed for a certain food, it is unlawful for a person to label, package, sell or advertise that food in a manner that is likely to be mistaken for the food of the prescribed standard whereas it does not comply with the standard. Preparing, conveying, storing or displaying any food under insanitary condition is also an offense under section 23 of the Act.

The proponent will observe all the provisions of this Act.

5.4.22 The Hotels and Restaurants Act, Cap 494

This act was enacted to provide for the licensing of hotels, hotel managers and restaurants. It has provisions for the regulation of hotels and restaurants as well as provisions for imposing levies on persons to be employed in hotels and restaurants.

All hotel and restaurant establishments are managed by this Act. The Act established the Hotels and Restaurants Authority (herein with referred to as the authority) under section 3(1), the body whose powers include issuing licenses, investigating and determining complaints and lastly suspending and cancellation of licenses. The authority is comprised of a chairman appointed by the minister for tourism, the permanent secretary of the ministry of tourism, a member who is knowledgeable in the hotel industry and international tourism and a member who represents the interests of hotel keepers, restaurant keepers and employees.

The proponent is expected to adhere to the requirements of this act.

5.4.23 Alcoholic Drinks Control Act, 2010.

The Alcoholic Drinks Control Act is an act of Parliament to regulate the production, sale, and consumption of alcoholic drinks, to repeal the Chang'aa Prohibition Act, the Liquor Licensing Act and for connected purposes. The Act seeks to:

- Protect the health of individuals by providing a legal framework to control the sale, production & consumption of alcoholic drinks.
- Protect consumers of alcohol products from misleading inducements to use alcohol.
- Protect young people (those below 18 years) by restricting their access to alcoholic products.
- To educate the public on the dangers of alcohol use (economic, social & health).
- To protect the government by dealing with illicit trade.
- To promote and provide for treatment & rehab programmes for the addicted.
- To promote research and dissemination of information, especially of health risks

The proponent is therefore expected to comply with the provisions of this act in regard to the sale of alcohol.

5.4.24 Tourism Act Cap 381

Section 111 provides that a person shall not discharge any dangerous materials, substances or oil into a designated tourism development area or discharge pollutant detrimental to the environment contrary to the provisions of this Act or any other law.

The proposed project will be implemented with strict observance of the Tourism Act and the proponent should endeavor to implement the proposed mitigation measures provided in the ESMP of this report.

5.4.24.1 Tourism Regulatory Authority Regulations, 2014 (L.N. No. 126)

Section 4 of these regulations gives powers to the Tourism Regulatory Authority (TRA) to classify tourism activities and services listed in Classes "A" and "B" enterprises of the Ninth Schedule of the Tourism Act Cap 381 into classes in accordance with the criteria for standardization as set out in the first schedule of these regulations. Further, sub-section 2 of the same provides that a person who owns or operates a tourism activity or service listed in Classes "A" and "B" enterprises of the Ninth Schedule of the Tourism Act Cap 381, shall apply to be registered by the Authority in a prescribed manner.

Therefore, the proponent should endeavor to comply with these regulations by ensuring the hotel facilities and operations meet the minimum requirements provided in the First Schedule of these regulations and commit the establishment for standardization by the National Standardization and Classification Committee at commissioning stage of the project and after every five years, upon payment of the prescribed fees.

5.4.25 National Gender and Equality Act, 2011

National Gender Equality Commission is a constitutional Commission established by an Act of Parliament in August 2011, as a successor commission to the Kenya National Human Rights and Equality Commission pursuant to Article 59 of the Constitution. NGEC derives its mandate from Articles 27, 43, and Chapter Fifteen of the Constitution; and section 8 of NGEC Act (Cap. 15) of 2011, with the objectives of promoting gender equality and freedom from discrimination.

Gender mainstreaming in developments ensures that the concerns of women and men form an integral dimension of the design, implementation, operation and monitoring and evaluation ensures that women and men benefit equally and that inequality is not perpetuated.

Gender considerations should be made in every stage of the development by the proponent.

5.4.26 Persons with Disabilities Act, 2003

The Act guarantees that: No person shall deny a person with a disability access to opportunities for suitable employment; a qualified employee with a disability shall be subject to the same terms and conditions of employment and the same compensation, privileges, benefits, fringe benefits, incentives or allowances as qualified able-bodied employees; and an employee with a disability shall be entitled to exemption from tax on all income accruing from his employment.

The proponent will ensure compliance with the provisions of this Act by ensuring there is no discrimination on physical disability while recruiting for jobs and consider employment opportunities for PWDs in the existing hotel. The Project design has ensured provision of accessible facilities (i.e Washrooms, guest rooms and provision of a lift).

5.4.27 County Governments Act, 2012 and its Amendment Act of 2020

The Act emphasizes on the need for a consultative and participatory approach where the principles of planning and development facilitation in a county serve as a basis for engagement between the county government, citizens and other stakeholders. In addition to principles of planning, the Act provides that a planning framework integrates economic, physical, social, environmental and spatial planning as per section of 104(1) of the Act. Section 115(1b) of the Act provides that public participation in the county planning processes should be mandatory and be facilitated through provision to the public of clear and unambiguous information on any matter under consideration in the planning process, including; comprehensive environmental impact assessment reports; expected development outcomes; and development options and their cost implications.

The proponent has already complied by engaging Nairobi City County in obtaining the change of use permit for the proposed project site. Further, the proponent should continuously engage Nairobi County in its planning to ensure necessary licenses and permits are acquired.

5.4.28 Nairobi City County Public Nuisance Act, 2021

The objective of this Act is to provide for the control of public nuisance and empower the county to take all lawful, necessary and reasonably practicable measures for: The maintenance of the county, at all times in a clean and sanitary condition; abatement and prevention of public nuisances; remedying or causing to be remedied any nuisance or condition liable to be injurious or dangerous to health or which has been declared to be a public nuisance under the Act.

Section 16 provides that any person who sells food that has in or upon it any poisonous or harmful substances; is unwholesome or unfit for human consumption; consists in part or in whole of any filthy, putrid, disgusting, rotten, decomposed or diseased substance of foreign matter; or food that is adulterated, shall be guilty of an offence.

Section 20(2) stipulates that a person who in connection with building operations, demolitions or road construction or reconstruction works causes or allows noise to be made which is so loud and continuous as to constitute a nuisance to the occupants of any premises in the neighbourhood, commits an offence.

Section 21(1) of the Act states that any person who discharges any dangerous materials, substance, oil or oil mixtures into land, water, air or aquatic environment; or discharges any pollutant into the environment contrary to the provisions of this Act, commits an offence.

The proponent will ensure compliance to the act in the proposed project by implementing its provisions and those provided in the ESMP of this report.

5.4.29 Nairobi City County Public Participation Act, 2015

The purpose this Act is to: give effect to the provisions of Chapter Eleven of the Constitution; provide a framework for participation by the public in the affairs of the County; provide for a framework for informed, effective, efficient and sustainable engagement of the public in the County; provide for a framework for public participation in service delivery; generally give effect to the principles of public participation as set out in Articles 1(2) and 10, Chapter 4, Articles 35, 61, 69, 118, 119, 196, 174, 184, 201 and 232, and the Fourth Schedule of the Constitution; give effect to the objects and principles of devolution set out under Article 174 (e) and (d) of the Constitution; and give effect to Part VIII of the County Governments Act, 2012.

Section 9(1) of the Act provides that any notice to the public should be done by: publication in at least two daily newspapers with national circulation where appropriate; and by means of radio broadcasts covering the area of the county.

The proponent has undertaken and will continue to undertake stakeholder engagements as provided by the provisions of this Act and other relevant legislation. Additionally, upon submission of this report to NEMA, the proponent will seek additional views from the public by publicizing the project and its anticipated effects and benefits.

5.4.30 The National Construction Authority Act, 2011

The purpose of the Act is to provide for the establishment, powers and functions of the National Construction Authority and connected purposes (Section 1).

The National Construction Authority oversees the construction industry and coordinates its development (section 5(1)) and is given power for necessary performance (section 6(1)). It also sets out application requirements and procedures for the registration of persons and firms as construction contractors (Section 17) and punitive measures for contravening by individuals (Section 15(3)). Additionally, the Act gives the Board power to inquire into the conduct of a

contractor on its initiatives (Section 22) and sets out suspension conditions for contractors (Section 23).

Furthermore, the Act stipulates the establishment of an Appeals Board and its function to make rules for or concerning the filing, hearing and disposal of appeals etc. (Sections 27 and 28) Finally, Sections 30 and 31 provides for the constituent of the Authority's funds and concerns regarding imposition of levy, which contributes importantly to the income of the Authority.

The proponent will adhere to the requirements of this act and obtain all necessary approvals during the construction period.

5.5 National Institutional Framework

At present there are over twenty (20) institutions and departments which deal with environmental issues in Kenya. Some of the key institutions include the National Environmental Council (NEC), National Environmental Management Authority (NEMA), and Water Resources Authority (WRA) among others. There are also local and international NGOs involved in environmental issues in the country. From the above institutions, NEMA plays the regulatory and oversight role in the management of environment in Kenya.

5.5.1 Ministry of Water, Sanitation and Irrigation.

In 2013, the government, in line with the Constitution, rationalized the portfolio, responsibilities and functions of all the ministries and other government agencies. Consequently, the Ministries of Environment and Mineral Resources, Forestry and Wildlife, Water and Irrigation and Regional Development were merged to form the Ministry of Environment, Water and Natural Resources (MEWNR). In April 2015 MEWNR was again split to form the current Ministry of water and irrigation, giving recognition to the crucial role played by the irrigation sub-sector in national development. This was further split towards the realization of water security to promote sustainable development in line with the Big Four agenda leading to formation of Ministry of Water and Sanitation.

The State department for water and sanitation performs the following functions:

- Water Resources Management Policy and Standards
- Water Catchment Area Conservation, Control and Protection;
- Water and Sewerage Services Management Policy;
- Waste Water Treatment and Disposal Policy;
- Water Quality and Pollution Control;
- Sanitation Management.

5.5.1.1 Water Resources Authority (WRA)

It is a state corporation established under Section 11 of the Water Act, 2016. Pursuant to Section 6 of the Act, the Authority is an Agent of the National Government responsible for regulating the management and use of water resources. The Water Act, 2016 makes extensive provisions on the Authority's role in regulating the use and management of water resources. Some of the issues that WRA is responsible for include: Water allocation, source protection and conservation, water quality management and pollution control and international waters. Its roles and responsibilities include but not limited to: Planning, management, protection and conservation of water resources; Regulation of conservation and abstraction structures; and Catchment's and water quality management.

WRA will provide the necessary water extraction permits for the borehole to be drilled on site to supplement water supply from NCWSC.

5.5.1.2 Nairobi City Water and Sewerage Company (NCWSC)

The Company is mandated to provide clean water and sewerage services to the residents of Nairobi City County, in a financially sustainable manner and within Government regulations.

As the mandated water and sewerage service provider in Nairobi City County, NCWSC has continued to enhance service provision by aligning itself to the Constitution of Kenya 2010; National Water Master Plan 2030, identifying key multi-sector initiatives and projects to ensure sustainable availability and management of water and sanitation for all; Kenyan economic blueprint, Vision 2030's under MTP IV; Nairobi Integrated Urban Development Master plan (NIUPLAN); the County's Strategic Plan (2015-2025); Nairobi County Integrated Development Plan for (2023-2027); and the Sustainable Development Goals (SDGs) under agenda six.

NCWSC shall ensure the provision of water and sewerage services to the proposed development and make sure that the disposal of wastewater from the proposed project meet statutory requirements to protect against any form of environmental pollution.

5.5.2 Ministry of Environment Climate Change and Forestry

The Ministry was established and mandated to undertake protection, conservation and development of the environment and natural resources to ensure sustainable development. Semi-Autonomous Government Agencies under the Ministry of Environment and Natural Resources include:

- i. Kenya Water Towers Agency (KWTa)
- ii. Kenya Forest Service (KFS)
- iii. Kenya Forestry Research Institute (KEFRI)
- iv. Kenya Wildlife Service (KWS)

5.5.3 Institutions under EMCA Cap 387

There are other institutional arrangements provided for within the EMCA Cap 387 and relevant to the development. The roles are reviewed and discussed in detail below:

5.5.3.1 National Environmental Management Authority (NEMA)

NEMA was established to exercise general supervision and coordination over all matters relating to the environment and to be the principal instrument of the government in the implementation of all policies relating to the environment. The Director General appointed by the president heads NEMA. Any project that falls under the second schedule of EMCA, Cap 387 shall seek an Integrated Environmental Impact Assessment License from NEMA.

On World Earth Day 2024 (22nd April 2024), whose official theme was "Planet vs Plastic", the National Environment Management Authority (NEMA) announced a ban on the use of plastic garbage bags and bin liners. Kenyan citizens were given 90 days (about 3 months) to start using biodegradable alternatives. All organic waste generated by households, private sector and public sector institutions, religious institutions, private and public events shall strictly be segregated and placed in 100% biodegradable garbage bags/bin liners only.

This directive came into effect on 9th July 2024 and the project proponents are expected to adhere to it.

The Authority will review this IESIA report for the proposed project, visit the project site to verify information provided in the report and issue a license if it considers that all the issues relevant to proposed project have been identified and mitigation measures to manage them have been proposed

5.5.3.2 National Environmental Tribunal

The National Environment Tribunal (NET) created under Section 125 of EMCA Cap 387 has the following functions:

- To hear and determine appeals from NEMA's decisions and other actions relating to issuance, revocation or denial of (EIA) licenses or the amount of money to be paid under the Act and imposition of restoration orders;
- To give direction to NEMA on any matter of complex nature referred to it by the Director General; and

If the proponent disagrees with NEMA's decisions in exercising the above-mentioned functions, then they may lodge a case at the NET to seek to overturn the decision. Should this avenue not lead to a favorable ruling from the NET, an appeal may be lodged in the Environment and Land Court.

The tribunal will come in handy if the project's implementation parties are aggrieved by NEMA's decision or license conditions.

5.5.3.3 National Environment Complaints Committee (NECC)

It Investigates any allegations or complaints against any person or against the authority in relation to the condition of the environment in Kenya and on its own motion, any suspected case of environmental degradation and to make a report of its findings together with its recommendations thereon to the Cabinet Secretary.

This committee will act as a safeguard for members of the public who feel aggrieved by actions taken under the proposed project and can exercise their constitutional rights to launch a complaint should they have exhausted all other grievance redress mechanisms available to them.

5.5.3.4 National Environment Trust Fund (NETFUND)

The trust fund is vested in NEMA and is subject to EMCA Cap 387. A board of five trustees appointed by the Cabinet Secretary administers it. These funds may be received from donations, endowments, grants and gifts from whatever source or sums of money or from monies designated by NEMA for this fund.

The tribunal will come in handy if the project's implementation parties are aggrieved by NEMA's decision or license conditions.

5.5.3.5 County and Sub County Environment Committees

The County and Sub-County Environmental Committees contribute to decentralization of activities undertaken by NEMA. This has enabled local communities to have greater access to environmental management information. It has also enabled the County and Sub-County Environment Committees to conduct quick site visits and review of reports of proposed projects.

Since the proposed project is a high-risk project as per the second schedule (L.N. No. 31 of 2019) of EMCA Cap 387, the review of the report will be done at NEMA headquarters for issuance of an IESIA license. However, the report will be reviewed in Nairobi County to create awareness and obtain ownership at the county level.

5.5.4 Ministry of Labour and Social Protection

The mandate of the ministry is "formulation, review and implementation of employment, national human resource planning and development, national Labour productivity, Facilitating and Tracking Employment creation, Coordination of National employment, Internship and Volunteers for public service, community Development, Protection and advocacy of needs of Persons with Disabilities, and Workplace Inspection and Workman's Compensation.

a) The Labour Department

The Labour Department is the Ministry's focal point agency responsible for implementation of the three major Labour Laws; namely: The Employment Act, 2007 and its Amendment of 2023; The Labour Institutions Act, 2007; and The Labour Relations Act, 2007.

b) Directorate of Occupational Safety and Health Services (DOSHS)

DOSHS is the designated national authority responsible for the collection and maintenance of databases with records of the analysis and investigations of occupational diseases and accidents, and dangerous occurrences. Some of the services include but are not limited to; registration of workplaces, registration of plants, registration of all approved persons and institutions, workplace inspections and audits, examination and testing of plants, accident investigation and WIBA processing.

DOSHS was a key stakeholder engaged during the planning process as they are responsible for the safety, health and welfare of all workers in all workplaces and in registration of all workplaces which are envisioned in the proposed project. The proponent should register the site as a workplace with DOSHS before implementation of the project.

5.5.5 Ministry of Tourism and Wildlife

The ministry's mission is to facilitate good governance for sustainable development, management and marketing of tourism and wildlife. Its mandate is as derived from Executive Order No. 1 of June 2018 on Organization of the Government of the Republic of Kenya as follows: Tourism policy and standards, protection of wildlife heritage, management of national parks, reserves and marine parks, wildlife conservation, training and research, tourism marketing and promotion; marketing of Kenya to local and international tourists, wildlife biodiversity management and protection among others.

5.5.5.1 Tourism Regulatory Authority (TRA)

The Authority derives its powers to regulate the tourism sector from the Tourism Act, 2011. The objective and purpose of the Authority is to regulate the tourism sector. The functions of The Regulatory Authority as provided by the Act are:

- To formulate guidelines and prescribe measures for sustainable tourism throughout the country.
- To regulate tourism activities and services countrywide, in accordance with the national tourism strategy.
- To register, license and grade all sustainable tourism and tourist-related activities and services including cottages and private residences engaged in guest house services.
- To develop and implement, in consultation with relevant stakeholders, criteria for standardization and classification of tourism facilities and services.
- To develop and regulate, in consultation with the Ministry for the time being responsible for matters relating to education, tourism and hospitality curriculum, examination and certification.
- To develop and implement a code of practice for the tourism sector.
- To ensure the development and implementation of high-quality tourism sector.
- To monitor and assess tourist activities and services to enhance continuous improvement and adherence to sound principles and practices of sustainable tourism.
- To undertake annual assessment and audit of tourism activities and services, measures and initiatives at national level, and prepare and publish an annual national tourism sector status report, in consultation with the minister and relevant lead agencies, and
- Perform any other functions that are ancillary to the object and purpose for which the Authority is established.

The proponent should apply for all necessary licenses required for the establishment from TRA and endeavor to comply to the conditions of approval that the Authority may issue. Further, TRA as a key stakeholder was engaged during the planning process and should continue to be engaged in all other phases of the project.

5.5.6 Hotel and Restaurants Authority (HRA)

It was established to regulate and standardize hotels and restaurants. New hotel, resort and lodge projects are required to be licensed first before commencing construction. This is aimed

at ensuring quality and compliance with relevant laws and regulations and promoting excellence in the hospitality sector. The authority will also embark on a nationwide exercise of grading and classification, using the East African Community regulatory regime for all five member States.

The tourism industry is regulated by two Acts of Parliament: The Hotels and Restaurant Act (Cap 494) and the Tourist Industry Licensing Act (Cap 381). The former was enacted in 1972 to provide for licensing of hotels, hotel managers and restaurants with a view to regulate hotels and restaurants, for the imposition of a levy for training people to be employed in hotels and restaurants. Licensing and regulation under the Act is administered through the Authority, a board constituted by the Minister for Tourism.

Three types of licenses are issued under Cap 494: Annual renewals, classification certificates and entry permits. In considering applications for hotel licenses, the board requires operators to present a title deed or lease agreement for the premises, copies of work permit where applicable, health clearance certificate, tariff (bed and room charges, and menu) and an appropriate license fee according to category, size, bed capacity and extent of services provided.

For restaurant licenses, the following are required: A certificate of incorporation or PIN number, health certificates, copy of tariffs, lease agreement, copies of the manager's professional qualifications, work permit for foreigners, license fee and filled forms, HRA 1 and FM 2, Hotel and Restaurants Authority (HRA).

5.5.7 National Construction Authority (NCA)

The National Construction Authority (NCA), constituted under Act No. 41 of 2011 laws of Kenya, is mandated to register contractors and to prepare a register of contractors and construction workers licensed to work in Kenya. National Construction Authority is the body mandated to register all contractors and companies carrying the following categories of work: building works; road works; waterworks; mechanical works in buildings; and electrical works.

The Authority is mandated to regulate the construction industry in Kenya as per the National Construction Act law of Kenya. It also approves the construction of buildings and related projects; construction works and general contractors in Kenya. For construction to be approved by NCA, they must be approved by other regulating bodies in Kenya such as NEMA and the County Government.

The proponent and contractor will ensure all necessary approvals required by the Authority are obtained.

5.5.8 Nairobi City County Government

Nairobi City County Government is charged with the responsibility of providing a variety of services to residents within its area of jurisdiction. These include the services that were hitherto provided by the defunct City Council and the ones that have been transferred from the National Government. The former includes: physical planning, public health, social services and housing, primary education infrastructure, inspectorate services, public works, environment management while the latter includes agriculture, livestock development and fisheries, trade, industrialization, corporate development, tourism and wildlife and public service management.

The proponent is required to work collaboratively with the institution by ensuring adherence to all Nairobi City County legislation/by-laws and continue engaging the County Government through its departments, in coordination of various project activities such as environmental conservation.

5.5.9 International Civil Aviation Organization (ICAO)

The International Civil Aviation Organization's (ICAO) involvement in aviation environmental protection emphasizes the value of a common, coordinated and global approach to addressing the impact of air transport operations on noise and local air quality around airports, and the much broader challenge of climate change. The environmental programme of ICAO has grown larger in scope since the coming into force of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. This framework created a mechanism for ICAO to interact and cooperate with other UN bodies on greenhouse gas emissions issues, while continuing to deal with an expanding list of noise and local air quality issues. ICAO has established environmental protection standards and recommended practices (SARPS), policies and guidance for international application.

The key focuses of ICAO guidelines in its Annex 16A & B that require a coordinated approach include aircraft noise and engine emissions. It also pays attention to integrated measures to abate adverse environmental impacts including technological improvements, operating procedures, organization of air traffic, appropriate airport and land use planning, as well as application of available market-based options. Environmental protection is one of the Strategic Objectives of ICAO.

ICAO has three environmental goals for international aviation, which aim to:

- a) Limit or reduce the number of people affected by significant aircraft noise;
- b) Limit or reduce the impact of aviation emissions on local air quality; and
- c) Limit or reduce the impact of aviation greenhouse gas emissions on the global climate.

"In support of these goals and in its role as international aviation's leading environmental body, ICAO has established environmental documents, including reports, guidance material, and/or specific studies that help to ensure that the most up-to-date information on aviation environmental issues is fully available to State authorities and the broader aviation community for future planning and related decisions and actions.

5.6 Multilateral Environmental Agreements / Treaties

Kenya has signed a number of international conventions and treaties on environment and natural resources also known as multi-lateral environmental agreements (MEAs) that obligate the country to promote sustainable environmental and natural resources management and social equity. Conventions are legally binding bilateral, regional or international agreements binding to the states that are parties thereto. Kenya has ratified some of the most important conventions on the environment as discussed below which apply to the proposed project hence the contractor is bound to comply by the respective provisions.

Table 5-2 Multilateral Environmental Agreements

Multilateral Environmental Agreements	Key areas of application
United Nations Framework Convention on Climate Change (UNFCCC)	<ul style="list-style-type: none"> ▪ UNFCCC has near universal membership and is the parent treaty of the 1997 Kyoto Protocol. The Kyoto Protocol has been ratified by 192 of the UNFCCC Parties. ▪ The ultimate objective of both treaties is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system. <p><i>The proposed project should ensure all activities and development plans are undertaken in line with the provisions of the Convention aimed at stabilizing greenhouse gas concentrations in the atmosphere.</i></p>
Vienna Convention for the Protection of the Ozone Layer	<ul style="list-style-type: none"> ▪ The Vienna Convention for the Protection of the Ozone Layer was adopted in 1985 and entered into force on 22 Sep 1988. In 2009, the

	<p>Vienna Convention became the first Convention of any kind to achieve universal ratification.</p> <ul style="list-style-type: none"> ▪ The objectives of the Convention were for Parties to promote cooperation by means of systematic observations, research and information exchange on the effects of human activities on the ozone layer and to adopt legislative or administrative measures against activities likely to have adverse effects on the ozone layer.
Rio Declaration on Environment and Development	<ul style="list-style-type: none"> ▪ The Rio Declaration on Environment and Development, often shortened to Rio Declaration, was a short document produced at the 1992 United Nations "Conference on Environment and Development" (UNCED), informally known as the Earth Summit. ▪ The declaration aimed at establishing a new and equitable global partnership through the creation of new levels of co-operation among States, key sectors of societies and people, working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system, recognizing the integral and interdependent nature of the Earth, our home. ▪ The Rio Declaration consisted of 27 principles intended to guide countries in future sustainable development. It was signed by over 170 countries. ▪ Principle 17 of the Rio Declaration provides key relevance to the proposed project. <p><i>The principle denotes that environmental impact assessment as a national instrument shall be undertaken for proposed activities that are likely to have a significant impact on the environment and are subject to a decision of a competent national authority.</i></p>
Earth Summit on Sustainable Development Agenda 21	<ul style="list-style-type: none"> ▪ Agenda 21 is a non-binding, voluntarily implemented action plan of the United Nations regarding sustainable development. It is a product of the Earth Summit (UN Conference on Environment and Development) held in Rio de Janeiro, Brazil, in 1992. ▪ It is also regarded as an action agenda for the UN, other multilateral organizations, and individual governments around the world that can be executed at local, national, and global levels. The "21" in Agenda 21 refers to the 21st Century. Agenda 21 Section I on Social and Economic Dimensions is directed toward combating poverty, especially in developing countries, changing consumption patterns, promoting health, achieving a more sustainable population, and sustainable settlement in decision making. ▪ Section II on Conservation and Management of Resources for Development Includes atmospheric protection, combating deforestation, protecting fragile environments, conservation of biological diversity (biodiversity), control of pollution and the management of biotechnology, and radioactive wastes. <p>Kenya continues to implement Agenda 21 to support sustainable development through the integration of environmental concerns into the national development policies, plans, and programmes. Also relevant is the implementation of Agenda 17. The proposed project would need to be consistent with the objectives of Agenda 21.</p>
The World Commission on Environment and Development (The Brundtland Commission of 1987)	<ul style="list-style-type: none"> ▪ The Commission in its 1987 report dubbed "Our Common Future" focused on the environmental aspects of development, in particular the emphasis on sustainable development that produces no lasting damage to the biosphere and to particular ecosystems. ▪ In addition to environmental sustainability is economic and social sustainability. Economic sustainable development is development for which progress towards environmental and social sustainability occurs within available financial resources.

	<ul style="list-style-type: none"> ▪ Social sustainable development is development that maintains the cohesion of a society and its ability to help its members work together to achieve common goals, while at the same time meeting individual needs for health and well-being, adequate nutrition, and shelter, cultural expression and political involvement. The key aspect of sustainability is the interdependence of generations. <p><i>The concept of EIA is embodied in many multilateral environmental agreements. Principle 17 of the Rio Declaration provides that environmental impact assessment as a national instrument shall be undertaken for proposed activities that are likely to have a significant impact on the environment and are subject to a decision of a competent national authority.</i></p>
The Paris Agreement	<ul style="list-style-type: none"> ▪ The agreement was adopted on 12th December 2015 at the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris, it then came into force on 4th November 2016 after meeting the ratification threshold. ▪ The Agreement provides the framework to address climate change for a safer and sustainable future. It has an objective of preventing a global temperature increase above 1.5 degrees Celsius relative to pre-industrial levels by reduction of Greenhouse gas emissions. ▪ Kenya ratified the Paris Agreement and welcomed it into force on 28th December 2016. As at now, a total of 171 parties out of 197 have ratified the agreement. <p><i>The proposed project should ensure all activities are in-line with the tenets of the Paris Agreement to minimize greenhouse gas emissions.</i></p>
Sustainable Development Goals (SDGs)	<ul style="list-style-type: none"> ▪ The 17 Sustainable Development Goals (SDGs), are an urgent call for action by all countries - developed and developing - in a global partnership. ▪ They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. <p><i>This project is expected to cut-across the three dimensions of sustainable development - economic, social and environmental—in a balanced and integrated manner, hence making SDGs a key reference point.</i></p>
Convention on the Elimination of all forms of Discrimination against Women (CEDAW),1979	<p>This convention requires countries to eliminate discrimination against women and girls in all areas and promotes women's and girls' equal rights. State parties shall take all appropriate measures to ensure women have equal terms with men without any discrimination; the opportunity to represent their countries at the international level; the opportunity to participate in the work of international organizations.</p> <p><i>The proposed project will ensure the tenets of human rights and protection of women and girls from sexual exploitation and abuse are embroiled in the development and are adhered to during all phases of the project.</i></p>
International Labour Organization (ILO)	<p>The International Labour Organization (ILO) is built on the constitutional principle that universal and lasting peace can be established only if it is based upon social justice. The ILO has generated such hallmarks of industrial society as the eight-hour working day, maternity protection, child-labour laws, and a range of policies which promote workplace safety and peaceful industrial relations.</p> <p>The ILO has four principal strategic objectives:</p> <ul style="list-style-type: none"> • To promote and realize standards, and fundamental principles and rights at work. • To create greater opportunities for women and men to secure decent employment. • To enhance the coverage and effectiveness of social protection for all.

- To strengthen tri-parties and social dialogue.

6 CONSULTATION AND PUBLIC PARTICIPATION

6.1 Introduction

The Consultation and Public Participation (CPP) and Disclosure Process is a policy requirement by the Government of Kenya, which is enshrined in the Constitution of Kenya and is a mandatory procedure as stipulated by the Environmental (Impact Assessment and Audit) Regulations, 2003 (Part III, section 17), and EMCA (Cap 387) section 59 on ESIA for the purpose of achieving the fundamental principles of sustainable development.

It is an important process through which key stakeholders are given an opportunity to contribute to the overall project design by making recommendations and raising concerns on proposed projects before they are implemented. In addition, the process creates a sense of responsibility, commitment, and ownership for smooth implementation. Public consultation and disclosure requirements have been emphasized in the ESIA study through the developed project plan such as Environmental and Social Management Plan (ESMP), which has been prepared in accordance with Kenyan national laws and guidelines.

This chapter describes the process of public participation and consultation that was adopted in order to identify the key issues of the proposed hotel development. Views and concerns from the business enterprises surrounding the project area, government agencies, and institutions, who in one way or another would be affected or have an interest in the proposed project, were sought through public participation interviews, key informant consultations, and Key Stakeholders' meetings.

6.2 Objectives for the Consultation and Public Participation

Consultation and Public Participation is an important process through which stakeholders are given an opportunity to contribute to the overall project design by making recommendations and raising concerns on the project before it is implemented. In addition, the process creates a sense of responsibility and commitment for smooth implementation.

The key objectives of the consultation and public participation for the proposed hotel project were to:

1. **Inform:** Promote stakeholder understanding of issues about the proposed project with special reference to its key components and description, problems, alternatives, opportunities and solutions through balanced and objective information sharing;
2. **Consult:** To obtain feedback and acknowledge concerns and aspirations of stakeholders and interested parties on analysis, alternatives, and decisions regarding the proposed project;
3. **Engage:** Work directly with stakeholders to ensure that their concerns and aspirations are understood and considered in the ESIA study report and to assure them that their concerns/aspirations would be directly reflected in the developed alternatives; and that feedback will be provided on how their input influenced the final decision.
4. **Empower:** Make stakeholders partners in each aspect of the decision, including the development of alternatives and identification of preferred solutions to ensure ownership of sub projects at the grassroots level.

In addition, the process enabled the establishment of a communication channel among the stakeholders, the team of consultants, the project proponent and the Government. The consultation and public participation also offered a platform for the concerns of the stakeholders to be known to the decision-making bodies at an early phase of project development.

6.3 Methodology in Consultation and Public Participation

In order to ensure effective stakeholders' consultation and public participation, stakeholders' mapping was conducted, and a database was created consisting of likely interested, affected business enterprises and relevant institutions. Assessment tools were prepared for effective and systematic interviews by the environmental and social consultants assisted by a team of technical field assistants. The tools included; key informant interview schedules, mapping, sampling of the areas to be assessed, field visits and observations; and triangulation of field data which focused specifically on the key stakeholders located within JKIA.

Various methods and instruments were identified and used for effective and efficient public consultation and participation. They include;

- a) Administration of Public Consultation Questionnaires
- b) Key Informant interviews
- c) Key Stakeholders' meeting

6.3.1 Administration of Public Consultation Questionnaires

The exercise of public consultation was conducted in the month of **July and August 2024** by the consultants through the use of questionnaires. These questionnaires were designed to gather the concerns, comments, and issues of stakeholders and neighbouring businesses. The purpose of administering questionnaires was to identify the positive and negative impacts and subsequently gather proposals on the best practices to be adopted and mitigate the negative impacts respectively.

This process also helped in identifying miscellaneous issues, which may bring conflicts in case the proposed hotel project implementation proceeds as planned. The information gathered enabled the identification of the specific issues from the respondents, which provided the basis upon which the aspects of the Environmental and Social Impact Assessment were undertaken. Among the stakeholders who were consulted through administration of ESIA questionnaires included the neighbouring business enterprises, relevant associations, government agencies and institutions. A total of **Twenty-Six (26)** ESIA questionnaires were administered during the consultative public participation exercise (*See Annex 9– ESIA Public Consultation Questionnaires*).

6.3.2 Key Informant Interviews

Some key respondents were sampled in the project area to give more resourceful information on the environmental and social impact assessment for the proposed hotel project. The key informant interviews were held with Kenya Civil Aviation Authority (KCAA).

6.3.3 Key Stakeholders' Meeting

The key stakeholders' meeting enabled all stakeholders to express their views and perceptions about the proposed four-star hotel. In the meeting, various opinions, information and recommendations from key stakeholders were captured for the ESIA study as well as to ensure full representation of the key stakeholders' views in the project. Invitation letters were delivered to respective business enterprises within JKIA, as well as to organizations and relevant Government agencies and institutions seven (7) days prior to the key stakeholders' meeting (*See a sample invitation letter in Annex 5*).

The key stakeholders' meeting was convened on **7th August 2024** at **Crowne Plaza Airport Hotel** in Nairobi County with a total of **30 attendees** (*Refer to Annex 6*). The meeting was held to:

- Add more input to the ESIA analysis findings;
- Fill information gaps identified during the ESIA study;
- Better understand the proposed project area context; and
- Assist in prioritizing challenges that need to be addressed as well as communication channels;

Key stakeholders' meeting attendance sheets are attached in the appendices (Annex 6)

Table 6-1 Key Stakeholders' Meeting held during the ESIA study

S/N	Meeting Venue	Date & Time	Targeted group	Attendance		
				Male	Female	Total
1.	Crowne Plaza Airport Hotel	7th August 2024 8:30AM – 11:00AM	Key stakeholders - Government Agencies and Institutions, Associations and Business Enterprises within JKIA	21	9	30

Source – AWEMAC Field Survey



Plate 6-1: Key Stakeholders' meeting held at Crowne Plaza Hotel in Nairobi County

The table below categorizes and highlights various stakeholders engaged during the ESIA study exercise.

Table 6-2 List of stakeholders engaged during the ESIA study

Stakeholder Categories	Stakeholders
Project Proponent	Freight Lane Hotel Limited
Project Manager	Ajax Consulting
Project Architects	Grasp Design Limited
	Mechanical, Electrical and Plumbing (MEP) Engineer
Consultant	AWEMAC
County Government	Green Nairobi (Environment, Water, Food and Agriculture) Sub sector. <ul style="list-style-type: none"> Environment & Ag. CCO Food, Agriculture and Natural Resources
	Built Environment and Urban planning Sub sector <ul style="list-style-type: none"> Lands
National Government	National Environment Management Authority (NEMA), Nairobi County
	Kenya Airports Authority.
	Kenya Civil Aviation Authority
	Directorate of Occupational Safety and Health Services
	OCS, Kenya Airport Police Unit
	Ministry of Health, Port Health Officer
	Kenya Pipeline Company
Business Enterprises neighboring the project site	<ol style="list-style-type: none"> Four Points by Sheraton Airport Hotel Shalimar Fresh Kuehne + Nagel Limited Crown Plaza Airport Hotel Fox Logistics Freight In Time Nippon Express Freight Wings Ltd AIRFLO Limited Vegpro Limited Airport Trade Centre Kenroid Godowns Atlanta Cargo Global Freight Logistics Trade Winds Aviation Services

6.4 Key Issues from the Stakeholder consultation Meeting

The table below summaries key issues raised in the Stakeholder Consultation meeting.

Table 6-3 Key Issues raised during the Stakeholders meeting

SN	ISSUE	DESCRIPTION OF ISSUE	REMARKS
1.	Traffic Impact	<p>VegPro Limited representative sought to know the route the contractor would use while ferrying construction materials to the project site. She further wanted to know how this will impact traffic in the Airport area.</p> <p>Kuhne and Nagel representative also raised a similar concern on traffic and sought to know how the proponent would ensure that there is no conflict with the neighboring cargo operating companies due to traffic in the area.</p>	<p>The project architect noted that they would consider using the least private route which is freight road and link up with freight terminal road or as Kenya Airport Authority advises.</p> <p>The Project Architect noted that no major conflict is anticipated from the proposed development. He further noted that a Traffic Management Plan which will consider timing of the movement of construction vehicles in and out of the site in consultation with the neighbors would be developed. The delivery of construction materials will be timed to ensure that it this does not clash with the neighboring cargo operating company's delivery timelines.</p> <p>The project proponent noted that the access road/entrance gate for the proposed development will be located along the freight road. This will have no impact to the neighbouring cargo operating companies during the operational phase.</p>
2.	Waste Management during construction phase	<p>Nairobi City County Representative from the Environment Department sought to know how the client intends to handle excavated soil. He noted that dumping of waste in non-designated areas including Nairobi rivers which are heavily polluted by raw sewage, effluent from industries, black soil, unplanned settlements and uncollected garbage is a common practice. He further advised the client to ensure the excavated material gets to the designated point especially for the black soil.</p> <p>NEMA County representative noted that illegal dumping of soil had become a menace. She advised for the contractor to consider dumping the excavated soils in abandoned quarries.</p>	<p>The Project Architect noted that the project is currently at the design stage. Once the contract has been awarded, one of the criteria for shortlisting the NEMA Licensed contractor would be verification and Approval of the disposal site for excavated soil or any other waste generated during the construction phase.</p> <p>The contractor will be advised to dispose of excavated soil in an appropriate manner such as abandoned quarries that require backfilling.</p> <p>The client shall also monitor the recycling of waste during the construction phase.</p>

			The ESIA Consultant advised the client to track/monitor the excavated material to the disposal point in order to protect the proponent's and business brand which will be tarnished as a result of poor waste disposal.
3.	Waste Management during operation phase	<p>Kuhne and Nagel representative sought to know the plans that had been put in place to manage electronic waste generated by the facility during the operational phase.</p> <p>Port Health Representative also raised a similar concern. She wanted to know whether the client had a provision for sorting of waste at source, recycling part of the waste, an ideal place for waste storage and where the waste will be disposed of.</p>	<p>The ESIA consultant noted that they would recommend for the client to separate all waste at source. There will also be a provision for spaces/bins for sorting of waste within the proposed development. The waste will be then collected by NEMA licensed waste handler for recycling/disposal. He further noted that the client will be advised to partner with a company licensed by NEMA to handle Electronic Waste as well as any other waste generated by the facility.</p> <p>The Project Architect noted that while contracting a NEMA Licensed waste contractor, consideration will be made to contractors that can handle electronic waste</p> <p>The client representative noted that the proposed development will be a Courtyard by Marriot brand. He further noted that in addition to compliance to the international/national requirements the development will further comply to Marriot standards</p>
4.	Effluent Discharge	NEMA representative was curious about management of effluent discharge that will be generated from the hotel operations.	<p>The project MEP representative responded by informing stakeholders that provisions had already been made to install a Grey Water Treatment Plant of a capacity of about 100 cubic metres to treat effluent. This treated effluent will then be used to irrigate the hotel's landscaped areas and for flushing toilets.</p> <p>The Project Architect further noted that the hotel will also be connected to the Nairobi City County Sewerage System.</p>

5.	Water Sources	<p>NEMA representative was curious about the source of water for the proposed development.</p> <p>She further sought to know if rain water harvesting will be practiced.</p>	<p>The Project Architect noted that the proponent intends to drill a borehole on site. This will be supplemented by water from the Grey Water Treatment Plant (GWTP) and supply from Nairobi Water and Sewerage Company.</p> <p>The estimated water demand per day is estimated to be 131 cubic metres. 84 cubic metres will be sourced from the Grey water treatment plant, after treatment. The remaining 47M³ will be sourced from Nairobi City Water and Sewerage Company (NCWSC) and a borehole to be drilled on site.</p> <p>The project MEP Team Representative noted that, since more than 50% of the expected daily water demand would be sourced from the GWTP, rain harvesting had not been considered at the stage but downpipes had been provided to allow rainwater harvesting for future considerations.</p>
6.	Occupational Safety and Health	<p>DOSHS Representative brought out and spoke at length about health and safety concerns. He informed the proponent that accidents and fatalities were a common occurrence on construction sites and that they should put in the following to safeguard the health and safety of workers:</p> <ol style="list-style-type: none"> 1) Comply with Occupational Health and Safety Act of 2007 and Factories and Machinery (Building Operations and Works Of Engineering Construction) (Safety) Regulations, 1986. 2) Register the site as a workplace with OSHA within 7 days of commencement. 3) Appoint a trained and qualified safety officer to enforce safety measures. 4) Establish a Safety and Health Committee; 5) Conduct regular training on first aid, firefighting and occupational health and safety; 	<p>The Project Architect assured the stakeholders that they were keen on safety and reiterated the DOSH representative's remarks on having 0 fatalities. The hotel will also adhere to local and international standards (similar to Marriot's) on safety.</p> <p>He further noted that they intend to work with a "safety conscious" contractor and to hire a NEBOSH/Occupational Health and Safety certified safety officer to enforce safety measures.</p> <p>The project MEP Representative noted that the appointed Health and safety officer will be required to conduct toolbox talks and guide the project workers on safety related issues on the site.</p> <p>The ESIA Consultant concluded by stating that the ESIA Consultancy team shall develop an Occupational Health and Safety Management Action Plan. The client</p>

		<p>6) Ensure that the project contractor is competent and keen when it comes to safety issues.</p> <p>7) Ensure that the contractor has a medical cover for their workers as stipulated in the Work Injury Benefits Act (WIBA), 2007.</p> <p>8) Conduct a pre-employment medical examination for the workers;</p> <p>9) Ensure all plants and equipment are examined before use and within the prescribed timelines;</p> <p>10) Provide workers with the appropriate PPE.</p> <p>11) Provide welfare facilities for the workers</p> <p>12) Provide scaffolding and fall arrestors for Work at Height (WAH) and enforce all necessary measures to prevent falls from height,;</p> <p>13) Conduct risk assessment to map all potential risks;</p> <p>14) Enforce Permit to Work (PTW) systems for risky jobs such as WAH, Excavation and Hot Works.</p> <p>He concluded by advising the proponent to ensure their project goal is having 0 fatalities on site.</p>	will be advised to ensure the contractor complies to the plan.
7.	Relevant policies, legal and legislative Frameworks.	Port Health representative noted that the presentation, was missing some relevant laws that would assist her in monitoring some key public health and safety issues. These included: Public Health Act Cap 242, Food Drugs and Chemical Substance Cap 254 among others.	The ESIA Consultant responded to the concern by noting that the presentation entailed a summary of key laws and policies. The detailed ESIA Report would further cover all relevant laws and policies.
8.	Climate Change	Climate Change implications from the project was a crucial concern raised by the stakeholders.	<p>The Project Architect addressed this by highlighting the sustainability measures put in place which include:</p> <ul style="list-style-type: none"> ☞ The Grey Water Treatment Plant which will provide 84m³ of water per day, which is more than half the expected daily demand of 131m³. ☞ Solar Power Utilization ☞ Proper Waste Management

			<p>⌘ Installation of energy efficient lighting systems</p> <p>The ESIA Consultant advised the client to consider applying for carbon credits as they intend to implement green projects within the proposed development.</p>
9.	Accessible Facilities	Kuhne and Nagel Representative wanted to know the measures that had been put in place to aid People living With Disabilities especially during emergencies where the use of lifts is restricted.	<p>The project architect noted that the design has incorporated accessible facilities for the visually impaired and physically disabled. These will include but not limited to: accessible washrooms and visual/auditory alert systems.</p> <p>With regards to response to any emergency, the design has catered for safe holding areas next to fire escape stairways for people on wheelchairs to take refuge as they await evacuation among other safety measures.</p>
10.	Drainage and flooding	Crowne Plaza Airport Hotel Representative raised a concern on the effect the project would have on surface runoff and drainage while referring to the recently witnessed flooding during the El-nino rains.	<p>The Project Architect noted that the site will not have any impact on surface run off compared to the existing condition as the ground coverage allows for sufficient percolation of ground water. The site is also not at risk of flooding as it is significantly higher than the areas that flooded and is not near any water bodies</p> <p>He further noted that no major issues will be anticipated from the proposed development since it has no basement level. The design of the hotel and courtyard to be specific allows for water to seep back into the aquifer. The proposed hotel will also have lots of green spaces to reduce surface runoff.</p>
11.	Bird Control	Nairobi County Government representative from the Environment department sought to know the measures that will be adopted by the client to protect birds nesting on a tree that is close to the project site.	<p>The Project Architect noted that birds within the airport area are a hazard due to bird strikes by aero planes. The proponent will have measures in place that discourage nesting of birds on site.</p> <p>He further listed the Bird Control strategies utilized in the design which include:</p>

			<ul style="list-style-type: none"> • Planting bird repellent plant and tree species such as daffodils, lavender, peppermint and thyme. • Utilizing moving water features such as fountains that are a deterrent to birds. • Slopes on niches and copings within building for birds not to nest on them. • Bird spikes on ledges to deter birds from perching on them. • Enclosed waste room for efficient management and bird control.
12.	Pest Control	<p>Port health representative raised a concern on possibility of the proposed development being infested by pests and rodents due to its proximity to bushes. She further requested the proponent to address how the development plans to deal with cockroaches, rats and mosquitoes which are a menace in the area.</p>	<p>The Project Architect noted that the following measures will be put in place to deter pests and rodents from the proposed facility:</p> <ul style="list-style-type: none"> • Waste generated by the facility will be sorted internally and organic waste will be stored at temperature control to discourage any pest and rodents from the site. • Waste storage room will be sealed and have provisions for temperature control to deter entry of rodents and pests • The waste storage room shall be sealed to avoid entry of rodents. • The NEMA licensed waste handling company will be advised to collect and dispose off waste out of site frequently. • Comply with health and safety standards for Marriot brand toward pest control. <p>The ESIA consultant noted that they shall recommend mitigation measures to prevent pests and rodents in the detailed study for consideration by the client.</p>

13.	Security	The issue of security during the different project phases was also raised by the stakeholders.	The Project Design Team responded by echoing the Security Strategy that is outlined below: <ul style="list-style-type: none">• Risk assessments• Screening of all persons entering the project at the main gate and main entrances of the building.• Security personnel & equipment - CCTV, boom barrier gates, metal detectors, baggage scanners.• Emergency preparedness training.
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Detailed Minutes of the key stakeholders' meeting are attached in the appendices (*Annex 7*).

6.5 Feedback from the administration of public participation Questionnaires

6.5.1 Positive impacts

The feedback gathered during the interviews highlighted several positive impacts of the proposed project:

6.5.1.1 *Increased demand for construction materials benefiting nearby businesses:*

Interviews revealed that the construction of the proposed 4-star hotel is anticipated to result in a significant rise in the demand for construction materials. This surge not only facilitates the progress of the hotel project but also provides a substantial economic boost to local businesses engaged in supplying these materials.

6.5.1.2 *Employment opportunities for locals:*

The hotel project will serve as a source of employment for local residents as it will address a crucial need within the community, contributing to job creation and economic stability.

6.5.1.3 *Increased revenue for local businesses:*

The anticipation of increased patronage due to the hotel's presence suggests a positive economic impact. Local businesses are expected to experience a surge in revenue as they cater to the needs of hotel guests, thereby fostering economic growth in the area.

6.5.1.4 *Increased customer base for businesses around the proposed project:*

There will be an expanded customer base for businesses surrounding the hotel project resulting in a positive spillover effect. The influx of guests to the hotel is expected to benefit nearby establishments, creating a more vibrant local economy.

6.5.1.5 *Modern building and equipment introduction:*

The project will not only ensure the hotel's competitiveness but also contribute to the overall modernization of the local infrastructure.

6.5.1.6 *Opportunities for women vendors:*

Recognition of opportunities for women vendors underscores a commitment to inclusivity. The project is perceived as providing equal economic opportunities, fostering diversity and social sustainability.

6.5.1.7 *Boost in food market supply to workers:*

The anticipation of an increased demand for food due to the project will have a positive impact on local restaurants and vendors. This boost in demand will potentially create new opportunities and enhance the viability of food-related businesses.

6.5.1.8 *Boost for nearby businesses and services:*

The positive impact the project will have on nearby businesses will be a catalyst for local economic growth. This could lead to a more thriving and interconnected business community.

6.5.1.9 *Increased tourist activities and foreign exchange:*

There will be increased tourist activities and foreign exchange making the project a significant contributor to the local tourism industry. This will lead to a more diversified and robust economy.

6.5.1.10 *Improvement in the visual aspect of the airport:*

The project will improve aesthetics around the airport contributing to enhancing the overall visual appeal of the area. This could have positive effects on the perception of the area as a whole.

6.5.1.11 Provision of food and accommodation services:

The hotel project is aligned with meeting the needs of travelers and will enhance the area's hospitality infrastructure and attractiveness to visitors.

6.5.1.12 More business traffic for hoteliers:

There will be business traffic for local hoteliers. This will have a positive economic impact on existing hotels. This will lead to a more vibrant and competitive hospitality industry in the area.

6.5.1.13 Reduced competition among hotels:

The new hotel will complement rather than compete with existing establishments. This can foster a collaborative and mutually beneficial environment within the hospitality sector.

6.5.1.14 Paving the way for new investors:

The project is likely to pave the way for new investors making it a catalyst for attracting additional investments, potentially diversifying the local economy.

6.5.1.15 Improved Air Quality

Green spaces and landscaping will incorporate green plants which sequester carbon, leading to an improvement in the air quality.

6.5.1.16 Enhanced local services

The presence of a hotel can lead to improved local services and amenities to cater to the office visitors/guests.

6.5.1.17 Improved security

Improved lighting will encourage movement at all hours, and enhance security in the area.

6.5.1.18 Site restoration

This should include cleaning up contamination, removing structures and rehabilitating the land for more sustainable uses.

6.5.2 Negative Impacts

The following additional negative impacts were highlighted during the interviews:

6.5.2.1 Accidents Caused by Transportation Trucks:

The fear of accidents involving transportation trucks relates to the increased traffic and movement of construction-related vehicles. Respondents were concerned about the potential risks to both pedestrians and drivers, emphasizing the need for safety measures.

6.5.2.2 Potential Insecurity due to Accommodation of Foreigners:

The accommodation of foreigners raises concerns about potential security issues within the community. Respondents expressed worry about the adequacy of security measures in handling the increased number of visitors.

6.5.2.3 Escalated Competition with Existing Hotels:

Local hoteliers expressed concerns about intensified competition and potential market share loss due to the introduction of a new 4-star hotel. This apprehension reflects the economic implications and challenges faced by existing businesses in the hospitality sector.

6.5.2.4 Decrease in Foot Traffic at the Food Court:

Concerns about a decrease in foot traffic at the food court stem from the anticipation that the 4-star hotel might draw customers away from local eateries. This apprehension highlights the potential economic impact on small businesses in the food industry.

6.5.2.5 Reduction in Income for Local Businesses:

The worry about a reduction in income for local businesses is linked to the potential decline in customer patronage as a result of the project. Service providers fear economic hardships and seek reassurances for the sustainability of their businesses.

6.5.2.6 Increased Waste generation, soil contamination and potential disturbance to local ecosystems.

The construction, operation and decommissioning of the proposed project will definitely generate different forms of waste that pose a pollution threat if not well managed. Local ecosystems are also at risk due to the activities that need to be carried out such as clearing the vegetation and excavation.

6.5.2.7 Traffic congestion along 3rd Freight Lane

An increase in traffic is expected during the operation phase because the hotel is meant to host different groups of people. Construction activities will also increase traffic movement.

6.5.2.8 Increased Resource consumption

The operational phase of the hotel will lead to higher immediate demands for resources such as water and electricity

6.5.2.9 Noise during construction

A lot of noise is expected especially during the construction phase. Operation of construction machinery, transport trucks and other construction activities will be the primary source of this noise.

6.5.2.10 Dust generation

A lot of dust is expected to be generated during excavation and construction activities. This is an eyesore and could cause respiratory illnesses to persons in the vicinity.

6.5.2.11 Change in employees' livelihoods

After decommissioning, the services provided by employees in the hotel will no longer be necessary. This will cause a change in their livelihoods as they transition to new sources of income.

6.5.2.12 Loss of aesthetics during decommissioning

The greenery, architecture and overall landscaping that was aesthetically pleasing from the hotel will be lost upon decommissioning.

6.5.3 Mitigation Measures from respondents

The following are the proposed mitigation measures from the respondents:

6.5.3.1 Fire Safety:

Fire extinguishers should be serviced and maintained on-site at all times to address fire hazards, and proper handling and disposal procedures for flammable materials will be strictly adhered to.

6.5.3.2 Renewable Energy:

The project should prioritize the use of renewable energy sources to minimize emissions and reduce environmental impact. Additionally, the servicing of equipment will be optimized to enhance energy efficiency.

6.5.3.3 Energy Saving Practices:

Energy-saving practices and the use of energy-efficient equipment should be incorporated into the project design and operations. Harnessing solar energy should be encouraged to further reduce reliance on conventional energy sources and promote sustainability.

6.5.3.4 Adherence to Water Quality Regulations:

The proponent should comply with Water Quality Regulations of 2006 concerning effluent discharge to prevent pollution and ensure the preservation of water quality in the surrounding area.

6.5.3.5 Area Reclamation and Regreening:

Efforts should be made to reclaim the project area and promote re-greening initiatives to restore natural vegetation and enhance the environmental aesthetics of the compound.

6.5.3.6 Site Investigation and Service Line Identification:

Thorough site investigations should be conducted to identify underground service lines and infrastructure, with necessary measures taken to relocate affected services in consultation with the Kenya Airports Authority (KAA) to prevent disruptions.

6.5.3.7 Firefighting Systems and Emergency Response:

Elaborate firefighting systems and emergency response plans should be implemented during the operational phase in compliance with Fire Reduction Rules to ensure prompt and effective response to fire incidents.

6.5.3.8 Enhanced Security Measures:

Security enhancements should be implemented to safeguard the hotel premises and the airport, enhancing overall security measures to mitigate potential risks and ensure the safety of guests and airport personnel.

6.5.3.9 Diversification of Services and Products:

Diverse services and products should be offered in the hotel to minimize competition and cater to the varied needs and preferences of guests, enhancing the overall guest experience.

6.5.3.10 Utilization of Modern Technology:

Modern technology should be utilized during the decommissioning phase to streamline processes, enhance efficiency, and minimize environmental impacts during the cessation of operations.

6.5.3.11 Noise control

The impact of noise generated from construction activities can be reduced by ensuring construction is carried out during the day and regular maintenance of construction equipment, including vehicles.

6.5.3.12 Infrastructure coordination

Respondents suggested coordinating with local authorities and service providers to manage the increased demand on local infrastructure and resources.

6.5.3.13 Environmental Management

A robust environmental management plan to handle waste, optimize resource use and ensure compliance with regulation should be developed and followed.

6.5.3.14 Dust control

This can be achieved through use of dust suppression techniques such as netting, and maintenance of machinery to reduce emissions. Water can also be sprinkled on dirt roads to minimize dust generation.

6.5.3.15 Traffic Management

Traffic marshals should be hired to control traffic of the delivery vehicles and vehicles involved in construction activities. Access roads should also be well designed and wide enough to facilitate easy transport in and out of the facility.

6.5.3.16 Suitable Construction materials

The proponent should ensure construction materials used do not introduce unnecessary glare to the aircraft operating in the airport.

6.6 Suggestions from the Respondents

The following are the suggestions proposed by the respondents during the ESIA study consultative public participation exercise;

- The project should designate a person to liaise with KAA during the construction phase to facilitate communication and coordination between the project team and airport authorities.
- The proponent should ensure that back-filling and construction activities are promptly carried out post-excavation as per the scheduled timeline. This measure aims to prevent water pooling, thereby mitigating the potential increase in bird activity within the airport vicinity.
- Preference should be given to companies located around the hotel area when awarding project tenders so as to foster local economic development and support businesses within the immediate vicinity.
- To promote employee well-being and foster community engagement, individuals working within the airport/cargo center should be offered discounted access to amenities such as the gym and rooftop swimming pool.
- Preference should be given to local residents during the hiring process for all project phases.
- Instead of outsourcing services from external providers, priority should be given to local businesses within the airport vicinity to fulfill the project's service requirements.
- Any damage to airport facilities resulting from construction activities should be repaired or restored at the proponent's expense.
- Ensure sufficient and adequate parking in the hotel design.
- The project proponent should ensure that they get the required height approval for the building's height including any other infrastructure e.g., communication masts, before proceeding with construction.
- Early consultation: Engage with stakeholders, including local communities, environmental experts and regulatory bodies at the early stages of the project to identify and address any potential concerns.
- Consider the long-term environmental impacts of the hotel including its carbon footprint and resource use.
- Maintain clear and transparent communication with neighbors at all project phases and provide regular updates on progress promptly.
- One Stakeholder opposed the project citing the reason as potential conflict between the hotel and Freight forwarders around the cargo section/zone.

7 Analysis Of Project Alternatives

7.1 Introduction

This chapter analyses the project alternatives with respect to the site, materials, technology level, solid waste and water waste management options. The process enhances the project design through an examination of potential options instead of only focusing on the more defensive task of reducing adverse impacts of a single design. It also involves studying the design alternatives based on their respective environmental cost. The best alternative, usually with the least adverse impacts is chosen. Among the alternatives to be assessed are the “No project” and the relocation options.

7.2 No Action Alternative

The No Action Alternative with respect to the proposed project implies that the status quo is maintained, that is, no construction/redevelopment activity takes place. This option is most suitable alternative from an extreme environmental perspective as it ensures non-interference with the existing conditions. However, the need for such redevelopment is high and the anticipated environmental and social impacts resulting from construction have already been experienced. The land will remain under-utilized or neglected. The No Project Option is the least preferred from the socioeconomic and partly environmental perspective since without the project:

- The economic benefits especially during construction i.e. provision of jobs for skilled and non-skilled workers will not be realized.
- There will be no generation of income by the developer and the Government.
- The local skills will remain underutilized.
- No employment opportunities will be created for Kenyans who will get the opportunity to work in the project.
- Potential to deter investors from being involved in such developments.

7.3 Alternative Site

Relocation option to a different site is another option. At the moment, there are no alternative sites for the proposed development (i.e. the project proponent does not have an alternative site). This means that the proponent has to look for alternative land if relocation is proposed. Looking for land to accommodate the scale and size of the project and completing official transactions may take a long time. Additionally, it is not a guarantee that such land would be available. It is also worth noting that the said project is already underway in terms of seeking development approvals from various government departments. Other essential activities like socioeconomic surveys, neighborhood analysis and Geo-technical surveys are also underway. The project design and planning before implementation call for costs; already incurred in the proposed development i.e. whatever has been done and paid to date would be counted as a loss to the proponent. In consideration of the above concerns and assessment of the current proposed site, relocation is not a viable option.

The proposed site is ideal for the following reasons:

- Strategic location within Jomo Kenyatta International Airport and Proximity to Wilson Airport and Syokimau Standard Gauge Railway taps into the demand for convenient guest accommodation rooms for both tourists and local businessmen.
- Proximity to Nairobi CBD and major roads such as Mombasa Road and Nairobi Expressway Road enhances the project's visibility and accessibility.

7.4 Schedule Alternative

This option entails postponing the project to a later time and subsequently “delaying” the project’s potential impacts. The only benefit is if there would be improvements to the project’s baseline conditions and technologies. However, this is not guaranteed and it may only lead to delays in development. Therefore, carrying out the proposed project with mitigation measures in place is the preferred option. In addition, carrying out the proposed project at a later time may lead to more operational and logistic costs due to increasing inflation and standards of living

7.5 Alternative Designs

All designs incorporated into this project have been done professionally taking into account the topography, soil types and structure. Environmental considerations have also been put in place to ensure the development does not negatively affect the surrounding environment. The architectural designs, structural engineering of the proposed hotel are specially designed. The construction will use modern technologies that promote sustainable development and green economy.

Sustainability design principles and construction parameters will be incorporated in the proposed project. Thus, the selection of materials will be informed by sustainable practices. Equipment that saves energy and water consumption and those that minimize hazards will be given first priority without compromising on cost or availability factors. The recruitment of labor and procurement of materials and equipment will be guided by national laws and best practice guidelines.

7.6 Alternative Materials

There is a wide range of construction and furnishing materials that can be sourced locally and internationally. The proponent plans to use certified raw materials/equipment and modern technology. Also, electrical appliances that save energy will be given first priority. Concrete pillars and walls will be made using locally sourced stones, cement, sand (washed and clean), steel bars and fittings that meet the Kenya Bureau of Standards (KEBS) requirements.

7.7 Wastewater Management Options

7.7.1 Use of Septic Tanks

This involves the construction of underground concrete-made tanks to store sludge. Septic tanks are expensive to construct and require regular emptying. In line with the Vision 2030 goals that aim for a nation where all its citizens have access to a clean, secure and sustainable environment, this alternative is inadequate to supplement wastewater disposal.

7.7.2 Use of Constructed/Artificial Wetland

Constructed wetland plants act as filters for toxins and biologically degrade pollutants. They use simple technology, low capital and have low maintenance costs. However, they require space and a longer time to function. Long-term studies on plant species on the site will also be required to avoid weed biological behavioral problems.

This alternative is therefore not suitable for this project.

7.7.3 Connection to the Existing Sewer System

Connection to the Nairobi City County sewer line will solve the waste management issue at a very minimal cost and in an environmentally efficient manner. This is the most viable option for the project since the area is already connected to the Nairobi City Water and Sewerage Company sewer line. *The proposed development intends to channel storm water as well as foul water to the existing Nairobi City Water and Sewerage Sanitation Company sewer system.*

7.7.4 Grey Water Treatment Plant Technology

This involves the construction of a wastewater treatment plant that uses chemicals to treat the effluents to acceptable standards. While it is expensive in the short term to construct and maintain a wastewater treatment plant, it is reliable, efficient and cost-effective in the long term. The sludge from the treatment plant can be composted and used for gardening. *The proponent intends to establish a treatment plant that will treat all grey water generated by the facility. The treated water will be used for irrigation and flushing toilets.*

7.8 Solid Waste Management Options

There will be a lot of solid waste that will be generated from the project during construction. An integrated waste management system will be adopted to ensure that the recyclable and non-recyclable solid waste materials are properly disposed of and in an environmentally friendly approach. The proponent will ensure that waste is minimized at the source, there will be reuse of waste where applicable and separation of waste; i.e., recyclable from non-recyclable. The proponent will also engage a waste handler that is NEMA certified to help with the removal and disposal of waste. An integrated solid waste management system is recommended which is as follows:

- a) First, the proponent should give priority to *prevention and reduction at source* of the materials. This option will demand a solid waste management awareness programme.
- b) The Proponent will consider **separating the waste from source** through awareness programmes among the employees as well as guests.
- c) The proponent will also consider **recycling and reusing** the plastic waste as a third alternative in priority. The recyclables may be sold to waste buyers locally or directly to any company that recycles the plastic waste.
- d) The third priority in the hierarchy of options is land filling *of the waste that is not recyclable or reusable*. It is to the interest of the proponent and the community that the waste is effectively managed so as to maintain a safe and healthy environment to the workers and the community at large through appropriate disposal mechanisms.

7.9 Water Supply Alternatives

Water is a finite resource and is becoming scarce by the day in most parts of the country and even globally. The available sources of water supply are discussed below.

7.9.1 Tankers/Bowsers

There are commercial water supply services which haul water to the client to supplement existing water sources. The proponent can use the services as a supply option in times of limited supply.

7.9.2 Rainwater Harvesting

This entails installation of rain gutters and storage tanks for rainwater harvesting from the roofs of the buildings. This water can be used for non-portable purposes such as watering lawns, gardens, flushing toilets and general cleaning. The option is ideal for water conservation but would not be adequate to fulfil water needs of the development.

7.9.3 Borehole water consumption

The proponent intends to drill a borehole to supplement the supply from Nairobi Water and Sewerage Company (NCWSC) and recycled water from the grey water waste treatment plant.

7.9.4 Connection to Nairobi County Water and Sewerage Company (NCWSC)

The project area has access to the Nairobi City Water and Sewerage Company (NCWSC) water supply line. However, there are times that the supply from the line is unreliable, with prolonged periods of rationing. Relying solely on supply from the NCWSC line would not meet water needs for the development.

7.9.5 Multiple Water Supply Option

To mitigate shortages, the proponent will consider water supply from the borehole, Nairobi Water and Sewerage Company Supply and water from the Grey Waste Water Treatment Plant. This is the most viable option as it would guarantee uninterrupted water supply for the proposed development.

7.10 Energy Source

7.10.1 Natural lighting

This refers to making maximum use of the natural environment during the design stage. This option allows for optimizing the use of natural lighting. It is the most efficient, environmentally friendly and cost-effective, especially for daytime lighting.

7.10.2 Solar panel

Installation of solar panels is another green technology the developer can prioritize as energy supply. Solar power is environmentally sound and doesn't produce fossil fuel waste by-products. In addition, they will have lower carbon footprint and reduced impact on the environment. The proponent intends to install solar panels to supplement energy supply from KPLC.

7.10.3 Kenya Power & Lighting Company Ltd (KPLC)

The main source of electricity will be by Kenya Power and Lighting Company. However, to reduce the electricity costs, priorities should be to; make use of motion detectors, use of Light Emitting Diodes (LEDs) that have Light Dependent Resistance (LDR) for security and street lighting and use of hybrid electricity i.e. combining energy supply from photovoltaic solar panels with KPLC power source to provide a balanced energy supply.

Thus, a combination of KPLC, Natural lighting and Solar Power is the most recommended option for this project.

7.10.4 Generator

The cost of running a generator is very high and the emissions from the fossil fuel are not environmentally friendly. Therefore, from the environmental considerations as well as economic analysis; use of generator is not a preferred option for the proponent to consider in supplementing connection to power supply. However, a generator can be used as a back-up power supply option in case of emergency or power-outage. The Proponent intends to install 2x550kVA Prime rated DG Generator to supplement power supply during blackouts.

7.11 The Proposed Development Alternative

Under the proposed development alternative, the developers of the proposed project would be issued with an EIA License. In issuing the license, NEMA would approve the proponent's bid to construct the hotel, provided all environmental measures and alternative technologies are complied with during the construction period and operational phases. Since the potential negative impacts are relatively insignificant and the benefits accrued from the project will benefit both the proponent and the economy, this is the **best alternative**.

8 ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

8.1 Introduction

This chapter identifies and predicts the potential effects on various environmental elements arising from the construction, operation, and decommissioning of the proposed project. It comprehensively outlines the potential impacts on both the biophysical and socioeconomic aspects of the local environment resulting from the planned activities and sub-activities. The prediction of impacts helps to minimize the adverse impacts and maximize the beneficial impacts on environmental quality.

The proposed project will create impact on the environment in three distinct phases:

- During the construction phase;
- During the operation phase; and
- During the decommissioning phase.

The project characteristics, form the basis for impact identification and evaluation. The impacts that are expected to arise from the project are either positive, negative, direct, indirect, short-term, or temporary. There are no adverse or permanent impacts anticipated in the proposed project.

The consultant used the scale indicated in *table 2.2* to analyze the proposed project impacts and quantified them on a scale of 0 – 5.

8.2 Positive Impacts during the Construction Phase

Positive impacts associated with the proposed project during the construction phase include:

8.2.1 Job Opportunities

Throughout the lifetime of the proposed project, numerous job opportunities will be created, there will be need for casuals and skilled personnel during the construction, operational and decommissioning phase. The project through the generation of employment will stimulate other economic activities. It will also enhance the skill levels of casual laborers through intensive and well-structured technology transfer. Most of the construction labour will be sourced locally and around the communities neighbouring the project area, and in this way benefiting the youth who bear the brunt of the high rate of unemployment in the country. This impact will be **moderate (value of 2)**.

8.2.2 Gains in the Local and National Economy

The construction phase of the project will generate revenue for both the National and County Governments. The National Government will benefit from various taxes (e.g. income tax, Value Added Tax (VAT), etc.) and approval fees (e.g. NCA). The county government will gain revenue in the form of construction plan approvals, local business licenses/permits, etc. All materials will be imported through the existing transport hubs which will increase the county's revenue. This impact will be **Moderate (value of 2)**.

8.2.3 Provision of Market for Supply of Building Materials

The project will require supply of large quantities of building materials, most of which will be sourced locally thus providing a ready market for local building materials. This will in turn lead to income generation for local materials suppliers, quarrying companies, hardware shops, etc.

Surrounding businesses will benefit from an increased customer base, increasing business activity and expansion. High influx of customers coming from the project site will also promote publicity and competitiveness of local businesses. This impact will be **High (value of 3)**.

8.2.4 Provision of Opportunities for the Advancement of Environmental Technologies

The need to ensure that environmental impacts are mitigated and controlled has fueled the mushrooming of many new technologies that provide sustainable environmental solutions. A good example is embracing green building practices during construction. New construction projects provide numerous opportunities for the furtherance of sustainable green building practices and the promotion of progressive environmental technological solutions. This impact will be **Moderate (value of 2)**.

8.2.5 Provision of a Ready Food Supply Market

The inception of the project's construction activities will create a demand for food required by the large number of workers and other related staff. The increased food demand will in turn increase more business opportunities and revenues for food vendors mostly belonging to the low-income cadre of society comprising women and youths, directly improving their livelihoods. This impact will be **Moderate (value of 2)**.

8.2.6 Improvement of the High-End Status of the Airport's Accommodation Facilities

The project will be situated in an airport environment comprising a variety of businesses, factories, companies, and other private organizations. The image, status and reputation of the airport premises will increase as the proposed project entails the development of a four-star hotel. Neighboring businesses will also benefit from the luxury and the pomp associated with being in close proximity to a world-class hotel and its affiliate amenities through increased clientele and accompanying publicity. This impact will be **Moderate (value of 2)**.

8.2.7 Introduction of a State-Of-Art Building, Amenities and Equipment

Any project of such magnitude provides an opportunity for developers and contractors to embrace and make use of the most advanced technologies and best practices in the construction industry. The proposed project is no exception, as it will incorporate state-of-the-art building technologies and designs with the installation of modern amenities, equipment and facilities for use by ever-evolving clients with a taste for new and better varieties of hotel services. This impact will be **Moderate (value of 2)**.

8.2.8 Improved Building Technology/ Knowledge Transfer

With the commencement of the project, it is highly likely for construction workers to gain new skills which will empower and propel them into better opportunities. This impact will be **moderate (value of 2)**.

8.3 Negative Impacts during the Construction Phase

8.3.1 Vegetation Clearing

Vegetation has a great effect on the general and localized environment as well as the microclimate. Usually, the flora creates a good environment for habitats. In consequence, vegetation clearance during construction will have a negative effect on the flora and fauna in the surrounding area.

There is minimal vegetation and trees within the project site which will be cleared to prepare the site for construction. With regards to flora, there are no known red-list species or significant indigenous vegetation on-site or within the project area. The only areas of concern with regard to biodiversity are 3 acacia trees, 1 palm tree, Aloe Vera plant, bushes and grass vegetation. This impact will be **minimal (value of 1)**.

Potential Mitigation Measures

- Clearly delineate areas for land preparation/other activities in the field to prevent loss of vegetation outside of designated works areas.
- Landscape and plant vegetation in all open areas after the completion of the project.
- The contractor should develop a landscaping plan that shall not be limited to the site but inclusive of the project surrounding area.
- Use soil stockpiles to level rugged earth roads sections and to fill quarries and borrow pits.
- Stockpiles should not be allowed to become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation.
- Soil conservation measures should be taken to the stockpiles to prevent erosion.
- Soil stockpiles should not be higher than 2.5 m or stored for a period longer than 2 months.
- Stabilize the excavated areas to prevent caving in of soil.

8.3.2 Increased Noise and Vibration Generation

The major source of noise in the airport area are the aircraft whose effects are also felt outside the airport grounds to the adjacent areas. The noise so generated is intermittent, that it occurs only when a flight event is taking place (a take-off or a landing). Other sources at the terminal areas include stationary and taxiing aircraft, ground support equipment, surface transport vehicles, cargo operations and power backup generators (when in use). The proposed project site is located within a freight area surrounded by light industrial companies dealing with Cargo operations, Four Points by Sheraton Airport Hotel and Kenya Airports Authority.

The potential sources within the project area include: nearby cargo operating companies, aircraft, and Dollies used in transporting Cargo, Trucks and Lorries. The loudest and most intrusive noise source at the airport is the road noise from tractor-drawn dollies and Aircraft. Unloaded dollies are noisier than loaded dollies. In the absence of Aircraft and vehicular noise, the predominant noise source is from the neighbouring Kuehne Nagel construction site to the south.

During demolition of the existing slab and construction works, there is the potential for permissible/acceptable human noise levels being temporarily exceeded due to the operation of lorries, moving machines & equipment, material delivery vehicles and workers communicating at the site. To be affected mostly are the site workers, Four Points by Sheraton Airport Hotel, Kenya Airports Authority and neighbouring cargo operating companies who are the likely key receptors of the increased noise and vibration generated. Since noise beyond some level is itself a nuisance if not maintained within acceptable limits (an exposure 85 Db/ 8 hours as WHO standards). Exposure of workers beyond the specified limits will lead to hearing complications such as tinnitus, and partial or even complete hearing loss. The impact will be high (value of 3)

Potential Mitigation Measures

The following noise-suppression techniques will be employed to minimize the impact of temporary construction noise and vibrations at the project site.

- Ensure that working times are within the permissible times as per NEMA Regulations. Noisy activities should be scheduled during less sensitive times.
- Plan the site clearance and construction activities in consultation with the neighbouring community so that activities with the greatest potential to generate noise and vibration are scheduled accordingly.
- Consult and inform the immediate stakeholders before undertaking a blast (if any). Any blasting should be supervised and within the established regulations from the Geology and Mines Department;
- Install portable barriers to shield compressors and other small stationary equipment where necessary.

- Using noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities (if any), exhaust muffling devices for combustion engines and vibration dampers;
- Utilization of equipment that has the lowest possible sound levels.
- Ensure that all vehicles and construction machinery are well maintained and regularly serviced to avoid excessive noise generation.
- Provide appropriate protective gear including ear corks and ear muffs to all construction workers working in noisy sections and enforce application at all times during the construction works.
- Sensitization of drivers handling construction vehicles and machinery to switch off engines or machinery that are not being used.
- Effectively employ sound insulation technologies during the construction phase to minimize high noise levels from external environment.
- Limit pickup trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use.
- The delivery of construction materials and noisy activities should be done preferably at off-peak hours to minimize high level noise impacts.
- Ensure contractors compliance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.

8.3.3 Increased Solid Waste Generation

Solid waste will consist of construction debris, cement bags, wood, broken glasses, containers, metal, sharp objects such as nails, organic waste, paper, and plastic among others during the development's construction phase. Transportation of construction materials or solid waste to and/or from the project site can also cause littering along the airport roads and nearby facilities if the transportation trucks are not appropriately covered. This impact will be **High**, hence a **value of 3**.

Potential Mitigation Measures

- Use of an Integrated Solid Waste Management System (ISWMS); through a hierarchy of options including source reduction, recycling, composting and reuse;
- Efficient estimation and use of building material to reduce waste and recycling/reuse where feasible;
- Ensure daily removal of solid waste materials from the construction sites to avoid unnecessary accumulation at the locations;
- Engage the services of a NEMA Licensed waste handler to collect and transport waste to designated disposal sites;
- The contractor should consider dumping the excavated soils in abandoned quarries;
- Proper handling and disposal of all paint materials confirmed to contain lead as a hazardous waste;
- Choose building materials that are least polluting and environmentally sustainable;
- Provide a central waste receptacle;
- Provide mechanisms to segregate waste at source to enable recycling;
- Consider reselling reusable or recyclable waste materials such as paper, cardboard, plastic etc. to local waste recyclers;
- Develop a comprehensive waste management plan for the construction period guided by the ESMP and the NEMA Waste Management Guidelines.
- Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006.

8.3.4 Increased Generation of Waste Water

During construction, a large number of workers will be employed who will require adequate sanitation facilities. Wastewater will also be generated during construction activities such as concrete curing. This will be a concern that the contractor has to address as he engages in the construction of the proposed hotel. This impact will be **moderate**, hence a **value of 2**.

Potential Mitigation Measures

- Installation of adequate mobile toilets separate for males and females that are well-maintained and with adequate hand washing facilities. Contract a registered septic company and schedule regular cleaning and pumping out of waste;
- Water containing pollutants such as cement, concrete, lime, chemicals, and fuels to be discharged into a conservancy tank for removal from the site;
- Ensure that the proposed project does not delay after the commencement of construction activities and it is built in record time to avert potential aviation control risks through bird attraction brought about by stagnant pools of rainwater;
- Control of water usage during construction activities to minimize wastage;
- Fix leaking taps and pipes in record time;
- Contain and sustainably manage potential pollutants of any kind to ensure the water table is not endangered;
- Promote recycling of wastewater and storm-water where feasible;
- Comply with the provisions of the Environmental Management and Coordination (Water Quality) Regulations, 2006.

8.3.5 Air Pollution

Air pollution during the construction phase will be significant due to dust and vehicle emissions, and increased windy weather conditions. Dust will be produced during; site preparation activities such as clearing, demolition, excavation, and leveling activities; construction activities including cutting, grinding, and drilling materials like concrete, stone, and brick which release fine particulate matter. Material handling activities like loading, unloading, and transporting construction materials are also anticipated to produce dust.

Dust emissions (PM_{2.5} and PM₁₀) will thus increase proportionately with the additional magnitudes of earthworks, materials mobilization and batching as well as additional movements of trucks into and out of the airport grounds. Dust in any of its form can pose both health and environmental issues. Health hazards posed by dust range from respiratory issues, cardiovascular issues and eye irritation. From an environmental point of view, dust degrades air quality and can also reduce visibility, creating safety hazards.

Construction equipment and vehicles associated with the construction of the proposed hotel will generate additional emissions into the atmosphere within the airport grounds. The overall actual emissions (Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Sulphur oxides (SO_x) and Volatile Organic Compounds (VOCs) etc.) will be dependent on the additional number of fossil fuel-driven equipment including earth movers, pavers, batching plants and material movement trucks.

Based on the Ambient Air Quality Measurements conducted on 26th July 2024, the average PM 2.5 and PM 10 results recorded across all monitoring points were found to be within limits set in the Environmental Management Coordination Act (EMCA) Air Quality Regulations, 2014. The level of gaseous pollutants of concern which include (CO, VOCs and NO₂) were found to be within the recommended EMCA Air Quality Regulations. The results indicated that there is exceeding SO₂ levels at all monitoring locations. This could be attributed to gases emanating from vehicular emissions along the nearby road.

Continuous monitoring of the ambient air quality is recommended as this will assist in obtaining concrete information on the status of air pollution. The measurements should be done at different weather and seasons to ensure that all the weather patterns are taken into consideration during the monitoring process.

This impact will be **Moderate**, hence a **value of 2**.

Potential Mitigation Measures for Impacts due to Dust:

- To the extent possible, undertake earthworks in damp conditions to reduce dust emissions;
- Regular sprinkling of water on work areas to prevent fugitive dust violations.
- Use of dust nets/screens around the construction site to contain and arrest dust
- Materials management and batching plants associated with the project should be designed for low dust and emissions;
- Minimize exposed areas through scheduling of construction activities to enable dust control;
- Onsite dirt piles or other stockpiled material should be covered, windbreaks installed, water and/or soil stabilizers employed to reduce wind-blown dust emissions;
- All staff employed at the construction site and visitors to be provided with dust masks when required;
- Collecting storm water and using it to dampen the construction site;
- Enforce onsite speed limit regulations for construction vehicles along access routes;
- Restricting heights from which materials are to be dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading.

Potential Mitigation Measures for Impacts due to Vehicular Emissions:

- All construction machinery should be regularly and promptly maintained and serviced in accordance with the manufacturer's specifications to minimize the generation of hazardous gases;
- Drivers should be instructed on the benefits of driving practices that reduce both the risk of accidents and fuel consumption, including measured acceleration and driving within safe speed limits;
- Replacing older vehicles with newer, more fuel-efficient alternatives;
- Discourage machine/equipment operators and drivers of construction vehicles from unnecessary revving and idling;
- Sensitize construction drivers and machinery operators to switch off engines when not in use;
- Fueled construction equipment to be used where feasible with environmentally friendly fuels such as low-sulphur diesel;
- All raw materials where possible must be sourced as close as possible to the construction site thus reducing emissions from vehicular traffic;
- Embrace modern construction technology that suppresses hydrocarbons emission;
- Regularly monitor air quality levels to ensure compliance with Environmental Management and Coordination (Air Quality) Regulations, 2014.

8.3.6 High Demand for Raw Materials

The proponent will source building materials such as sand, ballast and hardcore from a registered quarry and sand mining firms, whose projects have undergone satisfactory environmental impact assessment/audit and received NEMA approval. Since such firms are expected to apply acceptable environmental performance standards, the negative impacts of their activities at the extraction sites are considerably well mitigated. This impact will be **moderate**, hence a **value of 2**.

Mitigation Measures

- Source building materials from local suppliers who use environmentally friendly processes in their operations;
- Ensure accurate budgeting and estimation of actual construction material requirements to ensure that the least amount of material necessary is ordered;
- Ensure that damage or loss of materials at the construction site is kept minimal through proper use and storage.

8.3.7 Hazardous Material Spillage

During the construction phase, some of the site's construction equipment will require diesel and/or oil. It is also important to note that oil/grease spills are prevalent in construction sites and in most areas that make use of petroleum products. Such products contain detrimental elements to the environment. Though this may not be common at the site, it is wise to control and observe the little that could occur especially during maintenance of the machinery. There is therefore the risk of leaks or spills and the potential for contaminating the site's soil. The impacts of improperly stored fuel and other chemicals could prove detrimental if these fluids infiltrate the surface waters or groundwater systems. Management guidelines should be implemented in order to regulate and document the use of explosives, chemicals and fuels within the project site. Operators should express due caution when it comes to the re-fueling of equipment on site, as an accidental oil spill is more likely to occur during these activities. This impact will be **minimal**, hence a **value of 1**.

Potential Mitigation Measures

- Train personnel on the risks of oil spills and leakages;
- Refueling and maintenance of large vehicles to only take place at designated areas;
- All hazardous materials to be stored in appropriately banded containers and placed on concrete floors where applicable;
- Maintain spill response kits at the construction site at all times;
- Prepare and display on-site spill response procedures and train workers on spill response and management;
- The site design to incorporate oil sumps at the parking areas to isolate oil spills from parked vehicles that might spill into the storm drains;
- No solid waste, fuels, or oils shall be discharged on the land surface or into drains.
- All oil products and materials should be stored in site stores;
- Any wash-off from the oil/grease handling area or workshop shall be drained through impervious drains;
- Regularly check for leaks from paint containers;
- All machinery must be keenly monitored to prevent oil leaks on the ground. This can be affected through regular maintenance of the machinery.
- Maintenance and servicing of machinery must be carried out in a designated area (protected service bays) and areas where oils are completely restrained from reaching the ground. Such areas should be covered to prevent storms from carrying away oils into the soil or water systems.

8.3.8 Occupational Health and Safety Risks

Construction workers will be susceptible to health and safety hazards which such as muscular-skeletal injuries, cuts and bruises, falls into unmarked/ uncovered trenches, and falls from height. This impact will be **High** hence a **value of 3**.

Potential Mitigation Measures

- Send a notification to DOSHS prior to the commencement of construction and register the site with them.

- Appoint a site safety officer to monitor compliance with OSHA, 2007.
- Keep a well-stocked first aid kit of the prescribed standard and have trained first aiders among the project employees.
- Training of workers in safety issues related to their activities, such as the hazards of working at height, use of high-visibility safety apparel and safe manual lifting.
- The area around which elevated work is taking place should be barricaded to prevent unauthorized access. Working under personnel on elevated structures should be avoided.
- Ladders should be used according to pre-established safety procedures for proper placement, climbing, standing, as well as the use of extensions.
- Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of workers, among others.
- Provide appropriate PPE to workers.
- Ensure that electrical fittings are done by qualified contractors and regular inspections of the facility's electrical system is done by qualified personnel to avert electrical faults.
- Ensure proper installation of staircases and lifts that could serve as alternative escape routes during emergencies.
- Ensure that scaffolds are constructed to the requisite standards with safe means of access.
- Ensure all lifting plant equipment are examined by an Authorized Plant Examiner.
- Carry out occupational medical examinations for all workers.
- Train workers on Occupational Safety and Health and Construction Safety.
- Ensure provisions for reporting incidents, accidents and dangerous occurrences, during construction use prescribed forms from the Directorate of Occupational Safety and Health.
- Obtain a Work Injury Benefit Act (WIBA) cover for employees.
- Ensure Compliance to the Occupational Safety and Health Act, 2007.

8.3.9 Community Safety and Health Risks

During this phase the neighbouring community will be susceptible to health and safety hazards posed by demolition and construction works. Risks include: Air pollution due to dust, noise, falling objects, falls into un-marked/ uncovered trenches and accidents from construction vehicles. This impact will be **moderate**, hence a **value of 2**.

Potential Mitigation Measures

- The proponent should establish a communications desk within the hotel where all concerns can be recorded to ensure a continued engagement between the proponent and the community.
- Ensure continuous engagement with the community to identify community risks as a result of the development.
- Install catch platforms around the site perimeter to arrest any falling objects;
- Immediate neighbors and other stakeholders should be sensitized on the dangers and risks associated with the construction works for enhanced self-responsibility on personal safety;
- Disabled access features and safety signage should be placed strategically around and within the site;
- Limit the movement of workers and contractors within project-defined areas and designated traffic and transport routes or locations;
- Control access to the site and implement a permit system for vehicle access for the duration of construction;
- The contractor should comply with the provisions of: OSHA, 2007; Public Health Act Cap 242; Public Roads and Roads of Access Act Cap 399; Traffic Act Cap 403; and the Kenya Roads Act, 2007;

- The Contractor should develop an Induced Access Management Plan, which should as a minimum, incorporate the measures described above and develop site-specific procedures for the monitoring program, to be agreed by the proponent.

8.3.10 Increased Water Abstraction and Consumption

Construction projects utilize significant quantities of water for concrete mixing, laying and curing. Water will also be required for human use including drinking and sanitary needs. These demands strain the available water resources. This impact will be **high** hence a **value of 3**.

Potential Mitigation Measures

- Water should be recycled where possible without compromising on quality and health.
- Ensure good use of water resources during construction by ensuring regular repair and replacement of broken or worn-out pipes and fittings.
- Identify activities and areas that cause high consumption and implement conservation practices.
- The contractor should put in place sound and sufficient water storage reservoirs that are leak-proof;
- Install water-saving devices in appropriate places such as flow regulators and self-closing taps.
- Drilling of a borehole to supplement supply from Nairobi Water and Sewerage Company (NWSC).
- Provide neighbors with adequate notice regarding water connections disruptions etc.
- Ensure Compliance with the Water Act 2016, and Environment Management and Coordination Act (Water Quality regulations), 2006.

8.3.11 Traffic Impact

The proposed project is located along a specialized freight Road and Third Freight Lane. Third Freight Lane experiences traffic congestion during peak hours when workers are being transported to the neighboring organizations as well as passengers going to Jomo Kenyatta International Airport. Specialized Freight Road majorly experiences traffic due to cargo operations. Entry for site works will be through Third Freight Lane/Freight Road. Working hours shall be those generally in force in the Building and Civil Engineering Trades in Kenya and as per NEMA Licensing conditions. No work shall be carried out at night or on gazetted holidays unless necessary where a permit shall be obtained from NEMA. This impact will be **high** hence a **value of 3**.

Potential Mitigation Measures

The project contractor should put in place the following measures to reduce traffic:

- Adopt a Traffic Management plan and delivery management plan to enhance traffic movement within the site and along the third freight lane;
- Heavy Commercial Vehicles (HCVs) delivering construction materials should observe designated speed limits for the area;
- Minimize haulage and transportation of construction material during peak hours;
- Flagmen/traffic marshals should be deployed at the entrance to control traffic;
- Construct acceleration and deceleration lanes to channel delivery trucks to the site without creating a backlog of traffic behind them as they navigate turns of entry;
- Proper signage and warnings should be placed at strategic locations to direct traffic to minimize inconveniences to motorists and forewarn other motorists of HCVs turning and transportation of abnormal loads;

- Construction activities should be done within the confines of the construction area. Ensure the construction doesn't occupy road reserves and complies with the Traffic and land demarcation obligations;
- Enough parking spaces shall be provided for the vehicles transporting workers and heavy trucks offloading the construction materials;
- The selection of construction areas shall be based on the existing road layout and the location of access to the various commercial and residential properties;
- Ensure maintenance of access roads to the site and repair of any damage caused by trucks.
- Any change in the normal programming of activities that will significantly disrupt normalcy along the abutting project roads should be timely communicated.

8.3.12 Traffic Accidents

Due to increased human and vehicular traffic in the area, the proposed project might lead to an increased number of accidents. This impact will be **minimal** hence a **value of 1**.

Potential Mitigation Measures

- Employ traffic marshals to control the movement of vehicles during the construction phase of the project;
- Implement the annexed Traffic Management Plan to enhance the traffic movement within the site and the public road;
- Use of signs for diversion and to warn motorists against dangers at or near the construction site;
- Use of reflective jackets among other PPE to avoid accidents;
- Work closely with the traffic police to ensure that any incident on the detours is quickly cleared to enable a seamless transition of pedestrian and vehicular traffic.

8.3.13 Damage to Existing Infrastructure

The project has the potential to damage access roads leading to the site due to the weight of trucks transferring construction materials such as concrete, steel, cement, etc. Water supply, internet connection and power supply systems might be disrupted during demolition, excavation and construction works.

Potential Mitigation Measures:

- Map all utility infrastructure located within or near the project site before the commencement of excavation works.
- Liaise with the Nairobi City County Government to ensure safe removal of underground utility infrastructure at the proposed project site during excavation works.
- The contractor should work in consultation with the relevant county departments and agencies such as NCWSC to maintain access roads and repair damages to infrastructure.
- Inform users of planned service interruptions sufficiently ahead of time for them to put in place strategies to mitigate the consequences of the interruptions.

8.3.14 Increased Energy Demand

Construction activities will use engine-driven machinery such as transportation vehicles, concrete mixers, vibrators, compressors and power generators that require fossil fuel inputs such as diesel and petrol. Their continual application will increase the demand for energy. This impact will be **moderate** hence a **value of 2**.

Potential Mitigation Measures

- Switch off engines when not in use;
- Use well-serviced construction machinery that is efficient in fuel consumption;

- Maximize the use of natural lighting by limiting construction works to daytime;
- Repair or replace any faulty equipment with more efficient and economical alternatives;
- Utilize electricity meters to monitor energy consumption within all work sections and identify areas that cost most energy in order to forestall appropriate energy conservation measures;
- Create awareness among workers on the importance of conservation of energy resources.
- Employ technologies that demand less energy consumption;
- Use energy-saving lighting systems;
- Consider Utilizing electricity meters to monitor energy consumption which is subject to coordination with energy optimization consultant and identify areas which cost most energy in order to forestall appropriate energy conservation measures.

8.3.15 Insecurity

Construction sites in Kenya attract all manner of people not directly engaged in the work. These will include people hoping to secure some form of casual work, outside caterers and idlers. This introduces an element of insecurity at the construction site. There have been past cases on the risk of fuel pilferage for some other project within the project site area due to lack of security personnel manning the site. This impact will be **moderate** hence a **value of 2**.

Potential Mitigation Measures

- The contractor should conduct due diligence on potential employees and require police clearance for laborers;
- The Airport being a sensitive area clear security protocols should be established and followed;
- The contractor should obtain gate passes for all workers from KAA and provide for their transportation from JKIA entrance gate and from the site back to the exit gate;
- Secure the site and have security personnel manning the site;
- The contractor to give out information of suspecting conduct within the site to the local administration;
- Hire services of a security firm to monitor personnel or visitor movement within and close to the site;
- Formulate and instill a place of work conduct;
- Ensure every construction staff biodata is well captured;
- The contractor should work closely with the Kenya Airport Police Unit within JKIA to ensure the government provides security during construction.

8.3.16 Soil Erosion

Vegetation present at the site will be cleared during site preparation for construction. This may result to increased soil erosion and sedimentation of nearby water courses caused by surface runoff and through storm drains. Further, during construction, earthworks and truck movements on unpaved surfaces are bound to result in significant amounts of loose soil materials which are prone to water and wind erosion. Uncontrolled soil erosion can have adverse effects on the local storm water drains, road network and sewer line blockages.

Soils will be disturbed as excavations must be done to establish the foundation. In addition to the loss of productive land due to soil erosion, soils can be impacted because of disposal of waste materials, and compaction with heavy machinery used for construction. This impact will be **moderate**, hence a **value of 2**.

Potential Mitigation Measures

- Site clearing or disturbance of the natural vegetation should be planned and approved as part of the project management process;

- Terracing and leveling the project site to reduce run-off velocity and increase infiltration of rainwater into the soil;
- Providing adequate road drainage based on road width, surface material, compaction, and maintenance;
- Providing effective short-term measures for slope stabilization, sediment control and subsidence control until long term measures for the operational phase can be implemented;
- Soils excavated should be used for re-filling and should not be left exposed to wind or water for long periods;
- Runoff loaded with sediment and other suspended materials from the site/working areas should be prevented from discharging to adjacent watercourses and/or water bodies must be prevented;
- Prepare a restoration scheme to guide re vegetation of areas cleared during construction comprising of indigenous species and to be rid of any invasive species;
- Banding the site to control run-off loaded with sediment and other suspended materials from the site from watercourses.

8.3.17 Flooding Risk

As drainage areas become increasingly impervious due to urban development, storm water runoff volumes, flows, and velocities increase, while base groundwater flows decrease. Rain water that would otherwise be “soaked” by the plants and soils is instead to drainage systems and nearby streams. Human activities in the city also generate increased pollutant loads, ranging from heavy automobile traffic to the use of various chemicals. These pollutants, as well as the deposition of atmospheric pollution from outside the city, build up on impervious surfaces during dry weather. Rain and snow events then “wash” these pollutants into the city’s drainage channels, streams, and rivers.

Excavation of soils to construct foundations may loosen soil which may be washed alongside any poorly disposed waste on site into storm drains, clogging them. The loose soil is also likely to increase sediment load in storm water. Together with the loss of flora, changing the characteristics of the project site from its present state to a more built state and changing the soil’s characteristics will lead to a change in the water regime at and around the project site. This is because the built areas will increase run-off while reducing the percolation of water into the ground and thereby also changing the sub-surface hydrology.

By overloading the capacity of storm sewers, poorly managed storm water runoff is responsible for increased combined sewer overflow events and adverse downstream impacts such as flash flooding, channel erosion, surface and groundwater pollution, and habitat degradation. With the recent heavy rains experienced in the months of March and April, Jomo Kenyatta International Airport area is one of the areas in the city that experienced flooding.

The proposed project will, however, not have any impact on surface runoff compared to the existing condition as the ground coverage allows for sufficient percolation of ground water. The site is also not at risk of flooding as it is significantly higher than the areas that flooded and is not near any water bodies. No major issues will be anticipated from the proposed development since it has no basement level. This impact will be **moderate** hence a **value of 2**.

Mitigation Measures

The design of the hotel and courtyard to be specific allows for water to seep back into the aquifer. The proposed hotel will also have lots of green spaces to reduce surface runoff

- The drainage system should ensure that surface flow is drained suitably into the public drains provided to control flooding within the site;

- Installing cascades to break the impact of water flowing into the drains;
- Controlling the earthworks and ensuring the management of excavation activities;
- Drainage channels should be installed in all areas that generate or receive surface water such as car parking, driveways and along the building block edges of the roofs;
- The channels should be covered with gratings or other suitable and approved materials to prevent the occurrence of accidents and entry of dirt that would compromise the flow of run-off;
- The drainage channels should be designed with regard to the peak volumes such as periods or seasons when there is a high intensity of rainfall;
- The drainage channels should ensure the safe final disposal of run-off /surface water and should be self-cleaning which means it should have a suitable gradient;
- Trees can be preserved, or new trees can be planted to reduce storm water runoff. Tree canopy can intercept a significant amount of rainfall before it becomes runoff, particularly if the tree canopy covers impervious surfaces, such as in the case of street trees. Through the processes of evapo-transpiration and nutrient uptake, trees located on a development site have the capacity to reduce storm water runoff volumes and improve water quality. Further, through root growth, trees can improve the infiltration capacity of the soils in which they grow. Both tree planting and tree preservation can contribute to storm water management on a site.

8.3.18 Labour Management

Effective labor management in construction is essential for avoiding delays and other inefficiencies. JKIA is a sensitive area in terms of security; therefore, contractor will be required to put in place security measures to ensure the safety of all visitors and occupants including construction workers.

Mitigation Measures

- Make necessary arrangements for mass transportation of workers to and from site on a daily basis. The employees should be hired from within the locality so as to limit movement;
- Ensure that all food vendors supplying food to the construction workers are licensed by the Ministry of Health (Port Health) before they are allowed to sell food to the workers;
- Develop a human resource policy for all unskilled labour / casual laborers;
- Develop an adequate and effective employee grievance system;
- Ensure non-discrimination of Vulnerable Individuals (if any) such as PLWD, and widows;
- Comply with the Employment Act 2007 and its amendment Act of 2022, to ensure there is no forced labour, employment of underage citizens, discrimination in employment and sexual harassment.

8.3.19 Aviation Safety Risks

Height Approval for Building and Cranes: As per the Civil Aviation Act No. 21 of 2013, property developers must seek approval from the authority before putting up a storey building next to or within an airport. The main reason behind the move is the need to regulate the height of buildings due to the airport's safety and operation concerns. Most importantly, the height of buildings is regulated to ensure that there is no obstacle hindering landing planes, given the specific procedures conducted before the exercise. KCAA approval should also be obtained for cranes to be used during the construction phase.

Additionally, airport traffic management relies on radar signals to control traffic. Large buildings are likely to block inbound and outbound signals hence affecting communication between the command centre and pilots.

Building Materials: The use of reflective building materials on any development within the aerodrome or vicinity poses a serious threat to aircraft operational safety.

Landscaping Guidelines: It is important to select plants and trees for landscaping that do not attract wildlife or birds. KCAA recommends avoiding fruit-producing trees or those that encourage bird nesting, as these could potentially disrupt airport operations and compromise safety standards.

Mitigation Measures:

- The proponent should fully adhere to all regulations set forth in the Civil Aviation Act No. 21 of 2013 regarding compliance with height regulations, due to the project's proximity to the runway. KCAA has the authority to determine the allowable height for the construction of the hotel. The proposed hotel building will be within the height restrictions. The building itself will be 25m high with 3m left for services. Altogether, the building will be 28m high.
- Approval from KCAA is necessary for crane usage, considering the specific location's obstacles and limitation. If the proponent intends to use cranes exceeding 25 meters in height during construction, approval for the same should be obtained from KCAA. Height approval must be obtained before construction commences to ensure compliance with aviation safety regulations;
- The proponent should avoid the use of reflective materials on the proposed development due to the site's proximity to an aerodrome. *This has been integrated in the project designs on the type of material to be used;*
- The proponent agreed to select plants and trees that do not attract wildlife or birds for landscaping. Fruit-producing trees or those that encourage bird nesting need to be avoided as these could potentially disrupt airport operations and compromise safety standards;
- Utilizing moving water features such as fountains that are a deterrent to birds;
- Bird spikes on ledges that birds might perch on.

8.4 Positive Impacts during the Operation Phase

8.4.1 Employment Creation

The proposed project will create employment in different tiers, there will be employment created for those who will be primarily involved in its implementation, supervision and maintenance and for those hired to support facilities and recreational areas. Some of the employment opportunities include: managerial positions, security personnel, solid waste recyclers and collectors, chefs, cleaners, waiters, and repair and maintenance technicians. This impact will be **high** hence a **value of 3**.

8.4.2 Optimal Use of Land

Land is a scarce resource in Kenya and the implementation of the proposed project will ensure optimal use of land to the great benefit of the country and its people. This impact will be **moderate** hence a **value of 2**.

8.4.3 Increased Commercial Viability

The establishment of the project will increase the economic viability of the area and will consequently increase the area's land value due to the potential for high returns after

development. This will attract more high-income investors into the region as well as more middle-income groups as settlers. This impact will be **moderate** hence a **value of 2**.

8.4.4 Provision of Affordable, Modern and Easily Accessible Accommodation

Jomo Kenyatta International Airport being Kenya's largest aviation facility, and the busiest airport in East Africa, is bound to receive many international visitors. The proposed project aims to provide affordable, modern and easily accessible accommodation to both local and international guests. This impact will be **moderate** hence a **value of 2**.

8.4.5 Tourism Promotion

A four-star hotel at an international airport can attract tourists and business travelers, promoting the region as a viable and luxurious destination. This can positively impact the tourism industry, attracting visitors and generating revenue. This impact will be **moderate** hence a **value of 2**.

8.4.6 Increased Revenue and Expansion of Local Businesses

Some of the local companies likely to benefit from the presence of the proposed project include; Kenya Airport Authority, the freight forwarding companies within the airport, organizations dealing with waste collection, cleaning, food supply etc. They will benefit from providing services such as; accommodation, clearing and logistics, waste collection and disposal companies, food supply, cleaning etc. One essential trickle down benefit of the project is an increased number of walk-in customers for local businesses. A hike in demand for the provision of support services created by the project will provide a wider market for local businesses which will directly translate in a surge in revenues for local businesses, boosting both the local and national economy.

8.4.7 Contributing to the Appealing Scenery of the Airport

The proposed hotel upon completion will provide potential clients, travelers, tourists and visitors with a wider pool of options to choose from. The proposed project will also improve the visual landscape of the airport, attracting more visitors. Being persuaded by the availability of world-class airport support facilities, visitors will be more willing to travel to the country and increase their stay at the airport accommodation facilities, boosting the country's economy.

8.5 Negative Impacts during the Operation Phase

8.5.1 Increased Solid Waste Generation

The hotel is expected to generate enormous amounts of solid waste during its operation phase. These will include waste papers, plastics, broken glass, kitchen waste, etc. The waste may accumulate to undesirable volumes if not segregated and disposed of regularly, thereby becoming a nuisance. The proponent intends to recycle and re-use plastic waste generated by the hotel operations. This impact will be **moderate** hence a **value of 2**.

Potential Mitigation Measures

- Use of an integrated solid waste management system (i.e. through a hierarchy of options: Reduce, Reuse, Recycling and Dispose);
- Provide a central waste receptacle strategically within the hotel and practice temperature modification to keep pests and rodents away;
- Contract a NEMA registered solid waste handler to collect, transport and dispose of the waste in legal dumpsites;
- Ensure timely disposal of solid waste from the hotel premises;
- Work with an e-waste firm to manage electronic waste should the amounts increase to a substantial quantity;
- Adopt waste reduction strategies at source such as using bulk dispensers for toiletries in addition to promoting the reuse of textile materials;
- Practice waste segregation at source;

- Undertake regular employee training programs to raise awareness about waste reduction and recycling practices;
- Perform regular waste audits to identify gaps in waste management and implement more efficient and cost-saving practices;
- Track waste generated, recycling rates and landfill diversion rates;
- Perform frequent removal of solid waste from waste receptacles to prevent bad odors and attraction of birds;
- Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006.

8.5.2 Increased Wastewater Generation

Large volumes of wastewater will be generated from kitchens, laundry activities, ablution, toilets etc. This has the potential to infiltrate and contaminate both ground and surface water sources if not well managed, posing a health risk to both human beings and animals. This impact will be **moderate** hence a **value of 2**

Mitigation Measures

The proponent intends to put up a grey water treatment plant to treat grey water. The Water can then be re-used for irrigation and to flush toilets. The hotel will also have a connection to the Nairobi County Public Sewer System.

- Regular inspection and maintenance of internal sewer system;
- Adopt more efficient use of water resources in order to reduce of overall amount of waste water generated by the facility.
- Comply with the provisions of Environmental Management and Coordination Water Quality regulations, 2006.

8.5.3 Air Pollution from Emissions

Potential emissions from the proposed project will include hydrocarbon emissions from fuels-based machinery such as generators, lawn mowers among others and kitchen fumes that release particulate matter into the environment. This impact is anticipated to be **minimal** therefore is given a score of **1**.

Mitigation Measures

- Installation of ducted kitchen extractors.
- Use of unleaded premium petroleum products that release less harmful substances into the atmosphere.
- Secure the proposed project site with a proper fence to minimize air pollution effects;
- Regular maintenance and servicing of generators;
- Conduct Annual Stack emission monitoring and testing for the generators;
- Adhere to all the provisions of EMCA (Air Quality) Regulations 2014 regarding management of air emissions such as limiting emissions to permissible levels and standards.

8.5.4 Increased Pressure on the Existing Resources

The expected increase in population will increase pressure on existing infrastructure, utilities and social amenities in the area. The airport is said to be grappling with water shortage. The establishment and operation of the hotel will increase the strain on this scarce resource. An increased demand for energy is also anticipated. This impact will be **moderate** hence a **value of 2**.

Potential Mitigation Measures

The proponent will put in place the following waste management, energy and water conservation strategies:

- a) Water Conservation System;** The development will make use of low flow water saving water conditioning systems and brassware. The proponent will consider installing dual flush toilets and sensor taps.
- b) Solid Waste Recycling and Recovery System;** The proponent will practice waste segregation at source and clearly label the bins for the different waste streams such as paper, cardboard, plastic, metal and metal cans, glass bottles, food waste etc. The proponent will work with licensed waste companies to collect the separated waste, recycle and dispose of it accordingly.
- c) Recycling of Liquid Waste:** The proponent plans on installing a (100 cubic meters) Grey water treatment plant. Treated water from the plant will be used to flush toilets and to irrigate the landscaped areas.
- d) Energy Conservation:** The proponent will put in place the following measures to reduce energy consumption:
 - Solar panels and variable refrigerant flow systems with heat recovery will be used for domestic hot water production.
 - LED lighting and lighting controls will be installed for low energy consumption.
 - A Building Management System (BMS) for Mechanical, Electrical and Plumbing (MEP) systems monitoring and operation optimization will be installed.
- e) Use of Renewable Materials:** The proposed development will incorporate the use of the following renewable materials: Organic fabrics, bamboo, sustainable wood, cork, reclaimed materials and stone.
- f) Water Supply:** The proponent intends to drill a borehole to supplement the water supply from NWSC and the Grey Waste Water Treatment Plant.

Further, the proponent should:

- Incorporate adequate water storage tanks for a sustainable and consistent supply of water within its premises.
- Identify activities and departments that consume high amounts of water and electricity and take appropriate measures to reduce consumption.
- Install a discharge metre at the various water outlets to monitor water use.

8.5.5 Micro-Climate Modification

Though the project area is quite small to cause any considerable microclimate change it bears the potential of adding to the cumulative effects of other infrastructural development that emit GHGs. Change in land surface from natural vegetation to man-made built landscape will have an effect on the area's microclimate by reducing the amount of evapo-transpiration from the vegetation in the area which are also a GHG sink.

The microclimate will also be modified by the project's heat producing activities and equipment and machinery including vehicles, electronics, generators, water pumps, air conditioning etc. This impact will be **moderate** hence a **value of 2**.

The proponent plans on landscaping the site with indigenous species/trees and plants.

Recommended Mitigation Measures include:

- Using sustainable drainage systems that mimic the natural percolation of water into the soil.
- Using efficient equipment that emit little or no waste heat.
- Making use of photo catalytic materials containing titanium dioxide in the designing of the hotel's pavements surfaces so as to reduce air pollution created by traffic.
- Adopt the use of Green Building Technologies

8.5.6 Oil Depot Risk

The Kenya Pipeline Company, Embakasi Depot is located approximately 800 Metres North West of the proposed project site. Oil terminals store large amounts of hazardous substances posing a serious threat to people and the environment, especially in the case of improper design, construction, management, operation or maintenance. An accident at an oil terminal may result in uncontrolled spills, fires and explosions which can cause major environmental catastrophes and the loss of human life. Highly flammable substances, open flames and non-insulated electrical equipment can cause explosions resulting in losses at catastrophic levels. This impact will be **moderate** hence a **value of 2**.

Mitigation Measures

- Properly equip the facility with automated fire detection systems and fire suppression equipment;
- Place the firefighting equipment in strategic places within the building;
- Provide periodic training programs on fire safety, Occupational Health and Safety (OHS) and first aid and keep records of trained personnel.;
- Conduct mock drills periodically. Drills serve two basic functions, namely training and testing. While drill provide an effective means of training in response procedures, their primary purpose is to test the adequacy of the emergency management system and to ensure that all elements are fully capable of responding to and managing a likely emergency situation;
- Develop an Emergency Response and Disaster Management Plan. Anticipating and planning for various contingencies is crucial for ensuring the success of any emergency response actions in an actual Emergency Situation. Hence, periodic reviews of Emergency Response Plans are essential. The emergency Response Plan should be updated based on findings of mock drills;
- Marking and checking all fire escape routes;
- Having a marked Fire Assembly Point at the site;

8.5.7 Occupational Health and Safety (OSH) Risks

- Several OHS risks will arise as a result of either the activities, equipment and materials during the operational phase. These include but not limited to: Slippery floors from washing with soaps and detergents, oil spills (both fuel and kitchen oil), burns, cuts, moving parts, Barriers, LPG Explosions, fuel, electricity and electrical equipment such as kettles, cookers etc

A plan to manage the OHS risks during this stage will also be important and necessary. This plan may simply be an extension of the one developed for the construction phase and can be further extended to the decommissioning phase. This impact will be **moderate** hence a **value of 2**.

Recommended Mitigation Measures

- Provision of PPE to all personnel working in potentially hazardous areas or with potentially hazardous equipment.
- Replacing worn-out PPE.
- Placing signs and cautions to alert people of hazards such as slippery floors.
- Servicing equipment and machines to ensure efficiency.
- Providing firefighting equipment and maintaining them to ensure they are fully functional.
- Delineating fire and emergency assembly points and creating awareness to ensure all people at the hotel are aware of them, e.g. through the use of maps on elevators, staircases etc.
- Putting in place an Emergency Response Plan and creating awareness around it.
- Providing adequate storage for hazardous and flammable substances and controlling access to them.
- Performing emergency drills on a frequent basis, setting benchmarks for response and evaluating performance to ensure continuous improvement of response and preparedness.
- Compliance to the Occupational Safety and Health Act 2007

8.5.8 Increased Generation of Noise

The project's activities are expected to generate noise from various sources such as diesel generators. Mobile sources of noise will mainly include cars and trucks ferrying goods to the hotel. Although the noise levels emitted during this phase will be less compared to the noise generated during the construction phase, the impact will be felt more as the number of occupants will be more compared to the occupants during the operational phase.

The proposed project is also located within a specialized freight area that is busy and noisy. Based on the survey conducted, the noise in the environment within the proposed project site is majorly caused by the landing and takeoff of airplanes, continuous movement of cargo, operation of dollies, lorries and trucks delivering materials. These activities will impact the operation of the hotel by causing disturbance to guests seeking accommodation at the facility.

This impact will be high hence a value of 3.

Mitigation Measures

- Ensure all spaces are acoustically treated to ensure sound transmission is kept to a minimum e.g. in rooftop bars, all day dining restaurants etc.
- Ensure regular maintenance for equipment e.g. HVAC, Generator etc.
- Ensuring that sound reduction strategies are utilized on equipment e.g. use of sound deflectors, mufflers etc.
- Ensure the employed sound insulation technologies work effectively towards minimizing high noise levels from the external environment in the vicinity.
- Erecting signs notifying occupants of noisy activities and areas. Conducting all noisy activities during the day when permissible levels are higher.
- Provision of PPE such as ear plugs for employees working in noisy conditions or with noisy equipment.
- Using equipment with low noise ratings or noise reduction technologies such as silencers for the generators. The proponent plans on using generators with acoustic enclosures.

8.5.9 Social and Cultural Disruptions

An influx of tourists will potentially lead to shifts in the local culture. Local businesses may be forced to adapt to foreign practices to cater for tourist preferences which may potentially dilute traditional habits. Cultural conflicts may be experienced due to the difference in cultural norms

between local residents and tourists. This might involve issues related to dress code, noise levels and/or public behavior. The impact is anticipated to be **moderate** and given a score of **2**.

The proponent shall use a thoughtful approach that will balance economic development with community well-being. The following are the measures to be taken:

- Educate hotel staff and guests about local customs, cultural norms and responsible behaviour to ensure respectful interactions.
- Development of a comprehensive response plan to address any unexpected social or cultural disruptions promptly and effectively, ensuring the safety and well-being of both guests and residents.

8.5.10 Security Threats

The project's potential to attract both local and international clientele will translate to social issues such as insecurity including armed robbery and terrorism. This will negatively impact the national security of the country considering the critical role of airports and especially JKIA as a key player in the aviation industry. This impact is expected to be **moderate** and hence given a score of **2**.

Mitigation Measures

- Install adequate security measures such as CCTV devices, security alarms systems, electric fenced perimeter wall etc.
- Employ well trained and adequately equipped security guards with ability to man the hotel premises and to respond to existential security threats.
- Ensure proper screening of all visitors including capturing and archiving of personal details.
- Collaborate with all security apparatus within the airport including Kenya police and other private security organizations, in ensuring that security at the hotel and airport is enhanced at all times.

8.5.11 Traffic Congestion

There is potential for traffic snarl-ups, especially at the hotel's entrance and the connecting main road interception which could slow down vehicular traffic and cause accident events. Based on the Traffic Impact Assessment Report (Annex 13) the proposed development will generate approximately 12 trips at the peak hour. The trips from the development will have minimal impact on Level of Service (LOS) for the Right and Left movements at the peak hour on Third Freight Avenue / Freight Lane junction

This impact is anticipated to be **moderate** therefore is given a score of **2**.

Mitigation Measures

- Ensure fast screening and access of all vehicles entering the hotel premises to prevent traffic snarl-up at the entry point.
- Ensure that appropriate road signage is positioned strategically at the entry point alerting oncoming drivers of route diversion into the hotel's premises.
- Ensure that all drivers making use of the hotel parking adhere to all traffic rules to minimize incidents and accidents.

8.5.12 Hiked Competition with Similar Existing Projects

A new entrant will definitely create competition among the existing Four-Star Hotels such as Four Points by Sheraton Airport Hotel and Crowne Plaza Airport Hotel as they compete for clients. Unhealthy competition is detrimental to the provision of quality accommodation services to clients, especially in the event of some players resorting to employment of cut-throat strategies to

beat the competition. The existing businesses have the potential to lose some of their loyal clients to the proposed project. This impact is expected to be **moderate** and is thus given a score of **2**.

Mitigation Measures

- Encourage diversification of services to reduce competition among related businesses targeting similar clients.
- Promote good customer service in the provision of accommodation services and other amenities to improve customer satisfaction and retention rates.
- Embrace continual improvement of services through; research, prompt resolution of customer complaints and consistent implementation of corrective measures.

8.5.13 Wildlife Strikes

The presence of wildlife (birds and animals) on and in the aerodrome vicinity poses a serious threat to aircraft operational safety. Wildlife is attracted to aerodromes because they provide; food, water, habitat and security. Wildlife strikes can cause accidents and serious incidents that cost the aviation industry billions due to aircraft damage, flight delays and other operational impacts. ICAO has been undertaking various initiatives to help countries reduce wildlife strikes. KCAA has and continues to implement these strategies to prevent and mitigate the risk of wildlife strikes to air-crafts. This impact is expected to be **moderate** thus is given a score of **2**.

Mitigation Measures

Given the project's proximity to the flight path and airspace, there is need to put in place preventive measures to avoid attracting wildlife to the aerodrome. The proponent plans on implementing the following measures:

- Regular collection and disposal of waste as accumulated waste will attract birds and wildlife.
- Avoid planting fruit-producing trees to deter birds.
- Sealing open water points to deter wildlife.

8.6 Positive Impacts during the Decommissioning Phase

8.6.1 Rehabilitation

Upon decommissioning, there is potential of to rehabilitate the site through replacement of soil and vegetation which will lead to improved visual quality of the area. Alternatively, a new project may be commissioned at the site. This impact will be **moderate** hence a **value of 2**.

8.6.2 Employment Opportunities

There will be employment opportunities created for staff who will be involved in demotions, loading and transportation of materials. This impact will be **minimal** hence a **value of 1**.

8.6.3 Recycling of Usable Materials

Not all the demolished materials will go to waste as some may be used to backfill quarries and roads. This impact will be **moderate** hence a **value of 2**.

8.6.4 Reduced Competition within Hotel Accommodation Providers

Decommissioning this project will create a room for existing hoteliers to access clients who were previous served by the facility lowering competition among existing hotels. This impact will be **moderate** hence a **value of 2**.

8.6.5 Relief for Utility Resources Such as Water, Electricity and Land

There will be a significant reduction in the demand for water and energy resulting in conservation of scarce resources. The vacant land may be used for other development needs or left vacant, allowing for ample green spaces. This impact will be minimal hence a **value of 1**.

8.6.6 Leeway to Establish New Development Projects

The decommissioned project will avail land for other uses impacting positively on sustainability. This impact is minimal hence the **value of 1**.

8.7 Negative Impacts during the Decommissioning Phase

8.7.1 Generation of Demolition Waste

Demolition of the project's buildings and related infrastructure will result in large quantities of solid waste. The waste will contain materials such as blocks of concrete, metal, drywall, wood, glass, paints, adhesives, sealants and fasteners. Although demolition waste is generally considered less harmful to the environment, there is evidence that large quantities of such waste may lead to the release of certain hazardous chemicals into the environment. The generally non-toxic chemicals such as chloride, sodium, sulphate and ammonia, which may be released as a result of leaching, are known to lead to the degradation of groundwater quality. This impact will be **minimal (value of 1)**.

Mitigation Measures

- Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006.
- Conduct a thorough environmental audit of to ensure proper disposal of demolition waste.
- Engage in community outreach programmes to address post-decommissioning impacts on local communities.

8.7.2 Air Pollution

The processes, material and equipment during decommissioning emit air pollutants including oxides of carbon, nitrogen and sulphur from the burning of fossil fuels or particulate matter from cutting and bending of materials such as steel, glass, shavings, bricks as well as movement of soil. These pollutants pose risks to human health and the environment by polluting the air, water and soil as well as causing respiratory diseases, skin disorders and allergies. Large quantities of dust generated during demolition works will affect workers demolition staff as well as the neighbouring enterprises. This impact will be **minimal (value of 1)**.

Mitigation Measures

- Truck drivers to maintain low speed to avoid raising dust.
- Employees to be provided with dust masks and goggles.
- Installation of dust trappers around the site to prevent dust from spreading in the neighbourhood.
- Sprinkling dusty areas including access roads with water to suppress dust levels.
- To the extent possible, undertaking earth works in damp conditions to reduce dust emissions.
- Design material management equipment and batching plants in a way that generate low levels of dust and emissions.
- Cover trucks used in transportation of soil and other solid materials from the site to prevent the spreading of dust into the surrounding areas.

8.7.3 Noise and Vibration

There will be a considerable increase in noise generation during demolition. The main sources of noise will be from mechanized equipment, cars and trucks and civil works.

This impact will be **minimal (value of 1)**.

Mitigation Measures

- Workers should be provided with appropriate Personal Protective Equipment (PPE) such as ear muffs and ear plugs and their use enforced.
- Inform immediate neighbors of potential noise levels to reduce anxiety and complaints.
- Place warning signs and mark locations with potential high noise levels.
- Consult and educate stakeholders before blasting. Blasting must follow required standards.
- Consult neighbors and schedule demolition activities during the day and at off-peak hours as agreed.

8.7.4 Occupational Safety and Health Risks

The occupational hazards and risks at this phase of the project will be similar to the ones faced at the construction phase of the project. Additional hazards like workers stepping on sharp objects may be introduced. This impact will be **minimal (value of 1)**.

Mitigation Measures

- Ensure workers are properly instructed and supervised;
- Establish a Health and Safety Plan (HASP) that covers the scope of works carried out at this phase;
- Appoint/maintain a trained health and safety team for the duration of the works;
- Provide workers with adequate and appropriate PPE;
- Provide workers with adequate drinking water and breaks;
- Embrace modern technology in selection of equipment, machinery and tools so as to minimize health and safety hazards;
- Ensure all other applicable safety standards according to the provisions of OSHA 2007, are adhered to.

8.7.5 Loss of Jobs

Majority of the jobs created during the construction and operational phase will be terminated. This can have adverse effects on the livelihoods of workers and their families. This impact will be **high (value of 3)**.

Mitigation Measures

- Implement a responsible and transparent communication strategy to inform workers well in advance about the decommissioning of the project and the potential of them to lose jobs.
- Work closely with local employment agencies to assist affected workers in finding alternative employment opportunities, potentially in other local projects or industries.
- Consider providing training programs or skills development initiatives to enhance the employability of affected workers.
- Engage with local community leaders and authorities to explore alternative economic opportunities that can absorb the workforce affected by the decommissioning.

8.7.6 Loss of Business Opportunities

The decommissioning of the project will result also lead to loss of numerous opportunities that local businesses benefited from. This impact will be **moderate (value of 2)**.

Mitigation Measures

- Issuance of prior notices local businesses.
- Maintain ties with local businesses and socioeconomic communities and provide information on the availability of new opportunities for business collaborations.

8.7.7 Loss of Revenue for the Developer

Decommissioning the project will have a huge financial implication on the developer. This impact will be **high (value of 3)**.

Mitigation Measures

- The hotel operator to find a niche market.
- Seek advice on potentially lucrative business ideas from the established business community and individuals that are part of the developer's business network.

8.7.8 Potential Theft of Reusable Decommissioned Materials

This phase will generate a huge pile of unusable and reusable materials which will attract thieves looking to making quick gains from the sale of scrap metals and other recyclable waste. This impact will be **minimal (value of 1)**.

Mitigation measures

- Ensure the site is secured on a continuous basis until the end of the decommissioning stage.
- Sort out all reusable waste materials and equipment and sell them off or donate them before disposing of the rest of the demolition waste debris.
- Discourage idling and prohibit unauthorized access to the site during the decommissioning and rehabilitation phase.

9 CLIMATE CHANGE RISK AND VULNERABILITY ASSESSMENT

9.1 Introduction

The study was guided by the **Climate Change Act, 2016 and its amendment of 2023**. This Act guides the development, management, implementation and regulation of mechanisms to enhance climate change resilience and low carbon development for sustainable development in Kenya.

The global challenge posed by climate change threatens the sustainability of business operations. The proposed project aims to address these challenges through the implementation of effective mitigation and adaptation measures. The key objectives of the study drawn from the Act are to:

- a) Mainstream climate change responses into development planning, decision making and implementation;
- b) Build resilience and enhance adaptive capacity to the impacts of climate change;
- c) Formulate programmes and plans to enhance the resilience and adaptive capacity of human and ecological systems to the impacts of climate change;
- d) Mainstream and reinforce climate change disaster risk reduction into strategies and actions of the proposed development;
- e) Mainstream inter-generational and gender equity in all aspects of climate change responses;
- f) Promote low carbon technologies, improve efficiency and reduce emissions intensity by facilitating approaches and uptake of technologies that support low carbon, and climate resilient development;
- g) Provide guidance in the development and implementation of carbon markets and non-market approaches in compliance with international obligations and;
- h) Mainstreaming the principle of sustainable development into the planning for and decision making on climate change response.

The Study was also guided by **KAA Environmental Sustainability Policy** due to the location of the proposed project, i.e., within JKIA. The key areas of action from the policy include; Energy use and reduction of the airport carbon footprint; Waste management; Community relations; Noise, Air Quality and Water management, Transport and surface access; and Preservation of biodiversity.

9.2 Climate Change Risk and Vulnerability Assessment Methodology

Though the project area is quite small to cause any considerable microclimate change, it bears the potential of adding to the cumulative effects of other infrastructural development that emit Green House Gases (GHGs). Change in land surface from natural vegetation to man-made built landscape will have an effect on the area's microclimate by reducing the amount of evapo-transpiration from the vegetation in the area which are also a GHG sink. The microclimate will also be modified by the project's heat producing activities and equipment and machinery including vehicles, electronics, generators, water pumps, air conditioning etc.

The ESIA expert assessed the influence of the proposed project on climate change, the impacts of climate change and vulnerability within and around the proposed project area of influence and highlighted the possible adaptation and mitigation actions. The focus was on flora and fauna, population, biodiversity and water resources. Stakeholder Engagement and consultation with local businesses and other stakeholders in the initial stages to understand specific climate-related concerns were undertaken.

Data & Baseline Establishment: Climate data involved the review of historical and projected climate data for Embakasi Sub County, Nairobi County (temperature, precipitation, sea-level rise, etc.). Vulnerability assessment baselines were determined by observation and feedback from stakeholders on which parts of the environment and society are most vulnerable to climate change.

With regards to climate change impact assessment, both direct and indirect impacts were determined by both literature review and stakeholders view on how climate change may directly or indirectly affect the project, and how the project may exacerbate or mitigate local vulnerabilities. Analysis was done to ascertain the effect of climate change scenarios and understand how they might interact with the project.

9.3 Analysis of Contribution of the Project to Green-House Gas Emissions

United Nations Framework Convention on Climate Change (UNFCCC) which is operationalized by the Kyoto Protocol indicate that GHGs include; carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro fluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphury hexafluoride (SF₆) The calculation of GHG emissions is considered to be a good index of the total effect of energy usage on the environment. Conventional construction methods are environmentally unfriendly due to the large resource consumption, waste production, and GHG emissions. The carbon emissions attributed to buildings are considered a leading factor in global warming. With the emergence of the concept of sustainable construction and development, the construction industry is keen to limit its greenhouse gas (GHG) emissions, since it is the leading contributor that produces the global GHG emissions.

GHGs come from all life-cycle phases of a building. GHG emissions sources in the construction stages range from construction supplies, fabrication and transportation, construction equipment, energy usage, workers transportation, and waste emissions from the construction works. The production and use of materials such as cement, steel, and aluminum have a significant carbon footprint.

The hospitality industry plays a significant role in the global carbon footprint, with hotels, resorts, and restaurants contributing to environmental challenges such as greenhouse gas emissions, energy consumption, and water waste. From the building life cycle perspective, energy use in the building operation phase is 4–6 times greater than in the hotel's construction phases (Rosselló-Batlle et al., 2010). Cooling systems, lighting, and water heating are the three major energy consuming factors in hotels during the operational phase. However, there is a growing awareness and demand for sustainable practices within the industry.

The proposed project is expected to use the following equipment that are likely to emit Green House Gases: Compacting equipment, conveying equipment, earth-moving equipment, excavation equipment among others.

The proposed Airport Hotel will also have a 2x550kVA Prime rated Diesel Generator to supplement power supply during blackouts in the operational phase. Diesel generators produce: Particulate Matter (PM), Volatile Organic Compounds (VOCs), Nitrous Oxide (NO_x) among other harmful pollutants that create smog and exacerbate respiratory conditions. However, technologies like Selective Catalytic Reduction (SCRs) and Diesel Particulate Filters (DPFs) are recommended to help improve their emissions.

9.4 Integration of Climate Change Vulnerability, Adaptation and Mitigation Assessment into the ESIA Studies

The direct impacts of climate change include water unavailability, which is manifested through drought, floods and water temperature. Climate change can increase the frequency and severity of droughts, which can affect the availability of water resources

Increased frequency of extreme precipitation events can lead to flooding, which might affect the construction timeline and the safety of the infrastructure. More frequent and severe storms can affect the infrastructure and safety protocols, necessitating robust and resilient construction strategies.

The indirect impacts of climate change include supply chain disruptions by disrupting transportation networks, affecting the supply chains and potentially increasing the cost and time required for construction.

9.4.1 Assessment of Energy Conservation Measures for the Project Cycle

The Consultant carried out this assessment mainly by evaluating the energy needs across the project life cycle, possible sources of the required energy, possible measures and appropriate technologies to lower or minimize energy consumption. The consultant also relied on the understanding of the design of the power plant and proposed applicable technologies.

The construction of the project will be a net generator of greenhouse gas. Construction vehicles and equipment will generate greenhouse gases due to the burning of fossil fuels and clearing of vegetation which will result in the loss of sequestering capacity for carbon dioxide.

9.4.1.1 Adaptation Technologies Employed by the Proponent to Reduce Energy Consumption

The proponent will put in place the following measures in a bid to reduce energy consumption:

- Solar panels and variable refrigerant flow systems with heat recovery will be used for domestic hot water production.
- LED lighting and lighting controls will be installed thus saving up to 50% of energy on lighting.
- HVAC systems will be of inverter type and utilised Variable Refrigerant Technology thus consuming less energy.
- A Building Management System (BMS) for Mechanical, Electrical and Plumbing (MEP) systems monitoring and operation optimization will be installed.

9.4.1.2 Mitigation Measures

Construction Phase

- Integrate the use of the natural lighting in the project design;
- Ensure use of clean fuels in vehicles and machinery;
- Switch off engines for vehicles and machinery when not in use;
- Revegetate all areas safe from any development works at the site with local vegetation to increase local sequestering capacity for greenhouse gases.
- All construction machinery should be regularly and promptly maintained and serviced in accordance with the manufacturer's specifications to minimize the generation of hazardous gases;
- Fueled construction equipment to be used where feasible with environmentally friendly fuels such as low-sulphur diesel;

- All raw materials where possible must be sourced as close as possible to the construction site thus reducing emissions from vehicular traffic;
- Embrace modern construction technology that suppresses hydrocarbons emissions;
- Regularly monitor air quality levels to ensure compliance with Environmental Management and Coordination (Air Quality) Regulations, 2014. The measurements should be done at different weather and seasons to ensure that all the weather patterns are taken into consideration during the monitoring process.

Operational Phase

- Maximize the use of natural lighting in the facility.
- Consider the use of sensors to monitor HVAC systems to save on time and reduce maintenance requirements.
- Automate the adjustment of room temperatures and switching off of lights and TVs when guests leave their rooms.
- Use of unleaded premium petroleum products that release less harmful substances into the atmosphere.
- Use of generators with low emissions and ensure regular maintenance & servicing of generators to reduce emissions;
- Conduct Annual Stack emission monitoring and testing for the generators;
- Apply for and obtain an Air Quality emission License;
- Adhere to all the provisions of EMCA (Air Quality) Regulations, 2014, regarding management of air emissions such as limiting emissions to permissible levels and standards.

9.4.2 Assessment of Water Conservation Measures for the Project Cycle

The Consultant carried out this assessment mainly by evaluating the water needs across the project life cycle, water sources, possible measures and appropriate technologies to lower or minimize water consumption. The construction phase of the project will entail the use of large amounts of water usage. The operational phase will even require consumption of larger amounts of water usage in cleaning, cooking, flushing toilets and for the swimming pool. The proponent intends to source it's supply from an onsite borehole or drill another one if need be and supplement it with supply from the Grey Treatment Plant and Nairobi Water and Sewerage Company (NWSC) Supply.

9.4.2.1 Adaptation Measures Employed by the Proponent to Reduce Energy Consumption

- Installation of 100 cubic meters Grey water treatment plant. Treated water from the plant will be used to flush toilets and to irrigate the landscaped areas.
- Installation of water efficient fittings and equipment such as shower heads, faucets, and washing machines; water efficient irrigation systems and use of recycled water for irrigation and flushing toilets.

9.4.2.2 Mitigation Measures

- Incorporate adequate water storage tanks for a sustainable and consistent supply of water within its premises;
- Identify activities and departments that consume high amounts of water and electricity and take appropriate measures to reduce consumption;
- Install a discharge meter at the various water outlets to monitor water use;
- Consider harvesting of rain water;
- Sensitization of staff and hotel guests on efficient water use.

9.4.3 Assessment of Waste Management Measures for the Project Cycle

Solid waste will consist of construction debris, cement bags, wood, broken glasses, containers, metal, sharp objects such as nails, organic waste, paper, and plastic among others during the development's construction phase

The hotel is expected to generate enormous amounts of solid waste during its operation phase. These will include; waste papers, plastics, broken glass, kitchen waste, etc. The waste may accumulate to undesirable volumes if not segregated and disposed of regularly, thereby becoming a nuisance. The proponent intends to recycle and re-use plastic waste generated by the hotel operations.

9.4.3.1 Adaptation Measures:

Spaces will be provided on site for separation of waste at source and recycling of all plastic wastes generated by the facility will be practiced. The appointed waste collection company will be awarded a contract on the basis that they collect the separated waste in trucks that maintain separation, and have an extensive sorting site. Plastic waste generated by the facility will be recycled and reused.

9.4.3.2 Mitigation Measures:

- Use of an integrated solid waste management system (i.e. through a hierarchy of options: Reduce, Reuse, Recycle and Dispose);
- Adopt waste reduction strategies at source such as using bulk dispensers for toiletries in addition to promoting reuse of textile materials;
- Undertake regular employee training programs to raise awareness about waste reduction and recycling practices;
- Perform regular waste audits to identify gaps in waste management and implement more efficient and cost-saving practices;
- Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006.

9.4.4 Flooding Risk

As drainage areas become increasingly impervious due to urban development, storm water runoff volumes, flows, and velocities increase, while base groundwater flows decrease. Rain water that would otherwise be “soaked” by the plants and soils is instead directed to drainage systems and nearby streams. Human activities in the city also generate increased pollutant loads, ranging from heavy automobile traffic to the use of various chemicals. These pollutants, as well as the deposition of atmospheric pollution from outside the city, build up on impervious surfaces during dry weather. Rain then “washes” these pollutants into the city's drainage channels, streams, and rivers.

Excavation of soils to construct foundations may loosens soil which may be washed alongside any poorly disposed waste on site into storm drains, clogging them. The loose soil is also likely to increase sediment load in storm water. Together with the loss of flora, changing the characteristics of the project site from its present state to a more built state and changing the soil's characteristics, will lead to a change in the water regime at and around the project site. This is because the built areas will increase run-off while reducing the percolation of water into the ground and thereby also changing the sub-surface hydrology.

By overloading the capacity of storm sewers, un-managed storm water runoff is responsible for increased combined sewer overflow events and adverse downstream impacts such as flash flooding, channel erosion, surface and groundwater pollution, and habitat degradation. With the recent heavy rains experienced in the month of March and April, Jomo Kenyatta International Airport as well as the proposed project site is one of the areas in the city that experienced flooding.

The proposed project will however not have any impact on surface run off compared to the existing condition as the ground coverage allows for sufficient percolation of ground water. The site is also not at risk of flooding as it is significantly higher than the areas that flooded and is not near any water bodies. No major issues will be anticipated from the proposed development since it has no basement level.

9.4.4.1 Mitigation Measures

The design of the hotel and courtyard to be specific allows for water to seep back into the aquifer. The proposed hotel will also have lots of green spaces to reduce surface runoff. The below additional mitigation measures are recommended to reduce surface runoff

- The drainage system should ensure that surface flow is directed suitably into the public drains provided to control flooding within the site;
- Installing cascades to break the impact of water flowing into the drains;
- Controlling earthworks and ensuring the management of excavation activities;
- Drainage channels should be installed in all areas that generate or receive surface water such as; car parking, driveways and along the building block edges of the roofs;
- The channels should be covered with gratings or other suitable and approved materials to prevent the occurrence of accidents and entry of dirt that would compromise the flow of run-off;
- The channels should be designed with regard to the peak volumes such as periods or seasons when there is a high intensity of rainfall;
- The drainage channels should ensure the safe final disposal of run-off /surface water and should be self-cleaning which means it should have a suitable gradient;
- Existing trees can be preserved, or new trees can be planted to reduce storm water runoff. Through the processes of evapo-transpiration and nutrient uptake, trees located on a development site have the capacity to reduce storm water runoff volumes and improve water quality. Further, through root growth, trees can improve the infiltration capacity of the soils in which they grow. Both tree planting and tree preservation can contribute to storm water management on a site.

9.4.5 Conclusion

Climate Change and Mitigation

With regards to climate change mitigation and based on project activities, measures have been proposed on how to reduce the project's greenhouse gas emissions. Similarly, different adaptation strategies have been proposed to climate change proof the project and that the ecosystem/communities are resilient to future climate change impacts (e.g., designing infrastructure to cope with floods, drought or erratic rainfall).

Monitoring and Management:

A system for climate monitoring is recommended to monitor climate parameters and their changes over time. Based on monitoring results, the project strategies should address unforeseen climate change impacts. Regular updates and engagements with local business communities and other stakeholders about the findings and changes made in response to climate change have been recommended. Additionally, regular reviews have been recommended to assess the latest climate change data to ensure that the project can withstand the challenges of climate change and contribute positively to the resilience of both the environment and society.

10 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

10.1 Introduction

Environmental and Social Management Plan (ESMP) for developing projects is given to provide a logical framework within which identified negative environmental impacts can be mitigated and monitored. In addition, the ESMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures and monitoring can be done within budget.

10.2 The Environmental and Social Management Plan (ESMP)

Based on the policy outlined in the preceding sections, this ESMP has been developed to provide a basis for evaluation of the project with reference to environmental management regulations both locally and internationally for the life of the proposed project. Since key factors and processes may require change, considerable provisions have been made for dynamism and flexibility of these plans. As such the ESMP will be subject to a regular regime of periodic review.

The table below forms the basis of the ESMP for the construction and operational phases of the proposed project. In general, the ESMP outlines the potential safety, health and environmental risks associated with the project and details all the necessary mitigation measures as well as the person(s) responsible and the budgetary element for implementing and monitoring such measures. The ESMP will be used as a reference point in annual environmental audits.

10.3 Construction Phase Environmental and Social Management Plan

The purpose of the Environmental and Social Management plan is to ensure the proponent has a predetermined set of compliance guidelines to ensure that the project is carried out safely and that environmental concerns and laid down guidelines are observed. It also ensures that social and environmental impacts and risks identified during the ESIA process are effectively managed during the construction phase of the Project. The ESMP specifies the mitigation and management measures to which the proponent is committed to and shows how the project will mobilize organizational capacity and resources to implement these measures.

Table 10-1: ESMP for the Construction phase

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
Vegetation clearing	<ul style="list-style-type: none"> Clearly delineate areas for land preparation/other activities in the field to prevent loss of vegetation outside of designated works areas Landscape and plant vegetation in all open areas after the completion of the project. The contractor should develop a landscaping plan that shall not be limited to the site but inclusive of the project surrounding area. Use soil stockpiles to level rugged earth roads sections and to fill quarries and borrow pits. Stockpiles should not be allowed to become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation. Soil conservation measures should be taken to the stockpiles to prevent erosion. Soil stockpiles shall not be higher than 2.5 m or stored for a period longer than 2 months. Stabilize the excavated areas to prevent caving in of soil. 	Contractor/Proponent	Throughout the Construction Phase	<p>No additional costs.</p> <p>Costs will be within the construction budget</p>
Increased Noise and vibration generation	<ul style="list-style-type: none"> Plan the site clearance and construction activities in consultation with the neighbouring community so that activities with the greatest potential to generate noise and vibration are planned accordingly; Consult and inform the immediate stakeholders before undertaking a blast (if any). Any blasting should be supervised and within the established regulations from the Geology and Mines Department; Install portable barriers to shield compressors and other small stationary equipment where necessary; Using noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities (if any), exhaust muffling devices for combustion engines and vibration dampers; 	Contractor/Proponent	Throughout the Construction Phase	1,500,000

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> ▪ Ensure that all vehicles and construction machinery are well maintained and regularly serviced to avoid excessive noise generation; ▪ Provide appropriate protective gear including ear corks and ear muffs to all construction workers working in noisy sections and enforce application at all times during the construction works, ▪ Sensitization of drivers handling construction vehicles and machinery to switch off engines or machinery that are not being used; ▪ Ensure sound insulation technologies employed during the construction phase work effectively towards minimizing high noise levels from external environment in the vicinity. ▪ Limit pickup trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use; ▪ The delivery of construction materials and noisy activities should be done preferably at off-peak hours to minimize high level noise impacts; ▪ Construction activities will be done during daytime to minimize noise disturbances to neighbors at night. ▪ Ensure sound insulation technologies employed during the construction phase work effectively towards minimizing high noise levels from external environment in the vicinity. ▪ The contractor will endeavour to comply with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009. 			
Increased Solid Waste Generation		<ul style="list-style-type: none"> ▪ Use of an Integrated Solid Waste Management System (ISWMS); through a hierarchy of options including source reduction, recycling, composting and reuse; ▪ Efficient estimation and use of building material to reduce waste and recycling/reuse where feasible; ▪ Ensure daily removal of solid waste materials from the construction sites to avoid unnecessary accumulation at the locations; 	Contractor	Throughout the Construction Phase	1,500,000

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> ▪ The contractor to consider dumping the excavated soils in abandoned quarries. ▪ Engage the services of NEMA licensed waste handlers to collect and transport waste to designated disposal sites and track/monitor the excavated material to the disposal point; ▪ Management of all paint materials confirmed of containing lead as a hazardous waste; ▪ Choose building materials that are least polluting and environmentally sustainable; ▪ Provide a central Waste receptacle; ▪ Provide mechanisms to segregate waste at source to enable recycling; ▪ Consider reselling reusable or recyclable waste materials such as paper, cardboard, plastic etc. to local waste recyclers; ▪ Develop a comprehensive waste management plan for the construction period guided by the ESMP and the NEMA Waste Management Guidelines; ▪ Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006. 			
Increased Waste water Generation		<ul style="list-style-type: none"> ▪ The contractor should install mobile toilets separate for males and females that are well-maintained and with adequate hand washing facilities; ▪ Water containing pollutants such as cement, concrete, lime, chemicals, and fuels should be discharged into a conservancy tank for removal from the site; ▪ Ensure that the proposed project does not delay after the commencement of construction activities and it is built in record time to avert potential aviation control risks through bird attraction sites brought about by stagnant pools of rainwater; ▪ Control of water usage during construction activities to minimize wastage; 	Contractor	Throughout the Construction Phase	1800,000

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> Potential Pollutants of any kind should be contained and sustainably managed to ensure the water table is not endangered; Promote recycling of wastewater and storm-water where feasible; Comply with the provisions of the Environmental Management and Coordination (Water Quality) Regulations, 2006. 			
Air Pollution		<p>Impacts due to Dust:</p> <ul style="list-style-type: none"> To the extent possible, undertake earthworks in damp conditions to reduce dust emissions; Regular sprinkling of water on work areas to prevent fugitive dust violations. Use of dust nets/screens around the construction site to contain and arrest dust Materials management and batching plants associated with the project should be designed for low dust and emissions; Minimize exposed areas through scheduling of construction activities to enable dust control; Onsite dirt piles or other stockpiled material should be covered, windbreaks installed, water and/or soil stabilizers employed to reduce wind-blown dust emissions; All staff employed at the construction site and visitors to be provided with dust masks when required; Collecting storm water and using it to dampen the construction site; Enforce onsite speed limit regulations for construction vehicles along access routes; Restricting heights from which materials are to be dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading. <p>Impacts due to Vehicular Emissions:</p> <ul style="list-style-type: none"> All construction machinery should be regularly and promptly maintained and serviced in accordance with the 	Contractor	Throughout the Construction Phase	1,550,000

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<p>manufacturer's specifications to minimize the generation of hazardous gases;</p> <ul style="list-style-type: none"> Drivers should be instructed on the benefits of driving practices that reduce both the risk of accidents and fuel consumption, including measured acceleration and driving within safe speed limits; Replacing older vehicles with newer, more fuel-efficient alternatives; Discourage machine/equipment operators and drivers of construction vehicles from unnecessary revving and idling; Sensitize construction drivers and machinery operators to switch off engines when not in use; Fuelled construction equipment to be used where feasible with environmentally friendly fuels such as low-sulphur diesel; All raw materials where possible must be sourced as close as possible to the construction site thus reducing emissions from vehicular traffic; Embrace modern construction technology that suppress hydrocarbons emissions; Regularly monitor air quality levels to ensure compliance with Environmental Management and Coordination (Air Quality) Regulations, 2014. 			
High Demand of Raw materials		<ul style="list-style-type: none"> Source building materials from local suppliers who use environmentally friendly processes in their operations; Ensure accurate budgeting and estimation of actual construction material requirements to ensure that the least amount of material necessary is ordered; Ensure that damage or loss of materials at the construction site is kept minimal through proper use and storage. 	Project manager & Contractor	Throughout the Construction Phase	<p>No additional costs.</p> <p>Costs will be within the construction budget</p>
Hazardous Material Spillage		<ul style="list-style-type: none"> Train personnel on the risks of oil spills and leakages; Refueling and maintenance of large vehicles to only take place at designated areas; All hazardous materials to be stored in appropriately banded containers and placed on concrete floors where applicable; 	Project Manager/ Contractor/ Environment	Throughout the Construction Phase	<p>No additional costs.</p> <p>Costs will be within the</p>

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> ▪ Maintain spill response kits at the construction site at all times; ▪ Prepare and display on-site spill response procedures and train workers on spill response and management; ▪ The site design to incorporate oil sumps at the parking areas to isolate oil spills from parked vehicles that might spill into the storm drains; ▪ No solid waste, fuels, or oils shall be discharged on the land surface or into drains. ▪ All oil products and materials should be stored in site stores; ▪ Any wash-off from the oil/grease handling area or workshop shall be drained through impervious drains; ▪ Regularly check for leaks from paint containers; ▪ All machinery must be keenly monitored to prevent oil leaks on the ground. This can be affected through regular maintenance of the machinery. ▪ Maintenance and servicing of machinery must be carried out in a designated area (protected service bays) and areas where oils are completely restrained from reaching the ground. Such areas should be covered to prevent storms from carrying away oils into the soil or water systems. 	Health and Safety Officer		construction budget
Community Safety and Health Risks		<ul style="list-style-type: none"> ▪ Establish a communications desk within the hotel where all concerns can be recorded to ensure a continued engagement between the proponent and the community. ▪ Ensure continuous engagement with the community to identify community risks as a result of the development. ▪ Install catch platforms around the site perimeter to arrest any falling objects; ▪ Immediate neighbours and other stakeholders should be sensitized on the dangers and risks associated with the construction works for enhanced self-responsibility on personal safety; ▪ Disabled access features and safety signages should be placed strategically around and within the site; 	Contractor/ Environment Health and Safety Officer		1,500,000

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> ▪ Limit the movement of workers and contractors to within project-defined areas and designated traffic and transport routes or locations; ▪ Control access to the site and implement a permit system for vehicle access for the duration of construction; ▪ The contractor should comply with the provisions of: OSHA, 2007; Public Health Act Cap 242; Public Roads and Roads of Access Act Cap 399; Traffic Act Cap 403; and the Kenya Roads Act, 2007; 			
Increased Abstraction and Consumption	Water	<ul style="list-style-type: none"> ▪ Where possible, water should be recycled without compromising on quality and health; ▪ Ensure efficient use of water during construction by ensuring regular repair and replacement of broken or worn-out pipes and fittings; ▪ Identify activities and areas that cause high consumption and implement conservation practices; ▪ Put in place sound and sufficient water storage reservoirs that are leak-proof; ▪ Install water-saving devices in appropriate places such as flow regulators, self-closing taps; ▪ Drilling of a borehole to supplement supply from Nairobi Water and Sewerage Company (NWSC); ▪ Provide neighbors with adequate notice regarding water connections disruptions etc. ▪ Ensure Compliance to the Water Act 2016, and Environment Management and Coordination Act (Water Quality regulations), 2006. 	Project Manager/ Contractor	Throughout the Construction Phase	Covered under Construction budget
Traffic Impacts		<ul style="list-style-type: none"> ▪ Adopt a Traffic Management plan and delivery management plan to enhance traffic movement within the site and along third freight lane; ▪ Heavy Commercial Vehicles (HCVs) delivering construction materials should observe designated speed limits for the area; ▪ Minimize haulage and transportation of construction material during peak hours; 	Contractor/ Project Manager	Throughout the construction phase	Covered under Construction budget

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> ▪ Flagmen/traffic marshals should be deployed at the entrance to control traffic; ▪ Construct acceleration and deceleration lanes to channel delivery trucks to the site without creating a backlog of traffic behind them as they navigate turns of entry; ▪ Proper signage and warnings should be placed at strategic locations to direct traffic to minimize inconveniences to motorists and forewarn other motorists of HCVs turning and transportation of abnormal loads; ▪ Construction activities should be done within the confines of the construction area. Ensure the construction doesn't occupy road reserves and complies with the Traffic and land demarcation obligations; ▪ Enough parking spaces shall be provided for the vehicles transporting workers and heavy trucks offloading the construction materials; ▪ The selection of construction areas shall be based on the existing road layout and the location of access to the various commercial and residential properties; ▪ Ensure maintenance of access roads to the site and repair of any damage caused by trucks. ▪ Any change in the normal programming of activities that will significantly disrupt normalcy along the abutting project roads should be timely communicated. 			
Traffic Accidents		<ul style="list-style-type: none"> ▪ Employ traffic marshals to control the movement of vehicles during the construction phase of the project. ▪ Implement the annexed Traffic Management Plan to enhance the traffic movement within the site and the public road. ▪ Use of signs for diversion and to warn motorists against dangers at or near construction site. ▪ Use of reflective jackets among other PPEs to avoid accidents. ▪ Work closely with the traffic police to ensure that any incident on the detours is quickly cleared to ensure the continual operation of the detours 	Contractor/Project Manager	Throughout the construction phase	Covered under Construction budget

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
Damage to existing Infrastructure		<ul style="list-style-type: none"> Map all utility Infrastructure located within or near the project site before commencement of excavation works; Liaise with the Nairobi City County Government to ensure safe removal of underground utility infrastructure at the proposed project site during excavation works; The contractor should maintain access roads and repair damages to infrastructure; Inform users of planned service interruptions sufficiently ahead of time for them to put in place strategies to mitigate the consequences of the interruptions. 	Contractor/ NWSC/KPLC	Throughout the construction phase	Covered under Construction budget
Increased demand	energy	<ul style="list-style-type: none"> Switch off engines when not in use. Use well serviced construction machinery that is efficient in fuel consumption. Maximize the use of natural lighting by limiting construction works to day time. Create awareness among workers on the importance of conservation of energy resources. Employ technologies that demand less energy consumption. Repair or replace any faulty equipment with more efficient and economical alternatives. Utilize electricity meters to monitor energy consumption subject to coordination with energy optimization consultant and identify areas which cost most energy in order to forestall appropriate energy conservation measures. Use energy saving lighting systems 	Contractor	Throughout the construction phase	Covered under Construction budget
Insecurity		<ul style="list-style-type: none"> The contractor should conduct due diligence on potential employees and require police clearance for laborers; The Airport being a sensitive area clear security protocols should be established and followed; The contractor should obtain gate passes for all workers from KAA and provide for their transportation from JKIA entrance gate and from the site back to the exit gate; Secure the site and have security personnel manning the site; The contractor to give out information of suspecting conduct within the site to the local administration; 	Contractor/Project Manager	Throughout the construction phase	4,500,000

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> Hire services of a security firm to monitor personnel or visitor movement within and close to the site; Formulate and instill a place of work conduct; Ensure every construction staff biodata is well captured; The contractor should work closely with the Kenya Airport Police Unit within JKIA to ensure the government provides security during construction. 			
Soil Erosion		<ul style="list-style-type: none"> Site clearing or disturbance of the natural vegetation should be planned and approved as part of the project management process; Terracing and levelling the project site to reduce run-off velocity and increase infiltration of rainwater into the soil; Providing adequate road drainage based on road width, surface material, compaction, and maintenance; Providing effective short-term measures for slope stabilization, sediment control and subsidence control until long term measures for the operational phase can be implemented; Soils excavated should be used for re-filling and should not be left exposed to wind or water for long periods; Runoff loaded with sediment and other suspended materials from the site/working areas should be prevented from discharging to adjacent watercourses and/or water bodies must be prevented; Prepare a restoration scheme to guide re vegetation of areas cleared during construction comprising of indigenous species and to be rid of any invasive species; Banding the site to control run-off loaded with sediment and other suspended materials from the site from watercourses. 	Project Manager/Contractor	Throughout the construction phase	Covered under Construction budget
Flooding Risk		<ul style="list-style-type: none"> The drainage system should ensure that surface flow is drained suitably into the public drains provided to control flooding within the site; 	Contractor	Throughout the construction phase	Covered under Construction budget

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> ▪ Installing cascades to break the impact of water flowing into the drains; ▪ Controlling the earthworks and ensuring the management of excavation activities; ▪ Drainage channels should be installed in all areas that generate or receive surface water such as car parking, driveways and along the building block edges of the roofs; ▪ The channels should be covered with gratings or other suitable and approved materials to prevent the occurrence of accidents and entry of dirt that would compromise the flow of run-off; ▪ The channels should be designed with regards to the peak volumes such as periods or seasons when there is a high intensity of rainfall; ▪ The drainage channels should ensure the safe final disposal of run-off /surface water and should be self-cleaning which means it should have a suitable gradient; ▪ Consider Alternative paving surfaces that capture and temporarily store the storm water retention volume by filtering runoff through voids in the pavement surface into an underlying stone reservoir. ▪ Existing trees can be preserved, or new trees can be planted to reduce storm water runoff. 			
Labour Management		<ul style="list-style-type: none"> ▪ Make necessary arrangement for mass transportation of workers to and from site on a daily basis. The employees should be hired from within the locality so as to limit movement; ▪ Ensure that all food vendors supplying food to the construction workers are licensed by the Ministry of Health (Port Health) before they are allowed to sell food to the workers; ▪ Develop a human resource policy for all unskilled labour / casual laborers; ▪ Develop an adequate and effective employee grievance system; 	Contractor	Throughout the construction phase	3,000,000

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> Ensure non-discrimination of Vulnerable Individuals (if any) such as PLWD, and widows; Comply with the Employment Act 2007 and its amendment Act of 2022, to ensure there is no forced labour, employment of underage citizens, discrimination in employment and sexual harassment. 			
Aviation Safety		<ul style="list-style-type: none"> Avoid the use of reflective materials due to the site's proximity to an aerodrome; Adopt planting of bird repellent plant and tree species; Utilizing moving water features such as fountains that are a deterrent to birds; Bird spikes on ledges that birds might perch on. 	Project Manager/ Contractor	Throughout the construction phase	Covered under Construction budget
Occupational Health and Safety risks					
Approval of building plans		<ul style="list-style-type: none"> Ensure that all building plans are approved by the Local Authority and the local Occupational Health and Safety Office. 	Proponent	One-off	As per DOSH county office invoice.
Registration of the premises		<ul style="list-style-type: none"> Registration of the premises as a workplace under the Occupational Safety and Health Act, 2007 Laws of Kenya is mandatory. 	Proponent	One-off	6,050
General register		<ul style="list-style-type: none"> A general register should be kept within the facility as stipulated in Section 122 & 123 of the Occupational Safety and Health Act, 2007. 	Project Manager & Contractor	One-off	2,500
Posting of abstract of Act, rules and notices		<ul style="list-style-type: none"> There shall be displayed at prominent places within the site the prescribed abstract of the OSHA and the relevant notices as stipulated in section 121 of the OSHA, 2007. 	Project Manager & Contractor	One-off	1,500
Approval of building plans		<ul style="list-style-type: none"> Ensure that all building plans are approved by the Local Authority and the local Occupational Health and Safety Office. 	Proponent	One-off	As per DOSH county office invoice.
Fire Safety		<ul style="list-style-type: none"> Install Appropriate firefighting Equipment. Designate a Fire Assembly point within the premises. Train workers on Fire Safety. Conduct regular fire drills. 	The Contractor, Project Manager & Site Safety Officer	Continuous	Covered under Construction budget

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
Incidents, accidents and dangerous occurrences		<ul style="list-style-type: none"> Ensure that provisions for reporting incidents, accidents and dangerous occurrences during construction using prescribed forms obtainable from the local Occupational Health and Safety Office (OHSO) are in place. 	Project Manager, Developer & Contractor	Continuous	Covered under Construction budget
		<ul style="list-style-type: none"> Enforcing adherence to safety procedures and preparing contingency plan for accident response in addition safety education and training shall be emphasized. 	The Contractor, Project Manager & Site Safety Officer	Continuous	Covered under Construction budget
Insurance		<ul style="list-style-type: none"> Ensure that the premises are insured as per statutory requirements (third party and workman's compensation) 	Proponent	Annually	Covered under Construction budget
Safety, health and environment (SHE) policy		<ul style="list-style-type: none"> Develop, document and display prominently an appropriate SHE policy for construction works 	Project Manager & Contractor	One-off	5,000
Health and safety committee		<ul style="list-style-type: none"> Provisions must be put in place for the formation of a Health and Safety Committee, in which the employer and the workers are represented. 	Project Manager	One-off	Covered under Construction budget
Welfare of Workers		<ul style="list-style-type: none"> Provide wholesome drinking water for employees 	Project Manager & contractor	Continuous	
		<ul style="list-style-type: none"> Provision of appropriate PPES to all workers. 			
		<ul style="list-style-type: none"> Provide suitable, efficient, clean, well-lit and adequate sanitary conveniences should be provided for construction workers. 	Project Manager & contractor	One-off	
Medical examination		<ul style="list-style-type: none"> Arrangements must be in place for the medical examination of workers working in hazardous areas before and after the project. 	Project Manager, Developer & Contractor	Continuous	2,000 per examination for each worker
Machinery/equipment safety		<ul style="list-style-type: none"> Ensure that machinery, equipment, personal protective equipment, appliances and hand tools used in construction do comply with the prescribed safety and health standards and be appropriately installed maintained and safeguarded. 	Project Manager, Developer & Contractor	One-off	Covered under Construction budget

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> Ensure that equipment and work tasks are adapted to fit workers and their ability including protection against mental strain. All machines and other moving parts of equipment must be enclosed or guarded to protect all workers from injury. Arrangements must be in place to train and supervise inexperienced workers regarding construction machinery use and other procedures. Equipment such as fire extinguishers must be examined by a government authorized person. The equipment may only be used if a certificate of examination has been issued. Reports of such examinations must be presented in prescribed forms, signed by the examiner and attached to the general register 	Project Manager, Developer & Contractor	Continuous	
			Project Manager & contractor	One-off	
			Project Manager & contractor	Continuous	
			Project Manager & Contractor	Continuous	
			Project Manager	Continuous	
Storage of materials		<ul style="list-style-type: none"> Ensure that materials are stored or stacked against safe walls and partitions in such manner as to ensure their stability and prevent any fall or collapse 	Project Manager & contractor	Continuous	Covered under Construction budget
Safe means of access and safe place of employment		<ul style="list-style-type: none"> All floors, steps, stairs and passages of the premises must be of sound construction and properly maintained. 	Project Manager & Contractor	Continuous	Covered under Construction budget
		<ul style="list-style-type: none"> Securely fence or cover all openings in floors 	Project Manager & Contractor	One-off	
		<ul style="list-style-type: none"> Ensure that construction workers are not locked up such that they would not escape in case of an emergency 	Project Manager & Contractor	Continuous	
		<ul style="list-style-type: none"> All working in height platforms used in construction works must be of good construction and sound material of adequate strength and be properly maintained. 	Project Manager & Contractor	One-off	
Emergency preparedness and evacuation procedures		<ul style="list-style-type: none"> Design suitable documented emergency preparedness and evacuation procedures to be used during any emergency. 	Project Manager & Contractor	One-off	

Expected impact	Negative	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) (30 Months)
		<ul style="list-style-type: none"> Such procedures must be tested at regular intervals. 	Project Manager & Contractor	Every months 3	20,000
		<ul style="list-style-type: none"> Develop & publicize an emergency response plan 	Project Manager & Contractor	One-off	Covered under Construction budget
		<ul style="list-style-type: none"> Ensure that adequate provisions are in place to immediately stop any operations where there is an imminent and serious danger to health and safety and to evacuate workers 	Project Manager & Contractor	One-off	Covered under Construction budget
		<ul style="list-style-type: none"> Ensure that current emergency telephone contact numbers are prominently and strategically displayed on posters within the construction site. 	Project Manager & Contractor	One-off	5,000
		<ul style="list-style-type: none"> Provide measures to deal with emergencies and accidents including adequate first aid arrangements. 	Project Manager & Contractor	Continuous	Covered under Construction budget
		<ul style="list-style-type: none"> Design suitable documented emergency preparedness and evacuation procedures to be used during any emergency. 	Project Manager & Contractor	One-off	
First Aid		<ul style="list-style-type: none"> Provide well-stocked first aid boxes which is easily available and accessible within the premises. 	Project Manager & Contractor	One-off	50,000
		<ul style="list-style-type: none"> Provision of first aid room or emergency room with a trained and qualified nurse within the premises. 	Project Manager and Contractor	Throughout construction phase	2,160,000
Environmental monitoring of the project		<ul style="list-style-type: none"> Due to the magnitude of the project the proponent will liaise with the environmental, health and safety consultants throughout the construction phase and ensure that the conditions of approval are adhered to. 	Proponent, Contractor and EHS consultant	Throughout construction phase	6,000,000
Mandatory Assessments	Site	<ul style="list-style-type: none"> Conduct Occupational Safety and Health Risk Assessment Conduct Occupational Safety and Health Audit Conduct Fire Safety Audit 	Proponent, Contractor and EHS consultant	Annually	

10.4 Operational Phase Environmental and Social Management Plan

The necessary objectives, activities, mitigation measures, and allocation of costs and responsibilities pertaining to the prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the operational phase of the project are outlined in the table below;

Table 10-2 ESMP for the Operational Phase

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) Per Annum
Increased Solid waste generation	<ul style="list-style-type: none"> Use of an integrated solid waste management system i.e. through a hierarchy of options: 1. Source reduction 2. Recycling 3. Composting and reuse 4. Combustion 5. Sanitary land-filling. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Provide solid waste handling facilities such as waste bins and skips. Institute recycling programs for materials like paper, cardboard, aluminum cans and glass. 	Proponent	One-off	500,000
	<ul style="list-style-type: none"> Compost organic waste to reduce the amount of materials that are disposed of. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Adopt waste reduction strategies such as using bulk dispensers for toiletries in addition to promoting reuse of textile materials. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Undertake regular employee training programs to raise awareness about waste reduction and recycling practices. 	Proponent	Continuous	
	<ul style="list-style-type: none"> Ensure that solid waste generated is regularly disposed of appropriately at authorized dumping sites 	Proponent	Continuous	720,000
	<ul style="list-style-type: none"> Donate redundant but serviceable equipment to charities and institutions. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Comply with the Airport regulations of solid waste management; 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Comply with the provisions of Environmental Management and Co-ordination (Solid Waste) Regulations 2006 	Proponent	Continuous	0
Increased Waste Water Generation	<ul style="list-style-type: none"> Channel all wastewater to the proposed Grey Waste Water Treatment Plant 	Proponent	One-off	0

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) Per Annum
	<ul style="list-style-type: none"> Conduct regular inspections for pipe blockages or damages and fix them appropriately. 	Proponent	Continuous	15,000 per inspection
	<ul style="list-style-type: none"> Recycling of Grey-water and reuse it for toilet flushing, landscaping and other non-portable purposes. Ensure Regular Monitoring of the treated waste water 	Proponent	Continuous	120,000
	<ul style="list-style-type: none"> Application for an Effluent Discharge License for the Grey Water Treatment Plant 	Proponent	Continuous	20,000
	<ul style="list-style-type: none"> Adopt more efficient use of water resources in order to reduce of overall amount of waste water generated by the facility. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Comply with the provisions of Environmental Management and Co-ordination (Water Quality) Regulations 20 	Proponent	Continuous	0
Increased Pressure on Existing Resources				
Energy Use and Management	<ul style="list-style-type: none"> Switch off electrical equipment, appliances and lights when not being used. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Display information reminding users to switch off lights when not in use. 	Proponent	One-off	10-40 % higher than ordinary lighting
	<ul style="list-style-type: none"> Install energy saving fluorescent tubes at all lighting points within the building instead of bulbs which consume higher electric energy. 	Proponent	One-off	10-40 % higher than ordinary lighting
	<ul style="list-style-type: none"> Monitor energy use during the operation of the project and set targets for efficient energy use. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Sensitise workers and the hotel guests to use energy efficiently through posters 	Proponent	Continuous	50,000

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) Per Annum
Water use and management	<ul style="list-style-type: none"> Promptly detect and repair of water pipe and tank leaks 	Proponent	Continuous	100,000
	<ul style="list-style-type: none"> Occupants to conserve water e.g. by avoiding unnecessary toilet flushing. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Ensure taps are not running when not in use. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Install water conserving taps that turn-off automatically when water is not being used. 	Proponent	One-off	10-40 % higher than ordinary taps
	<ul style="list-style-type: none"> Install a discharge meter at water outlets to determine and monitor total water usage. 	Proponent	One-off	20,000
Noise Pollution	<ul style="list-style-type: none"> Ensure sound insulation technologies employed during the construction phase work effectively towards minimizing high noise levels from external environment in the vicinity. 	Proponent	One-off	0
	<ul style="list-style-type: none"> Using equipment with low noise ratings or noise reduction technologies such as silencers for the generators. 	Proponent	Continuous	0
	<ul style="list-style-type: none"> Erecting signs and notifying other users of noisy activities. Conducting all noisy activities during the day when permissible levels are higher. 	Proponent	One-off	50,000
	<ul style="list-style-type: none"> Provision of PPES such as ear plugs for employees working in noisy conditions or with noisy equipment. 	Proponent	One-off	50,000
Air pollution from emissions.	<ul style="list-style-type: none"> Installation of ducted kitchen extractors. Use of unleaded premium petroleum products that release less harmful substances into the atmosphere. Secure the proposed project site with a proper fence to minimize air pollution effects. 	Proponent	One-Off	0

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) Per Annum
	<ul style="list-style-type: none"> Adhere to all the provisions of EMCA (Air Quality) Regulations 2014 regarding management of air emissions by abiding within permissible levels and standards. 	Proponent	Continuous	0
Traffic Congestion	<ul style="list-style-type: none"> Ensure fast screening and access of the all vehicles entering the hotel premises to prevent traffic snarl-up at the entry point. Ensure that appropriate road signage is positioned strategically at the entry point alerting oncoming drivers of route diversion into the Hotel premises. Ensure that all drivers making use of the hotel parking adhere to all traffic rules to minimize incidences of accidents. 	Proponent	Continuous	0
Occupational Health and Safety Risks				
Minimization of Occupational health and safety Risks	<ul style="list-style-type: none"> Provision of PPES to all personnel working in potentially hazardous areas or with potentially hazardous equipment, and replacing the PPES on wear and tear. Placing readable signs alerting people of hazards such as slippery floors Servicing equipment and machines to ensure efficiency. Implement all necessary measures to ensure health and safety of guest during operation of the project as stipulated in the Occupational Safety and Health Act, 2007 	Proponent	Continuous	1,200,000
Fire Safety Risks	<ul style="list-style-type: none"> Provision of fire extinguishers on every floor. Proper signage on fire alarm as well as a fire evacuation response plan and Fire Assembly point Installation of smoke alarms, fire sprinkler systems and emergency exit doors. 	Proponent	Once-Off	700,000

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) Per Annum
	<ul style="list-style-type: none"> • Training Putting in place and Emergency Response Plan and ensuring all people in the project area are aware of it and the procedures to follow commensurate to the level of emergency. hotel personnel on fire safety and evacuation. • Providing adequate storage for hazardous and flammable substances and controlling access to them. • Performing emergency drills on a frequent basis, setting benchmarks for response 			
Micro-Climate Modification	<ul style="list-style-type: none"> • Using sustainable drainage systems that mimic the natural percolation of water into the soil. • Using efficient equipment that emit little or no waste heat. • Making use of photo catalytic materials containing titanium dioxide in the designing of the hotel's pavements surfaces so as to reduce air pollution created by traffic. • Adopt the use of Green Building Technologies 	Proponent	One - Off	Covered under Construction budget
Oil depot risk	<ul style="list-style-type: none"> • The facility should be properly equipped with automated fire detection systems and fire suppression equipment. • The firefighting equipment should be strategically placed within the building. • There should be provision for periodic training programs on Fire Safety, Occupational Health and Safety and First Aid. A register should be kept of all personnel who attend the courses, and bi-annual refresher sessions should be scheduled for staff. • Mock drill should be conducted once in six months. • Develop an Emergency Response and Disaster Management Plan. 	Proponent	Continuous	Covered under OHS Risks

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) Per Annum
	<ul style="list-style-type: none"> Marking and checking to ensure all fire escape routes are available and clear at all times. Having a marked Fire Assembly Point at the Facility. 			
Control social and cultural disruption	<ul style="list-style-type: none"> Conduct community engagement talks with the local community/business enterprises to address their concerns and grievances. Achieve sustainable tourism practices by educating and sensitizing staff and guests on local customs, social and cultural norms 	Proponent/ Local Authority/ General Manager	Continuous	100,000
Ensure the general safety and security of the premises and surrounding areas	<ul style="list-style-type: none"> Install adequate security measures at the project consisting of CCTV devices, Security alarms systems, electric fenced perimeter wall. Employ well trained and adequately equipped security guards with ability to man the hotel premises and respond to any existential security threats. Ensure proper screening of all visitors, their details are well captured and archived, and each visitor is well known to the management before being accommodated by the facility. Collaborate with all security apparatus within the airport including Kenya police and other private security organizations, in ensuring that security at the hotel and airport is enhanced at all times. 	Proponent	Continuous	3,600,000
Wildlife Strikes	<ul style="list-style-type: none"> Regular collection and disposal of waste to avoid accumulation of waste which can attract birds and wildlife; The proponent should avoid the use of fruit-producing fruits for landscaping purpose. The trees and flowers used should not attract birds within the vicinity; Securely seal open water points, to deter wildlife from seeking hydration in these areas. 	Proponent	Continuous	0

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (KSH) Per Annum
Ensure Environmental, Health and Safety compliance	<ul style="list-style-type: none">• Undertake an environmental audit within 12 months after operation commences as required by law.• Conduct Occupational Safety and Health Risk Assessment• Conduct Occupational Safety and Health Audit• Conduct Fire Safety Audit	Environmental/ Occupational Health and Safety Consultants	Annually	400,000

10.5 Decommissioning Phase ESMP

In addition to the mitigation measures provided in **Tables 9-1** and **9-2**, it is necessary to outline some basic mitigation measures that will be required to be undertaken once all operational activities of the project have ceased. The necessary objectives, mitigation measures, allocation of responsibilities, time frames and costs pertaining to prevention, minimization and monitoring of all potential impacts associated with the decommissioning and closure phase of the project are outlined in the table below

Table 10-3 ESMP for the Decommissioning Phase

Potential Negative Impact	Proposed mitigation measures	Responsibility for Mitigation	Timelines	Cost (KSH)
Decommissioning Phase				
Waste generation	<ul style="list-style-type: none"> Use of an integrated solid waste management system i.e. through a hierarchy of options: 1. Source reduction 2. Recycling 3. Composting and reuse 4. Combustion 5. Sanitary land filling. All buildings, machinery, equipment, structures and partitions that will not be used for other purposes must be removed and recycled/reused as far as possible. All foundations must be removed and recycled, reused or disposed of at a licensed disposal site. Where recycling/reuse of the machinery, equipment, implements, structures, partitions and other demolition waste is not possible, the materials should be taken to a licensed waste disposal site. Donate reusable demolition waste to charitable organizations, individuals and institutions. Manage all waste in line with the requirements of the Environmental Management and Co-ordination (Waste Management) Regulations, 2006. 	Demolition Contractor	Throughout the decommissioning phase	No additional costs. Expenditure covered under demolition costs
Air pollution	<ul style="list-style-type: none"> Truck drivers will maintain low speeds to avoid raising dust. Employees will be provided with dust masks and goggles. Install dust trappers/nets around the site to prevent dust from spreading in the neighbourhood. Sprinkle dusty areas with water to keep dust level low. Trucks involved in demolition and transportation activities of soil and other solid materials from the site should be covered to prevent spreading of dust into the surrounding areas. 	Demolition Contractor	Throughout the decommissioning phase	No additional costs

Noise and Vibration	<ul style="list-style-type: none"> Workers should be provided with appropriate Personal Protective Equipment (PPE). Ensure compliance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 	Demolition Contractor	Throughout the decommissioning phase	No additional costs. Expenditure covered under demolition costs
Occupational Safety and Health Risks	<ul style="list-style-type: none"> Ensure workers have proper instruction and supervision. Establish a Health and Safety Plan (HASP) for both the demolition works. Appoint a trained health and safety team for the duration of the construction work. Provide workers with adequate and appropriate PPEs. Provide workers with adequate drinking water and breaks. Train workers on safety procedures and emergency response. 	Demolition Contractor	Throughout the decommissioning phase	No additional costs. Expenditure covered under demolition costs
Rehabilitation of project site	<ul style="list-style-type: none"> Implement an appropriate re-vegetation programme to restore the site to its original status Consider use of indigenous plant species in re-vegetation 	Demolition Contractor	Throughout the decommissioning phase	No additional costs. Expenditure covered under demolition costs
Loss of Jobs	<ul style="list-style-type: none"> Implement a responsible and transparent communication strategy to inform workers well in advance about the decommissioning phase and potential job implications. Work closely with local employment agencies to assist affected workers in finding alternative employment opportunities, potentially in other local projects or industries. Consider providing training programs or skills development initiatives to enhance the employability of affected workers in different sectors. Engage with local community leaders and authorities to explore alternative economic opportunities that can absorb the workforce affected by the decommissioning. Workers should be encouraged to diversify economic activities and skills to protect their income bases. 	Proponent	Throughout the decommissioning phase	No additional costs. Expenditure covered under demolition costs

Interference with Surface drainage	<ul style="list-style-type: none">▪ Proper handling of demolition waste to avoid blockage of existing drainage.	Proponent	Throughout the decommissioning phase	. Expenditure covered under demolition costs
Theft of Reusable Materials	<ul style="list-style-type: none">▪ Ensure that the decommissioned site is secured on a continuous basis until the end of the decommissioning stage.▪ Sort out all reusable waste materials and equipment and sell them off or donate them before disposing of the rest of the demolition waste debris.▪ Discourage idling and prohibit authorized access to the decommissioned site during the demolition and rehabilitation phase	Proponent	Throughout the decommissioning phase	. Expenditure covered under demolition costs

11 Environmental and Social Monitoring Plan

Table 11-1 Environmental Monitoring Plan for the proposed project

Component	Action	Standards / Targets	Location	Frequency	Responsibilities	Annual Cost (Kshs)	Supervision
Construction Phase							
Ambient Air Quality	Conduct regular visual inspection of construction site and access roads.	Avoid significant degradation of baseline conditions associated with dust production	Work sites	Continuous during construction activities	Contractor/Proponent	500,000	Construction Management Team
Ambient Noise	Inspect construction site and measure dB levels, at locations where noisy activities are realized close to sensitive receptors and following reception of specific noise-related grievances.	Respect the noise levels set in the EIA Licence conditions	Work sites and neighboring property boundaries.	Continuous during construction activities	Contractor	300,000	Construction Management Team
Traffic Congestion	Conduct visual inspection of traffic snarl ups along First freight lane and neighboring roads.	Avoid traffic snarl-ups along First Freight Lane and neighbouring roads.	Roads neighbouring the project site	Continuous during construction activities	Contractor	No additional costs	Construction Management Team
Worker Health and Safety	Provide all workers with Health and Safety sensitization	100% of workers sensitized on Safety	Entire construction workforce	Continuous during construction activities.	Contractor	No additional costs	Construction Management Team
	Assess proportion of work accidents duly reported.	0 accidents	Entire construction workforce	Continuous during construction activities.	Contractor	No additional costs	Construction Management Team
Operation Phase							

Wastewater	Effluent monitoring	Effluent standards for discharge into the environment	Discharge point	Quarterly	Proponent	120,000	Hotel Management
Hotel Monitoring	<ul style="list-style-type: none"> Annual Environment Audit Risk Assessment Safety and Health Audit Fire Safety Audit 	Comply with all Environmental legal requirements	Entire hotel	Annual	Proponent	400,000	Hotel Management
Decommissioning Phase							
Worker Health and Safety	Provide all workers with Health and Safety sensitization	100% of workers sensitized on Safety	Entire construction workforce	Continuous during demolition activities.	Contractor	No additional costs	Proponent
	Assess proportion of work accidents duly reported.	Number of accidents	Entire construction workforce	Continuous during demolition activities.	Contractor	No additional costs	Proponent

12 Environment, Health and Safety Action Plan

12.1 Introduction

In today's highly competitive industry, the advancement of technology and processes has brought about an increased concern for environmental, health and safety issues facing the business community. Because of these issues, there is a need for the Main Contractor for the proposed project to commit to move from compliance driven by reactionary concerns to the development of a central strategic management plan. At the heart of the environmental, health and safety strategy lies the ability to measure performance and relate EHS programs to financial success. The contractor must therefore integrate the management of environmental, health and safety issues as early as possible in the business and financial planning cycle.

It is vital for the contractor to understand that competitive advantages can be derived from such programs and that the greatest opportunities exist in providing environmentally sound and safe products to differentiate themselves from competitors. In order to facilitate the integration of environmental, health and safety issues into the business activities, the contractor should implement this Environmental, Health and Safety (EHS) action Plan which has been designed by the Consultant.

This will enable the contractor to deal with any EHS challenges that may emerge during the construction phase and to proactively manage environmental, health and safety issues and obligations. The EHS action Plan encompasses the combined areas of environmental, health, safety and transportation of hazardous materials due to the often-overlapping activities and agency regulations. This plan identifies the important issues that may arise during the implementation of the project, establishes goals designed to actively address these issues, sets forth a framework in which to operate and establishes a mechanism to monitor progress and assure continual improvement.

12.2 Mission

This Health and Safety Action Plan will guide the Main Contractor to:

- Manage all activities in a manner that meets or exceeds compliance with all applicable regulations.
- Protect and enhance the environment and assure the health and safety of workers, associates, customers and our communities.
- Manage and minimize potential liability exposure in environmental, health and safety areas.
- Develop team players who share a positive global view with the skills and willingness to perform all necessary tasks and who assume responsibility for their actions regarding EHS matters.

12.3 Policies

It is important for the Main Contractor to reaffirm their commitment to Directives and policies regarding environmental, health and safety issues. They are expected to:

- Maintain a copy of and adhere to the Directives and policies regarding environmental, health and safety issues at the site.
- Maintain a copy of the EHS Management Plan at the site and ensure the communication of and adherence to the plan.

- Identify a responsible, qualified person (professional or manager) and equip that person with the authority, tools and support necessary to coordinate and implement the environmental, health and safety program.
- Measure performance against the Environmental, Health and Safety Management Plan.
- Provide necessary training programs to associates to equip them with the skills and knowledge required to support the Environmental, Health and Safety Management Plan.
- Update the Environmental, Health and Safety Management Plan on an annual basis.

12.4 Roles and Responsibilities

12.4.1 Main Contractor

The Main Contractor in charge of the project will be responsible for:

- Preparing, updating, and implementing this Environmental Health and Safety Action Plan (EHS), including all associated procedures and local regulations such as the Occupational Safety and Health Act, 2007.
- Identifying and observing all legal health and safety requirements;
- Ensuring that all works are conducted in a safe manner without posing any risks to workers and the neighbouring community;
- Planning to do all work safely;
- Participating in the planning and design stages of trade activities;
- Employing a full-time qualified and experienced EHS Supervisor and staff;
- Identifying health and safety training required for an activity;
- Ensuring workers undertake identified H&S training;
- Communicating and consulting with workers through general/ project meetings and daily toolbox meetings;
- Investigating identified hazards and other safety breaches reported and ensuring that corrective actions are undertaken;
- Assisting with rehabilitation and return to work initiatives;
- Dispute resolution.

12.4.2 Sub-Contractors

The Sub-Contractors and other contractors who are engaged in the proposed project are responsible for:

- Fulfilling the duties of as per the contract required for their own operations;
- Identifying all high-risk construction work associated with their activities and ensuring safe work method statements are developed and implemented;
- Following all safety policies and procedures and site rules;
- Complying with this H&S Management Plan;
- Complying with any directives given to them by the Client;
- Undertake site-specific induction and participate in any client-related briefings;
- Employ a qualified and experienced EHS Supervisor and support staff (e.g. trained staff in First Aid and Fire Fighting);
- Ensuring the workers undergo the site-specific induction;
- Ensuring they have the correct tools and equipment that are in a serviceable condition for the task.

12.4.3 Workers

All workers on the project (including those employed by contractors) will be responsible for:

- Taking reasonable care of their own health and safety;
- Taking reasonable care that their conduct does not adversely affect others;

- Complying with instructions, so far as they are reasonably able;
- Co-operating with reasonable notified policies or procedures.

12.4.4 EHS Supervisor

The Environmental Health and Safety supervisor for the Project will be responsible for:

- Preparing Personal Protective Equipment (PPE) requirements for the project and conducting Regular Monitoring and Supervision of all workers to ensure use of PPE to minimize accidents at workplaces.
- Identifying health and safety training required for an activity.
- Undertake weekly and monthly internal EHS Audits on all project activities and recommend improvements for implementation to the contractor through monthly reports.
- Provide EHS related services between the contractor and all relevant government agencies only in relevant/applicable areas.
- Regular Monitoring and Supervision of the implementation of the NEMA-approved Environmental Management Plan in the ESIA report & NEMA EIA License conditions and provide technical advice to the contractor for the implementation to reduce the level of impacts of the project to the environment and local communities.
- Regular Monitoring and Supervision of the implementation of the Occupational Health and Safety (noise, dust, accidents, working at heights safety, etc) legal requirements as per OSHA, 2007.
- Attend all project site meetings and respond to all emerging issues on Environment, Health and Safety.
- Conduct regular Risk Assessments to identify potential hazards and propose preventive/mitigation measures.

12.5 Emergency and Incident Response

12.5.1 Emergency Preparedness

To ensure adequate preparation in case of an emergency during project works, the contractor is expected to:

- show all workers and subcontractors the emergency exit points and assembly area as part of their induction (this shall be included in the induction checklist);
- display emergency procedures in the site office or other visible locations;
- cause inspection and testing of all firefighting appliances in the workplace to be carried out by a competent person at least once every three months.
- conduct emergency drills in order to evaluate the effectiveness of evacuation procedures and determine the necessary changes or adjustments to procedures to improve performance.

12.5.2 Emergency procedure

The Main Contractor is expected to have procedures in place. In the event of a fire or similar emergency evacuation, dedicated and trained fire marshals should ensure that:

- the workers stop work immediately and vacate the site prior to start up.
- they assist anyone in the workplace who may not be familiar with the evacuation procedures.
- emergency services are called from a mobile phone. Other emergency numbers should be made available and displayed in the numerous locations at site.
- the site office is notified of the occurrence via an incident report.

- workers assemble at the nominated assembly points until all the workers receive further instructions from the site manager or emergency services personnel.

12.5.3 Emergency meeting point

The Main Contractor should ensure that there is a designated meeting point at the entrance and exit of the site. Safe zones will be made accessible by the emergency response team to allow ease of evacuation of injured persons to designated health facilities.

12.5.4 Emergency contact list for the site

The Main Contractor shall display a list of emergency contacts in numerous locations at the site. The Main Contractor shall also maintain emergency contact details for all workers at site.

12.5.5 Incident procedure

The Main Contractor shall put in place incident and accident reporting procedures at the site. In case of an incident, the procedure guide should:

- require workers to immediately notify the site EHS supervisor.
- require workers to avoid interfering with the scene of the incident or accident.
- depending on the nature and severity of the injury, require the EHS supervisor to notify the Directorate of Occupational Safety and Health (DOSHS) of the incident.
- require the preparation of an incident/accident investigative report.

The EHS supervisor should record details of the incident and ensure any remedial action is taken.

12.5.6 Notifiable incidents and dangerous occurrences

The Main Contractor should notify the Directorate of Occupational Safety and Health Services of the following incidents and dangerous occurrences:

- the death of a person at site.
- an incident requiring hospitalization.
- a serious injury or illness of a person.
- bursting of a revolving vessel, wheel, grindstone or grinding wheel moved by mechanical power.
- explosion of a receiver or container used for storage at a pressure greater than the atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.

In the event of such an occurrence, the site manager through the EHS supervisor shall notify the Nairobi area Occupational Safety and Health officer of any accident, dangerous occurrence, or occupational poisoning which has occurred at the workplace. Where an accident in a workplace causes the death of a person therein, the management shall:

- i. inform the area Occupational Safety and Health officer within twenty-four hours of the occurrence of the accident; and
- ii. send a written notice of the accident in the prescribed form to the area Occupational Safety and Health officer within seven days of the occurrence of the accident.
- iii. where an accident in a workplace causes non-fatal injuries to a person therein, the construction site office shall send to the area Occupational Safety and Health officer, a written notice of the accident in the prescribed form within seven days of the occurrence of the accident.
- iv. cause all workplace injuries to be entered in the general register specified in section 122 of OSHA 2007.
- v. fulfil any other requirement of OSHA 2007, Sec 21.

12.5.7 First aid

- The Main Contractor shall supply adequate first aid equipment, which should be available at the site. The contents of the first aid kit shall be replenished to ensure that the requirements of the OSHA (First Aid) Rules, 1977 are adhered to.
- The Main Contractor shall ensure that workers are trained in first aid in accordance with the OSHA (First-Aid) Rules, 1977.
- The Contractor shall provide space for a first aid room, fully stocked first aid kit and hire a full-time qualified nurse to handle any injuries at the site.

12.6 Accident/Incident Reporting and Investigation

12.6.1 Reporting

The Main Contractor shall ensure that all work-related accidents, injuries, and diseases are reported to the site safety office. An accident/incident register shall be kept on-site and shall be kept up to date.

12.7 Investigation

The main contractor shall ensure that the following accidents/incidents are investigated immediately after the occurrence, and a written report is issued:

- accident-causing death or injury requiring medical aid by a registered doctor.
- failure of the hoisting device.
- structural failure of a permanent or temporary structure.
- contact with overhead or underground power lines.
- contact with underground pipelines causing breakage or release of contents.
- inadvertent exposure to harmful concentrations of hazardous materials.
- failure of a confined space entry procedure.
- failure of a lockout/ /tag out procedure.
- property damage in excess of one million Kenya shillings.
- a near miss that had the potential to cause serious injury or property damage.

Where corrective action is recommended in the investigation report, a follow-up report shall be issued, within 7 days, detailing the steps taken to prevent a recurrence. A copy of all reports shall be submitted to the area DOSHS.

12.8 Induction and Training

12.8.1 Worker induction

The Main Contractor shall work with other contractors to ensure a site-specific induction is provided for all workers and visitors before starting work or accessing the site. This induction shall outline:

- the expectations outlined in this health and safety Management Action Plan, including all policies and procedures.
- the emergency meeting point.
- the site rules.
- the facilities.
- any site-specific hazards.
- high-risk work activities.
- Safe operation and use of any machinery on site.

12.8.2 Statutory training

The Main Contractor shall ensure that the following training is carried out among the workers:

- First aid training in accordance with the OSHA (First Aid) Rules 1977.
- Occupational Health and Safety training in accordance with the OSHA (Safety and Health-Committee)-Rules 2004.
- Fire Safety training in accordance with the OSHA (Fire Risk Reduction) Rules 2007.

The Main Contractor shall establish a Safety and Health committee. The establishment and operations of the committee shall be guided by the OSHA (Safety and Health-Committee)-Rules 2004.

12.8.3 Worker training

The Main Contractor shall:

- ensure workers are trained and competent for the work to be undertaken.
- ensure workers are trained to deal with any risks associated with the work and understand the control measures in place.
- ensure all workers have had relevant training (first aid, firefighting among others)
- ensure on-site training and supervision is provided.
- organize external training for specific tasks where required.
- seek high-risk licenses for all high-risk work and maintain a register of licenses.
- communicate with other contractors to ensure their workers are appropriately trained and competent.

12.9 Consultation and Communication

12.9.1 Consultation

The Main Contractor shall ensure that there is adequate consultation with all workers and contractors on H&S issues for the project. This shall be done:

- at toolbox meetings where anyone can raise issues for discussion.
- informally during the planning of activities or the development of Safe Work Method Statements.
- when changes to workplace arrangements could affect the health and safety of workers.
- during investigations into any incident to establish details of the incident or to formulate corrective action to prevent the incident from re-occurring.

The Main Contractor shall also consult with contractors and suppliers on health and safety issues associated with any products or services provided for the contract:

- during the negotiation phase before agreeing on the work requirements.
- before starting any contractor operations.
- when any changes to workplace arrangements occur that could affect the health and safety of the contractors or affect their work procedures.

12.9.2 Communication

The Main Contractor shall ensure that workers and other contractors are aware of health and safety requirements by providing them with their Safety Management Plan before commencing any project works. Contractors shall be expected to make their workers aware of all safety requirements.

Further, the Main Contractor is expected to communicate relevant safety information to everyone involved in the project through:

- safety induction

- pre-work meetings
- toolbox meetings
- incident reports and outcomes
- distribution of safety alerts or guidance material about industry-specific hazards/incidents

12.9.3 Disciplinary procedures

The Main Contractor shall put in place a disciplinary procedure for errant persons. The procedure shall include:

- i. **First violation:** verbal warning.
- ii. **Second violation:** written notification.
- iii. **Third violation:** Worker dismissal/suspension from the project.

For serious breaches of safety rules, workers shall be immediately dismissed or removed from the site without notice.

12.10 Site Safety Procedures

12.10.1 Site rules

1. Incidents/accidents, regardless of their nature, shall be promptly reported to supervisors.
2. Approved hard hats/helmets shall be worn on the job by all personnel.
3. Clothing shall be appropriate to the duties being performed. Long trousers, shirts, reflector jackets and sturdy work shoes are the minimum requirements.
4. Smoking is permitted only in designated areas. "Strike anywhere" matches are prohibited.
5. Running is not permitted anywhere, except in the case of extreme emergency.
6. Safety glasses, goggles or face shields shall be worn when concrete breaking, metal chopping, welding, grinding and other operations require eye protection.
7. Hand tools shall not be used for any purpose other than that intended. All damaged or worn parts shall be promptly or replaced.
8. Power tools shall be operated only by authorized personnel, with guards furnished by the manufacturer "in place".
9. All electrical hand tools shall be grounded or double-insulated.
10. Explosive/powder-actuated tools shall be used only by persons who have been instructed and trained in their safe use.
11. Compressed gas cylinders shall be secured in an upright position.
12. Riding on any hook, hoist or other material-handling equipment which is used strictly for handling material and not specifically designed to carry riders is prohibited.
13. Welding and burning operations shall be carried out only by authorized personnel with appropriate individual protective equipment.
14. Fighting and possession of firearms are strictly forbidden on the job and constitute grounds for dismissal.

15. Possession or use on the job of intoxicating beverages or unauthorized drugs is strictly forbidden and constitutes grounds for dismissal. A copy of the site rules is displayed in the site office.

12.10.2 Site amenities

The Main Contractor shall provide the following amenities on site.

- Toilets/sanitary conveniences in accordance with rule 139 of the OSH (Building Operations and Works of Engineering Construction) Rules 1984. The toilets should be private, adequate in number and with separate male and female facilities. Sanitary bins shall be provided in female facilities.
- Washing facilities/hand-washing facilities as per the requirements of rule 138 of the OSH (Building Operations and Works of Engineering Construction) Rules 1984
- Clean and safe drinking water.
- Accommodation for clothing/Changing rooms.
- Shelters for taking meals.

All workers are to observe good hygiene standards and clean up after themselves.

12.10.3 Site Security

The Main Contractor shall, so far as reasonably practicable, secure the site by:

- Securing the construction sites with danger/warning tapes or erecting a fence around the construction site to prevent unauthorized access.
- maintaining a security office where all persons with the intention of going to the construction site must be vetted and checked for appropriate PPE before being allowed in.
- keeping the entry and exits from the project site secure by installing security cameras during the project construction period.
- locking gates to the site outside normal hours of operation.

12.10.4 Site signage

At a minimum, the Main Contractor shall ensure the following signs are displayed at the entrance to the project site:

- the principal contractor's name, contact details and emergency telephone numbers.
- the location of the site office.
- the appropriate PPE.
- abstract of the health and safety policy.
- abstract of the emergency response plan.
- abstract of the OSHA 2007.

All signage shall be clearly visible from outside and also from within the buildings. Sufficient lighting/illumination must be provided where the signs may be invisible.

12.10.5 Personal protective equipment

The Main Contractor shall provide personal protective equipment (PPE) to workers at the site, unless the PPE has been provided by another contractor.

The Main Contractor shall ensure that the PPE issued is:

- suitable for the nature of the work and any hazard associated with the work.
- a suitable size and fit and reasonably comfortable for the worker who is to use or wear it.
- maintained, repaired or replaced so that it continues to minimize risk to the worker who uses it, including by:
 - ensuring it is clean and hygienic.
 - ensuring it is in good working order.
 - ensuring it is used or worn by the same worker, so far as is reasonably practicable.

When issuing PPE, the Main Contractor should:

- provide workers with information, training and instruction in the proper use, wearing, storage and maintenance of PPE.
- ensure that any other person at the workplace (such as visitors, clients or inspectors) is appropriately provided with PPE to wear as required.

The main contractor shall ensure that workers are made aware of their responsibility to:

- follow all instructions to wear and use PPE.
- take reasonable care of PPE.

12.11 Managing Building Health and Safety Hazards

12.11.1 General Lighting

During construction, the Main Contractor shall ensure the following:

- provision of adequate artificial lighting on the site.
- suitable colour/material will be used to prevent glare or unnecessary reflection from walls and roof.
- maintenance of light fittings in clean and in good repair.
- ensuring that the emergency lighting is operable at all times.
- the installed lighting system will be steady.

12.11.2 Air Quality

Construction may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. A secondary source of emissions may include exhaust from diesel engines of earth-moving equipment. To reduce and control air emissions from the site, the Main Contractor shall:

- minimizing dust from material handling sources by using covers and/or control equipment (water suppression, bag house, or cyclone).
- minimizing dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content.

- implement dust suppression techniques, such as applying water or non-toxic chemicals to minimize dust from vehicle movements.

The Main Contractor shall put in place a monitoring program to ensure dust and fumes do not affect employees and the neighbouring establishments/offices. This shall include periodic measurements of both indoor (on site) and ambient air qualities. The values shall then be compared with the standards outlined in the OSH (Hazardous substances) rules, 2007 for indoor (on site) exposure and the EMCA (Air quality) regulations, 2014 for ambient air quality.

The Main Contractor shall use the results of the measurements to evaluate the effectiveness of the dust & emissions control measures on site.

12.11.3 Noise

The Main Contractor is expected to put in place measures that shall ensure noise reduction. These include:

- selecting equipment with lower sound power levels.
- installing suitable mufflers on engine exhausts and compressor components.
- installing acoustic enclosures for equipment casing radiating noise.
- improving the acoustic performance of constructed buildings, apply sound insulation.
- installing vibration isolation for mechanical equipment.
- limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas.
- developing a mechanism to record and respond to complaints.

Noise from construction activities may have effects on both workers and persons in the vicinity of the project. As such, the Main Contractor shall put in place a noise monitoring program to establish the levels of noise that the workers (occupational noise measurements) and neighbours (environmental noise measurements) are exposed to. The values shall be compared to the standards set out in the OSHA (Noise Prevention & Control) Rules 2005 and the EMCA (Noise & Excessive vibration pollution control) Regulations 2009.

The results of the measurements shall be used to evaluate the effectiveness of the noise control measures on site.

12.11.4 Ventilation System

The Main Contractor shall ensure that workspaces are adequately ventilated. Where natural ventilation is not available, an operable ventilation system capable of supplying clean and good quality air shall be provided by the Main Contractor. The Main Contractor shall ensure that the installed system is:

- capable of withstanding high temperatures.
- in good working condition.
- capable of evacuating any noxious gases, ground gases, dust, heat or fumes present in the buildings.

12.11.5 Transport and materials safety

The Main Contractor shall ensure high standards of both material and transport safety during construction. At a minimum, the Main Contractor is expected to:

- ensure that all containers of hazardous substances are adequately labeled.
- obtain all safety data sheets (SDS) for all hazardous substances in use.
- have in place a robust traffic surveillance system including audible alarm warning systems and signaling for traffic monitoring.

12.11.6 Fire and Emergency Response

The Main Contractor shall put in place the following measures to ensure minimal risk of fire-related hazards:

- monitoring atmospheric conditions such as wind direction.
- ensuring that appropriate fire extinguishers are installed in place and periodically serviced.
- provision of adequate directions towards fire exits.
- ensuring that the catwalks and ladders are clear.
- having a trained firefighting team on standby who can take responsibility in an emergency.
- conducting fire drills to ensure that the emergency response and evacuation plan is well understood.

12.12 Managing construction hazards

12.12.1 Falls from heights.

The Main Contractor shall manage the risks associated with falls from heights by:

- ensuring that where practicable, any work involving the risk of a fall is undertaken on the ground or on a solid construction (such as an elevated work platform).
- where this is not practicable, providing a fall prevention device such as secure fencing, edge protection, working platforms and/or covers.
- where this is not practicable, providing a work positioning system such as plant or a structure (other than a temporary work platform) that enables a person to be positioned and safely supported.
- where this is not practicable, providing a fall arrest system such as a safety harness system. Workers will be trained in emergency procedures for fall arrest systems.
- use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces.

When undertaking work involving the risk of a fall from height, the Main Contractor shall ensure workers must:

- follow all instructions.
- work with a colleague when using a ladder.

- only use approved work platforms.

12.12.2 Struck by Objects

Construction and demolition activities may pose significant hazards related to the potential fall of materials or tools, as well as ejection of solid particles from abrasive or other types of power tools which can result in injury to the head, eyes, and extremities.

Where such risks are present, the Main Contractor shall ensure that the following control measures are put in place:

- Conducting sawing, cutting, grinding, sanding, chipping, or chiseling with proper guards and anchoring as applicable.
- Maintaining clear traffic ways to avoid driving heavy equipment over loose scrap.
- Use of temporary fall protection measures in scaffolds and out edges of elevated work surfaces, such as handrails and toe boards to prevent materials from being dislodged.
- Wearing appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes

12.12.3 Excavation work/trenching

The Main Contractor shall put in place the following measures before any excavation works are conducted:

- Ensure all necessary measures have been put in place to avoid cave-ins and failure of earth walls.
- Find out about any underground services that may be affected by their works, before starting work.
- Implement control measures to avoid direct or inadvertent contact with underground services.
- Potholes be dug (by hand) to expose existing services before any mechanical excavation near the services.
- Provide safe means of access and egress from excavations.
- Each employee at the edge of an excavation 6 feet (1.8 m) or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier; the contractor shall ensure that proper assessments are done based on the condition of the area such as non-existent vegetation.
- Avoid the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated.

12.12.4 Work near overhead or underground essential services

The Main Contractor shall ensure, where reasonably practical, that no one comes within an unsafe distance of an overhead or underground power line.

If maintaining a safe distance is not reasonably practical, the Main Contractor shall:

- assess the risk associated with the proposed work.
- implement control measures consistent with the risk assessment.

- contact and consult with the local essential service providers.

12.12.5 Electrical

The Main Contractor shall ensure electrical safety through the following:

- Power supplied to the site shall only come from:
 - an electricity distributor main.
 - an existing switchboard permanently installed at the premises.
 - a compliant low-voltage generator.
 - a compliant inverter.
- Switchboards and distribution boards used on site shall:
 - be of robust construction and materials capable of withstanding damage from the weather and other environmental and site influences
 - be securely attached to a post, pole, wall or other structure unless it is of a stable freestanding design able to withstand external forces likely to be present.
 - incorporate suitable support and protection for flexible cords and cables and prevent mechanical strain to the cable connections inside the board.
 - protect all live parts at all times.
 - be individually distinguished by numbers, letters or a combination of both (where multiple boards are present).
 - Flexible cords used on construction sites must be rated heavy-duty.
- Ensure hazard-reducing devices like cut-outs, earth leakage and isolating devices are in place.
- Flexible cords must be either protected by a suitable enclosure or barrier (flexible or rigid conduit) or located where they are not subjected to mechanical damage, damage by liquids or high temperature (elevated on stands or hung from non-conductive support brackets).
- The Main Contractor shall maintain an in-service inspection and test regime for all portable electrical leads, tools and earth leakage devices.
- The main shall ensure that after the equipment has been inspected and tested, it shall be fitted with a durable, non-reusable, non-metallic tag. The tag shall include the name of the person or company who performed the test and the test and re-test date.
- Records of all inspections, tests, repairs and faults related to all electrical equipment shall be recorded in a testing and tagging register.
- Workers shall report any damaged electrical equipment to the site manager. It will be removed from service and either repaired or replaced and subsequently inspected and tested as required.

12.12.6 Plant, machinery, and equipment

To ensure all plant, equipment and machinery used comply with the requirements of the OSHA 2007 Sec 55, the Main Contractor shall:

- only use plant for the purpose for which it was designed.
- use all health and safety features and warning devices on plant.
- follow all information, training and instruction provided.
- ensure guarding is permanently fixed and is not permitted to be removed.
- ensure that no person other than the operator may ride on the plant unless the person is provided with a level of protection that is equivalent to that provided to the operator.

Further, the Main Contractor shall ensure that:

- all plant is regularly maintained, inspected, and tested by a relevant competent person.
- the plant has a warning device that will warn persons who may be at risk from the movement of the plant.
- all plant that lifts or suspends loads is specifically designed to lift or suspend that load.
- there is segregation of the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes, the establishment of speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic.
- there is visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle.
- moving equipment is outfitted with audible backup alarms.

12.12.7 Scaffolds

The Main Contractor shall ensure:

- that the scaffold is erected by a competent person
- that before we use the scaffold, the competent person has advised that it is safe.
- that scaffolding is inspected by a competent person:
 - before use of the scaffold is resumed after an incident occurs that may reasonably be expected to affect the stability of the scaffold
 - before use of the scaffold is resumed after repairs
 - at least every 30 days.
- that, if an inspection indicates that any scaffold or its supporting structure creates a risk to health or safety:
 - any necessary repairs, alterations and additions will be made or carried out.
 - the scaffold and its supporting structure will be inspected again by a competent person before the use of scaffold is resumed.
- that scaffolds are provided with safe means of access, such as stairs, ladders, or ramps.
- that every part of a working platform, gangway or stairway of a scaffold from which a person is liable to fall a distance of 2 m is provided with guard-rails and toe-boards.

- that platforms on scaffolds are of adequate dimension, especially in width, for the tasks performed from the scaffold.

The Main Contractor shall ensure that workers:

- do not use incomplete scaffolding.
- report any scaffolding issues to the safety manager/site manager.
- comply with the directions of any tags attached to the scaffold.

12.12.8 Ladder safety

The Main Contractor shall manage hazards associated with ladders by:

- using ladders according to the manufacturer's instructions.
- only allowing one person at a time on a ladder.
- performing all work from a ladder while facing the ladder.
- ensuring the ladder stands on a firm and level footing except in the case of a suspended ladder.
- ensuring the ladder is equally and properly supported on each stile or side.
- fulfill all other requirements as per OSHA 2007, *Sec 75*.

12.12.9 Manual handling

The Main Contractor shall manage hazards associated with manual handling by:

- ensuring all users follow good manual handling practices.
- assessing risk assessments.
- providing mechanical lifting aids where applicable.
- Not permitting any worker to engage in the manual handling or transportation of a load which by reason of its weight is likely to cause the employee to suffer bodily injury (OSHA, 2007 sec 76 (4)).

12.12.10 Slips, trips, and falls

The Main Contractor shall manage hazards associated with slips, trips and falls by:

- Implementing good housekeeping practices, such as sorting and placing loose construction materials or demolition debris in established areas away from footpaths.
- Locating electrical cords and ropes in common areas and marked corridors.
- ensuring that walking areas are slip-resistant.
- using slips, trips and falls checklist as required.
- checking for hazards that could cause someone to slip, trip or fall by doing a visual check.
- ensuring workers keep the site tidy as part of the written site rules.
- use of slip-retardant footwear.

12.12.11 Hand-operated and power tool use

The Main Contractor shall manage hazards associated with hand-operated and power tool use by ensuring that:

- all tools conform to provisions of OSHA 2007 *sec 76 (1)*.
- tools are used only for the work for which they have been designed.
- tools are operated only by workers who have been authorized and given appropriate training.
- power tools are provided with protective guards and shields.
- safe operating procedures are established and used for all power tools.
- every power-driven tool is provided with adequate means, immediately accessible and readily identifiable to the operator, of stopping it quickly and preventing it from being started again inadvertently.
- there is regular checking of all tools to ensure they are in a safe working order.
- all electrical tools are recorded in a tag and testing register.
- electrical tools are tested and tagged every 3 months.

any issues identified with power tools are communicated to workers through a toolbox meeting.

Before using power tools, the Main Contractor must ensure that:

- electrical connections are secure.
- electricity supply is through an RCD.
- safety guards are in position.
- the machine is switched off before activating the electricity supply.
- appropriate PPE is used as required by the manufacturer's guidelines or as guided by the safety manager.

The Main Contractor shall require workers to report any issues with power tools to the safety officer/manager. Unsafe tools shall be tagged and removed from service.

12.12.12 Traffic Safety

The Main Contractor shall ensure prevention and control of traffic-related injuries and fatalities through:

- Designing and implementing a concise traffic management plan.
- Emphasizing safety aspects among drivers.
- Improving driving skills and requiring licensing of drivers.
- Adopting limits for trip duration and arranging driver rosters to avoid over exertion.
- Avoiding dangerous routes and times of day to reduce the risk of accidents.
- Use of speed control devices (governors) on trucks, and remote monitoring of driver actions.

- Minimizing pedestrian interaction with construction vehicles.
- Collaboration with local communities and responsible authorities to improve signage, visibility, and overall safety of roads.
- Employing safe traffic control measures, including road signs and flag persons to warn of dangerous conditions.

12.12.13 Waste Management

The Contractor should implement measures to minimize waste and therefore develop a waste management plan which should include but not be limited to the following: -

- Contractor to develop and implement a Waste Management Plan (outlining the waste generation activities, waste types and volumes expected, storage, collection, transportation, recovery and disposal programme) before start of the project
- Collecting litter and managing it accordingly/as per waste management and recovery plan. The construction site should be kept clean, neat and always tidy.
- No burying or dumping of any waste materials, metallic waste, litter or refuse should be permitted.
- Incorporating recyclable materials to reduce the volume and cost of new materials.
- Provision of bottle and can trash disposal receptacles at parking lots designated as hoarding sites for the project to avoid littering.
- Managing sediment and sludge removed from storm drainage systems maintenance activities as hazardous or non-hazardous waste based on an assessment of its characteristics.
- Sub-contract a NEMA licensed waste handling firm to collect solid wastes (that cannot be reused or recycled) on a regular basis and dispose of in a NEMA approved disposal site or recycling facility.

12.12.14 Disease Prevention

A. Occupational diseases

To mitigate the risk of occupational diseases, the Main Contractor shall cause pre-employment and periodic medical examinations to be carried out among workers by a Designated Health Practitioner as outlined in the OSH (Medical Examination) Rules, 2005.

B. Communicable diseases such as HIV/AIDS

The Main Contractor shall launch a HIV/AIDS control program that will provide awareness and education to workers. In partnership with government and non-governmental organizations, voluntary counselling, testing and distribution of condoms among workers shall be achieved.

C. Vector-Borne diseases

The Main Contractor shall put in place a pest and vermin control program to ensure insects and rodents are eliminated within the construction site.

13 CONCLUSION AND RECOMMENDATION

The ESIA study has established that the proposed hotel development by Freight Lane Hotel Limited is a worthwhile investment; it will contribute significantly to the provision of guest accommodation rooms with close proximity to Jomo Kenyatta International Airport and by extension spur economic development. This will be achieved through the previously discussed positive impacts namely, growth of the economy, boosting of the informal sector during the construction phase, provision of market for the supply of building materials, employment generation, increase in government revenue, optimal use of land and provision of modern and affordable guest Accommodation rooms.

The proponent shall be committed to putting in place several measures to mitigate the potential negative environmental, safety, health and social impacts associated with the life cycle of the proposed project. It is recommended that in addition to this commitment, the proponent shall focus on implementing the measures outlined in the EMP as well as adhering to all relevant national and international environmental, health and safety standards, policies and regulations that govern the establishment and operation of such projects. It is expected that the potential positive impacts arising from the proposed development shall be maximized as much as possible. These measures will go a long way in ensuring the best possible environmental compliance and performance standards.

It is our recommendation that the project be allowed to proceed provided the mitigation measures outlined in the report are adhered to, the Environmental Management Plan and Environmental Monitoring Plan is implemented, and the developer adheres to the conditions of approval of the project that will be given by NEMA.

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15 ANNEXES

- Annex 1. Certificate Of Incorporation**
- Annex 2. KRA PIN Certificate**
- Annex 3. Copy of Land Ownership Document**
- Annex 4. Architectural Drawings**
- Annex 5. Invitation letter to the Key Stakeholders' meeting invitation letter**
- Annex 6. List of attendance for the public meeting**
- Annex 7. Minutes of the Public Meetings**
- Annex 8. Change of Use**
- Annex 9. Public Participation Questionnaires**
- Annex 10. Bill of Quantity**
- Annex 11. Baseline Ambient Air Quality Measurement Report**
- Annex 12. Baseline Noise Measurements Report**
- Annex 13. Traffic Impact Assessment Study**
- Annex 14. AWEMAC NEMA Practicing License**
- Annex 15. Lead Expert NEMA Practicing License**



REPUBLIC OF KENYA

Company Reg No. **PVT-PJUYQLKM**

Application ID. **CN-XKSZD7**

CERTIFICATE OF CHANGE OF NAME

I hereby **CERTIFY**, that-

AKSAYA HOTELS LIMITED

having, with the sanction of the SPECIAL RESOLUTION of the said Company, and with the approval of the REGISTRAR OF COMPANIES, changed its name, and is now called:-

FREIGHT LANE HOTEL LIMITED

and I have entered such new name in the Register accordingly.

Given under my hand at Nairobi this **17 November 2023**

.....
Registrar Of Companies

This is a system generated certificate. To validate this document send the word **BRS** to **21546**





No. PVT-PJUYQLKM

CERTIFICATE OF INCORPORATION

I hereby **CERTIFY** that,

AKSAYA HOTELS LIMITED

is on this date 8 Nov 2023 Incorporated under the Companies Act, 2015 and that the Company is a **PRIVATE LIMITED COMPANY**.



.....
Registrar Of Companies

This is a system generated certificate. To validate this document send the word **BRS** to **21546**

PIN Certificate

Certificate Date : 16/01/2024

Personal Identification Number
P052274547E

This is to certify that taxpayer shown herein has been registered with Revenue Authority

Taxpayer Information

Taxpayer Name	FREIGHT LANE HOTEL LIMITED
Email Address	AKSAYAHOTELS2023@GMAIL.COM

Registered Address

L.R. Number : NA	Building : GRENADIER TOWER
Street/Road : WOODVALE CLOSE	City/Town : NA
County : Nairobi	District : Westlands District
Tax Area : Westlands	Station : West of Nairobi
P. O. Box : 1620	Postal Code : 00606

Tax Obligation(s) Registration Details

Sr. No.	Tax Obligation(s)	Effective From Date	Effective Till Date	Status
1	Income Tax - Company	08/11/2023	N.A.	Active
2	Value Added Tax (VAT)	01/01/2024	N.A.	Active

The above PIN must appear on all your tax invoices and correspondences with Revenue Authority. Your accounting end month is December unless a change has been approved by the Commissioner-Domestic Taxes Department. The status of Tax Obligation(s) with 'Dormant' status will automatically change to 'Active' on date mentioned in "Effective Till Date" or any transaction done during the period. This certificate shall remain in force till further updated.

CF 119192



REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

(No. 3 of 2012, Section 108)

THE LAND ACT

(No. 6 of 2012)

THE REGISTRATION OF TITLES ACT (Cap. 281) (Repealed)

THE GOVERNMENT LANDS ACT (Cap. 280) (Repealed)

THE LAND TITLES ACT (Cap. 282) (Repealed)

CERTIFICATE OF TITLE

Title No. **IR.197934** Term: **66** Years, From: **01/06/2018**

Annual Rent Kenya Shillings: **One hundred and eighty eight thousand, three hundred and sixty only**
(188360.00) (Revisable)

I hereby certify that **WESTLANDS TRIANGLE PROPERTIES LIMITED of NAIROBI Post Office Box Number**
578-00606

in the Republic of Kenya, pursuant to **a Lease** is now
registered proprietor(s) as lessee(s) from the Government of the Republic of Kenya for the term
of **Sixty six** years from the **1st** day of **June** two thousand **and Eighteen**

ALL that piece of land situate in the **City of Nairobi in Nairobi Area District**

containing by measurement **Nought decimal seven nine seven four Hectares (0.7974 Ha)**

(less road reserve of **-Nil-** Ha/Ac) or thereabouts and being land Reference


Number **9042/315** (original Number **-Nil-**) as delineated on Land Survey Plan

Number **352502** annexed **hereto**

SUBJECT however to the revisable annual rent of shillings One hundred and eighty eight thousand, three hundred and sixty only (188360.00) (Revisable) and to the Act(s) special conditions, Encumbrances and other matters specified in the Memorandum hereunder written.

IN WITNESS whereof I have hereunto set my hand and seal this 11th day of June

Two Thousand and Eighteen


Registrar of Titles
G. M. Muyanga*211

MEMORANDUM

1. The Land Registration Act, No. 3 of 2012
2. The Land Act No. 6 of 2012
3. The Special conditions contained in Lease No IR.197934/1
4. The Government Land Act (Cap. 280) (Repealed)
5. The Registration of Titles Act (Cap. 281) (Repealed)
6. The Land Titles Act (Cap. 282) (Repealed)


LAND REGISTRY - NAIROBI
REGISTRATION OF TITLE ACT
REGISTERED
11th June 2018
0920hrs
Registrar of Titles
G. M. Muyanga*211

THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THE TITLE

2 Transfer to Freight Lane Hotel Limited

1549

20-12-2023


S. C. Njoroge*294

REPUBLIC OF KENYA

EXTENSION OF LEASE

DISTRICT OF NAIROBI

Locality City of Nairobi

Reference Map South A.37 2
G.II d

Bearings	Distance
° ' "	Metres

Land Reference No 9042/315

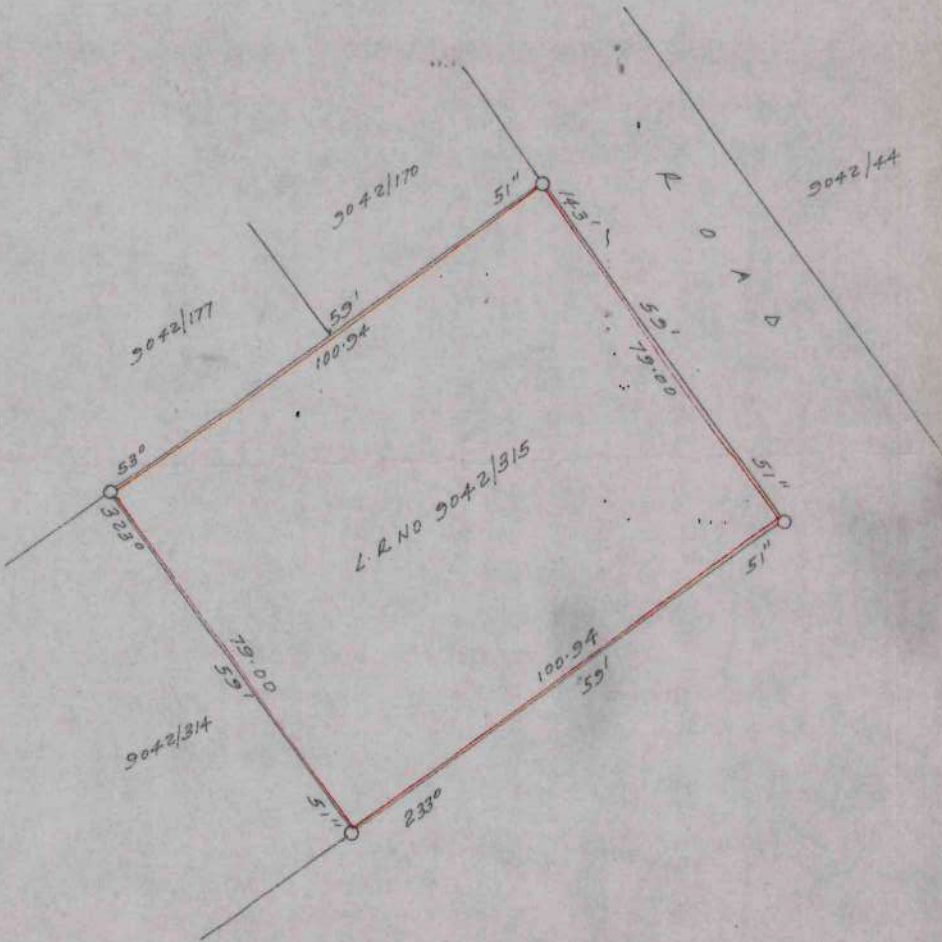
(Orig No

Sub division No (Orig No

of section No

Area = 0.7974 Ha (Approx)

IL 197934



J. G. HALAKE
Licensed Surveyor

F.R. No. 542/85
COMPS NO. 63532

Traced by

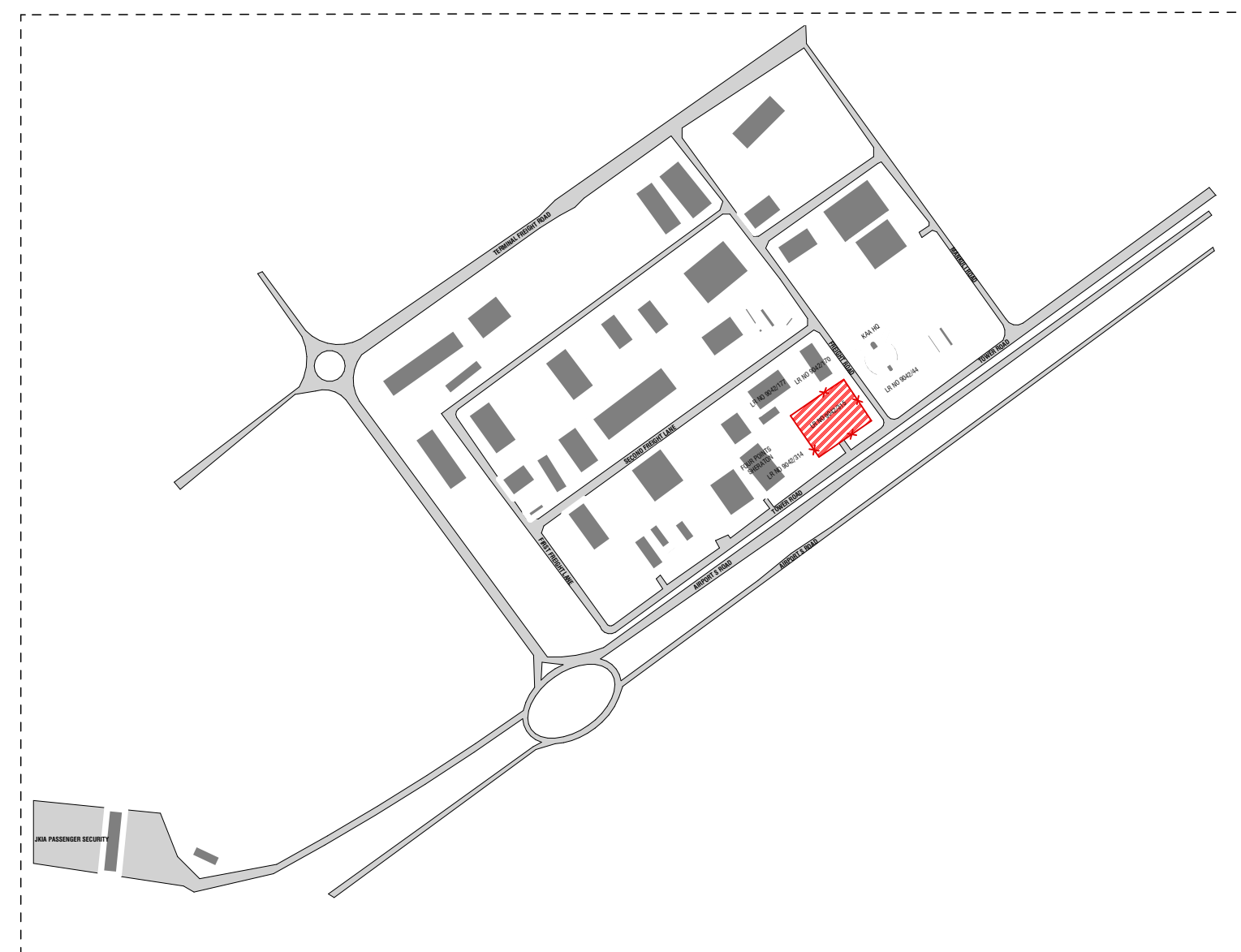
Compared by darwich



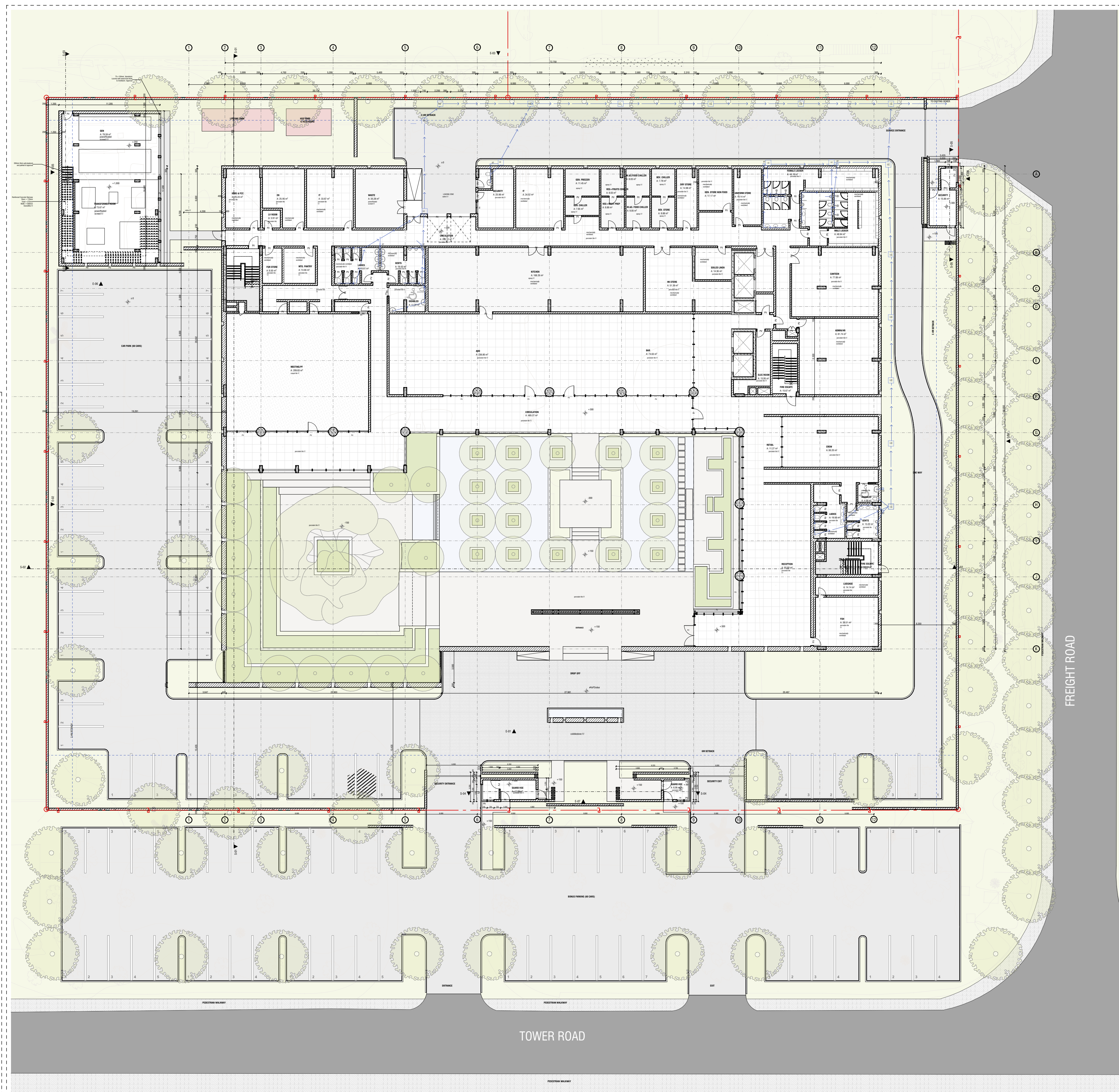
13TH JUNE 2018

Scale 1 in 1000

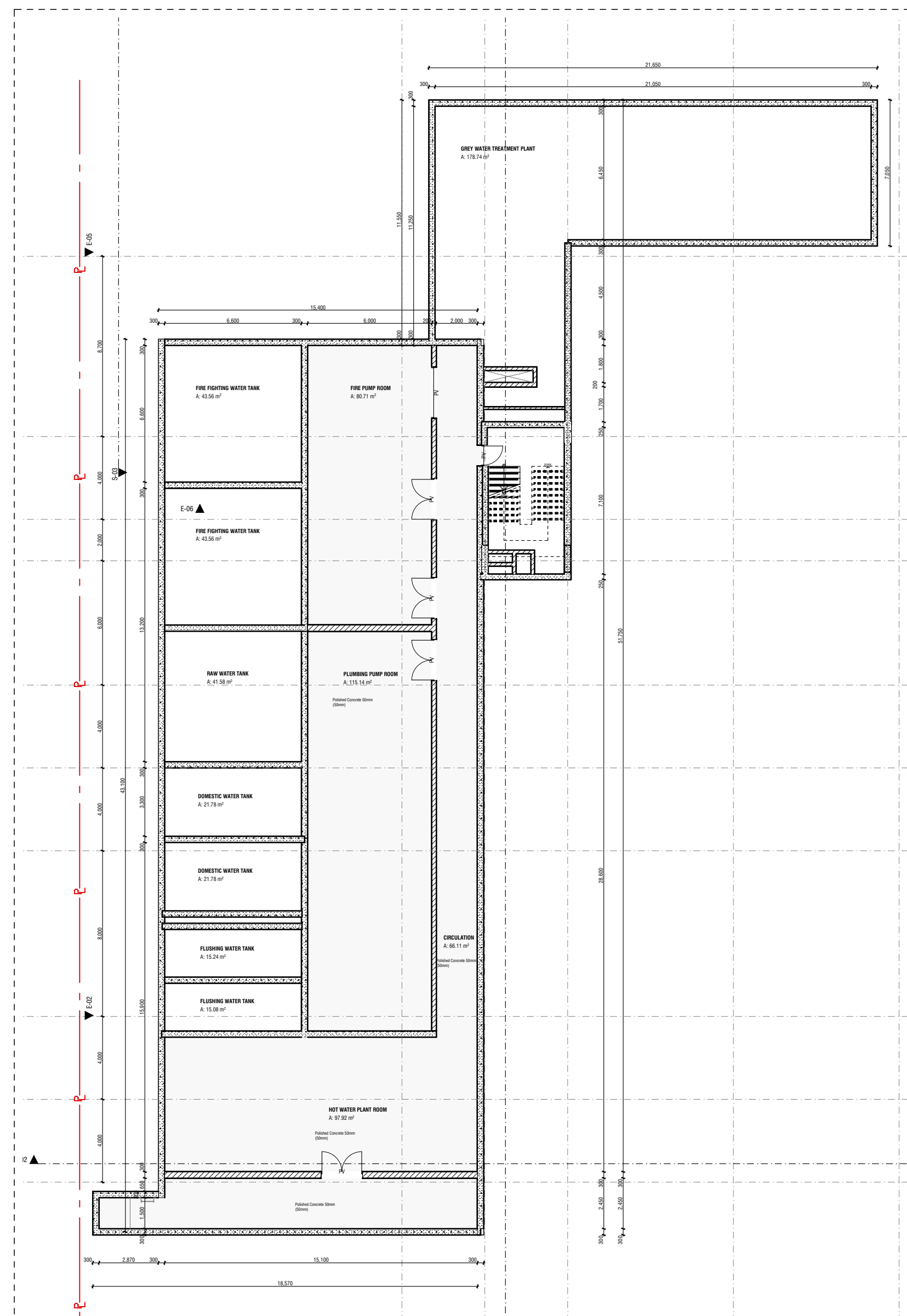
J. KIBIRU
for Director of Surveys
Nairobi 15TH MAY 2013
DEED PLAN No. 352502



W-110 Location Plan 1:500



Site Plan



Basement Level

[illegible]

NOTES

1. Do not scale of these drawings.
2. All dimensions must be confirmed on site
3. All discrepancies to be reported to Architect.
4. Dimensions in millimetres unless stated otherwise
5. Drawings must be read together with all relevant Structural, Mechanical, & Electrical Drawings.
6. All R.C. Structures to Structural Engineer's details.
7. No chasing or demolition of structural elements without written approval from Structural Engineer
8. Dimensions to centre of walls for gypsum partitions are to the centre of the stud
9. Dimensions in blue are lifting origins
10. Blue lines are Mechanical Services
11. Orange lines are Electrical Services

On behalf of the client:
Gurmukh Singh Panesar
Registration No. A1504

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Client	Freight Lane Hotel P.O. Box 1620 -00606, 3rd Floor Grenadier Tower Nairobi Kenya
--------	---

Architect

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Design Architect
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Project Manager
AJAX Consulting Ltd

Structural Engineer
Civil Engineering Design (K) Ltd

Quantity Surveyor
Mace YMR

Design MEP
Grune Designs

Local MEP
Infra Plus Ltd

Project No.: 23-73

Project Name: **FLH**
LR No 9042/315 , Nairobi, Kenya

Drawing Title:

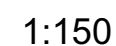
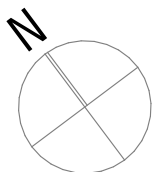
Location, Site Plan & Basement Plan

Scale: 1:250, 1:500, 1:200

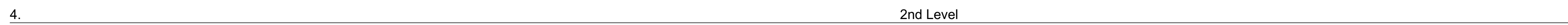
Date: 21/06/2024

Drawing No.: Revision:

AD-2.5.1

AD-2.5.2

AD-2.5.3



NOTES

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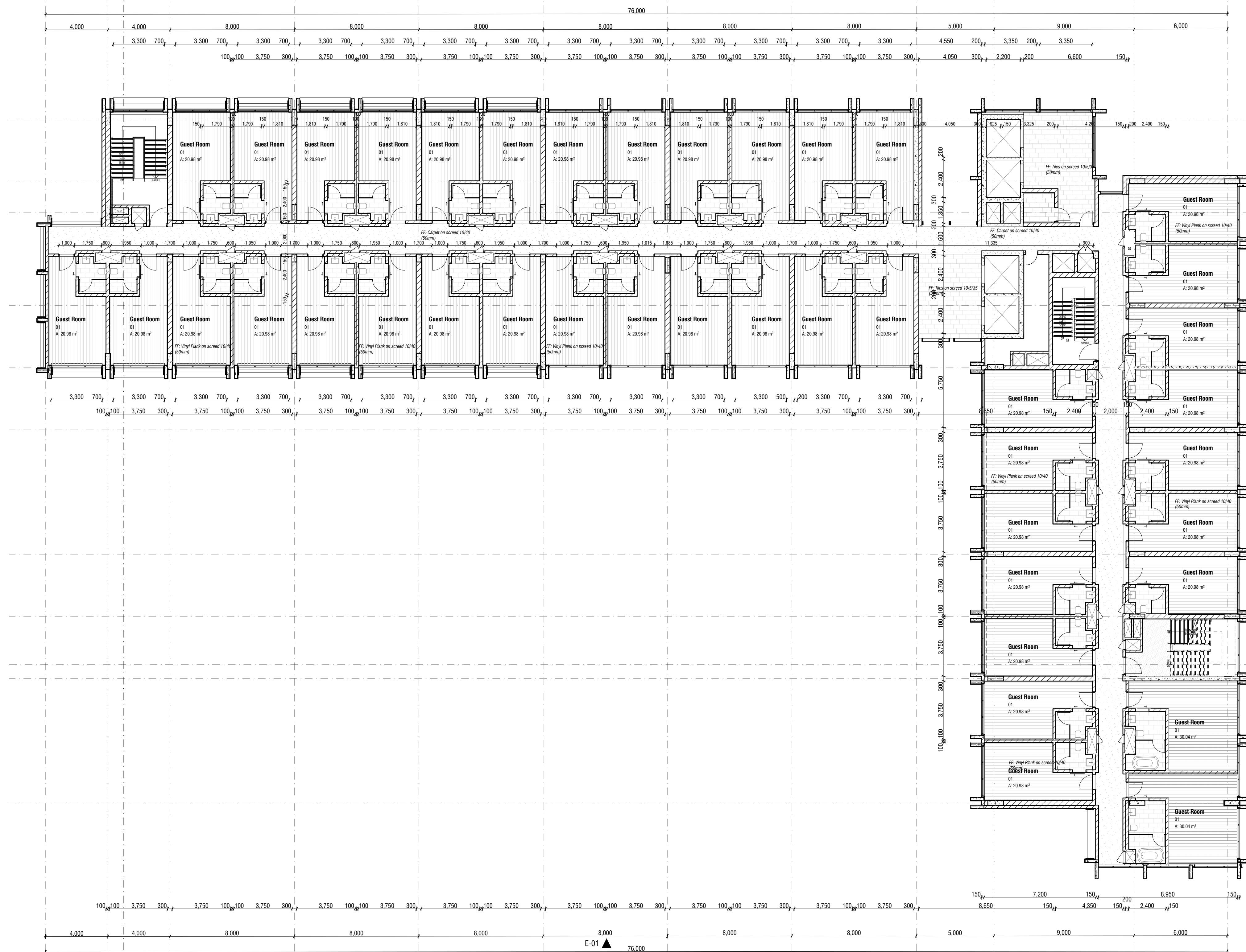
Local MEP

Infra Plus Ltd

Drawing Title:

Drawing No.: _____ Revision: _____

AD-2.5.5

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- ## NOTES
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Registration No. A1504

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Client **Freight Lane Hotel**
P.O. Box 1620 -00606, 3rd Floor Grenadier Tower Nairobi Kenya

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Design MEP

Grune Designs

Local MEP

Infra Plus Ltd

Project No.: 23-73
Project Name: FLH
LR No 9042/315 , Nairobi, Kenya

Drawing Title:

3rd Floor
Scale: 1:150

Date: 21/06/2024

Drawing No.: Revision:

AD-2.5.6



AD-2.5.7

[illegible]

NOTES

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Grune Designs

Local MEP
Infra Plus Ltd

Project No.: 23-73

Project Name: **FLH**
LR No 9042/315 , Nairobi, Kenya

Drawing Title

5th Floor

Scale: 1:150, 1:200, 1:100, 1:50

Date: 21/06/2024

Drawing No.:

Revision

AD-2.5.8



1:150

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Local MEP

Infra Plus Ltd

Project No.: 23-73

Project Name: **FLH**
LR No 9042/315 , Nairobi, Kenya

Drawing Title:

Sections
Scale: 1:150

Date: 21/06/2024

Drawing No.: Revision:

AD-2.5.12



AFRICA WASTE AND ENVIRONMENT MANAGEMENT CENTRE

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Email: awemac_ken@yahoo.com / adm@awemac.co.ke

Website: www.awemac.co.ke

AWEMAC

Leading Environmental and Social Advisors in Africa

30th July 2024

ATT: MR. HENRY OGOYE

Ag. Managing Director,
Kenya Airports Authority,
Head Office, Off Airport North Road,
P. O Box 19001-00501,
Nairobi, Kenya.

Dear Sir,

INVITATION TO THE KEY STAKEHOLDERS' CONSULTATIVE MEETING FOR THE INTEGRATED ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (IESIA) FOR THE PROPOSED FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA INTERNATIONAL AIRPORT, OFF MOMBASA ROAD, NAIROBI COUNTY, KENYA

The Proponent **Freight Lane Hotel Limited**, proposes to develop an Airport Hotel on Plot No. LR 9042/315 within Jomo Kenyatta International Airport (JKIA) in Nairobi County, Kenya. The proposed project will entail the construction of 180 guest accommodation rooms, a surface car park of approximately 120 parking lots, restaurant, lobby bar, meeting rooms, gym, rooftop swimming pool and support facilities.

As a key stakeholder, we invite you or your nominated representative to attend the **Key Stakeholders' Integrated Environmental and Social Impact Assessment consultation meeting**, planned as indicated below. The date, time and venue for the Key Stakeholders' Meeting is:

Venue: Crowne Plaza Airport Hotel within Jomo Kenyatta International Airport, Nairobi County

Date: Wednesday, 7th August 2024

Starting Time: 8:30 a.m.

The purpose of the consultation meeting will be to make a presentation on the proposed project and its likely positive and negative environmental and social effects and proposed mitigation measures. We will then receive oral or written comments from you or your authorized representative to integrate into the ongoing IESIA study so as to ensure the project's long-term sustainability.

Pursuant to Article 10(2) and 69(d) of the Constitution of Kenya 2010, section 58 of EMCA (Cap 387) on Integrated Environmental Impact Assessment and the Environmental (Impact Assessment and Audit) Regulations 2003, public and stakeholder engagement is an important exercise in the national values of governance for achieving the fundamental goals of sustainable development.

You are kindly requested to keep time.

For any inquiries, please liaise with us through our IESIA Consultant (Africa Waste and Environment Management Centre, AWEMAC - 0704333166/0784333166, awemac_ken@yahoo.com / adm@awemac.co.ke)

Yours Sincerely,



Prof. Jacob K. Kibwage, PhD
Director & Lead Environmental and Social Safeguards Consultant,
Africa Waste and Environment Management Centre (AWEMAC),
NEMA Firm of Experts (Reg. No. 0527).



AWENMAC





KEY STAKEHOLDERS' MEETING ATTENDANCE SHEET

INTEGRATED ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (IESIA) FOR THE PROPOSED FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA INTERNATIONAL AIRPORT, NAIROBI COUNTY, KENYA

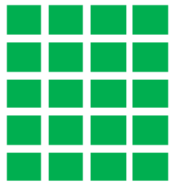
DATE: 14/08/2024 VENUE: CROWNE PLAZA ROOM 132

No	FULL NAME	POSITION & ORGANIZATION	PHONE NUMBER/ EMAIL ADDRESS	GENDER	I.D. NUMBER	SIGNATURE
1.	Candy Loyanae	AWENAC	0713514023 loyanae.candy@gmail.com	F	227699588	
2.	Peter Kivijuri	NCCG	0710340141 peter.kivijuri@nccg.co.ke	M	29993429	
3.	Lazarus Kivale	NCCG	0721264190 lazarus.kivale@gmail.com	M	21995016	
4.	Jeremiah Njeri	DAHL	0718686732 jeremiah.njeri@dahe.com	M	27364830	
5.	William Bangaye	Amulo Ltd	0794605276	M	22948041	
6.	SRIKANTH VADALATTU	Grand Innova District East African group	0722524754	M	22118440	
7.	STEPHEN KIMANI	SECURITE-MANAGEMENT DHL-GLOBAL	0780555425	M	9830777	
8.	NELSON MOSISI	FRIGHTWINGS MAINTENANCE	0721798775	M	14698763	
9.	VINCENT MAKOLIO	INFRAPLUS LTD	0720289261 vincent.makolio@infra-plus.co.ke	M	21975732	
10.	DEWIS KEISER	DB SCHENKER	0733677200	M	251881	
11.	Teresa Njoki	KCAA	0733282256	F	4236659	
12.	PURITY NJUE	VEGPAO	0714639100	F	13262761	

No	FULL NAME	POSITION & ORGANIZATION	PHONE NUMBER/ EMAIL ADDRESS	GENDER	I.D. NUMBER	SIGNATURE
13.	STELLA NISOGU	GRUENE PLAZA KATROBI AIRPORT MT STILLA 0798646819	F	202624		
14.	Moshack Ochung	Global Freight Forwarding 0722-243-391	M	8510492		
15.	HAAS ODHAMBO	EXPONATA FREIGHT CO INSURANCE Admin Support 0710309264	M	8010064		
16.	ISAACK OLWAL	KUEHNE + NAGEL 0727 266291	M	22348245		
17.	Christine Wadhwa	Grasp Design 0705108144	F	31535755		
18.	Gunnukh Panesar	Grasp Design 0723671007	M	25857343		
19.	Rohan Patel	Freight Lane India 0720630770	M	13428660		
20.	Omura Alex	Infraplus 0726783197	M	28881294		
21.	Siddharth Gikhal	AZAA 0710281085	M	333747		
22.	Grace Maira	AKEMA - Nib Office 0721619684	F	22262373		
23.	FLORENCE MURUTHI	PORT HEALTH - JULIA 0722801617	M	5746127		
24.	Edwin Owino	Mykon Express edwin.owino@mykonexpress.com	M	10827515		
25.	SIMON RUTUT	Environment Officer / WPC 0722801617	M	10012487		
26.	Mateve Aloys	Nairobi City County GOVERNMENT 0722385776	M	20052490		

No	FULL NAME	POSITION & ORGANIZATION	PHONE NUMBER/ EMAIL ADDRESS	GENDER	I.D. NUMBER	SIGNATURE
27.	Eng. Rosebrenda Muchiga	Auenmac	0721289694 rosebrendahegma@gmail.com	F	29714925	
28.	Grace Kinutho	AWENMAC	0798570396 gracekinutho@gmail.com	F	30890574	
29.	Caroline Ntantaka Nkanyo	AKENMAC	0704 833 100	F	3128531	
30.	Prof. Jacob K. Kibwaya	ES/A Team Kendani, Muritete	0722479061	M	8773303	
31.						
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Minutes of the Public Meetings



AFRICA WASTE AND ENVIRONMENT MANAGEMENT CENTRE

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Website: www.awemac.co.ke

AWEMAC

Leading Environmental and Social Advisors in Africa

MINUTES FOR THE KEY STAKEHOLDERS MEETING FOR ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT NO.LR 9042/315 WITHIN JOMO KENYATTA INTERNATIONAL AIRPORT, OFF MOMBASA ROAD IN NAIROBI COUNTY, KENYA HELD AT CROWNE PLAZA NAIROBI AIRPORT, AN IHG HOTEL, ON 7TH AUGUST 2024 FROM 9.00AM-11.00AM

MEMBERS PRESENT

(Attached as Annex)



AGENDA

1. Preliminary
2. Introduction of participants and welcoming remarks
3. Purpose of the meeting
4. Project design and presentation
5. Key stakeholder's comments, opinions, suggestions and responses by the project team

6. Concerns/questions and answer sessions and responses
7. AOB and adjournment

MIN 1- 07/08/2024: PRELIMINARY

The lead Environmental and Social Impact Assessment (ESIA) consultant for the proposed project called the key stakeholder meeting to order at 9.05am. After briefly introducing himself, he invited Ms Caroline Mokaya from AWEMAC to lead with a word of prayer.

MIN 2- 07/08/2024: INTRODUCTION OF PARTICIPANTS AND WELCOMING REMARKS

This was followed by a round table introduction by the client representative, project manager, project design team, Mechanical, Electrical and Plumbing (MEP) Consultancy team, ESIA Consultancy team, and stakeholders in attendance. The ESIA Lead Consultant gave a brief history of Africa Waste and Environment Management Centre (AWEMAC). He further welcomed the participants and appreciated them for honoring the invitation to attend the consultative meeting and encouraged them to express their views for a fruitful engagement.

MIN 3 - 07/08/2024: PURPOSE OF THE MEETING

The Lead ESIA consultant emphasized on the necessity of convening the meeting so as to inform the stakeholders about the proposed project prior to its commencement, in compliance with legal requirements. Such laws include the Kenyan Constitution, 2010, and the Environmental Management and Coordination Act (EMCA) CAP 387 among others. He emphasized that the Stakeholder meeting was part of the Public Participation process, and would help enhance the project benefits. Furthermore, he underscored the significance of the Environmental and Social Impact Assessment (ESIA) exercise.

The Lead ESIA consultant highlighted the fundamental concept of sustainable development that is aimed at mitigating negative impacts to safeguard needs of the future generations. He noted that the stakeholders are required to give their views on the proposed development which would assist in improving the project designs to enhance the sustainability of the project activities through the construction, operation and decommissioning phases and increase benefits to the local community. These suggestions would aid in formulating a budget for mitigation and implementation, ensuring alignment with goals on sustainable development, water conservation, waste management, and noise pollution control.

MIN. 4 - 07/08/2024: PROJECT DESIGN PRESENTATION

The project lead architect from Grasp Design Limited, Mr. Gurmukh Paresar, presented the proposed project design to all stakeholders in attendance. This provided an overview of the planned construction. The following key points were highlighted:

- The project is an Airport Hotel with a gross floor area of approximately 10,000 m² located at the junction of Freight Lane and Third Freight Lane in the Airport Zone.
- The proposed hotel will house 180 guestrooms and other support facilities i.e. Surface Parking (108 parking slots), All Day Dining, Lobby Bar, Meeting Rooms, Gym, Rooftop Swimming Pool, Back of House (BOH) facilities and a structure to house Mechanical, Electrical and Plumbing (MEP) facilities such as Variable Refrigerant Volumes (VRVs), Generators etc.
- The Basement Floor will contain Water Storage (for Domestic Water, Raw Water, Flushing Water and for Fire Fighting), Hot Water Heating Plant Room, Grey Water Treatment Plant and Pump Rooms.

- The proposed hotel building will be within the height restrictions by Kenya Civil Aviation Authority, with 6 Floors. The building itself will be 25m high with 3m left for services. Altogether, the building will be 28m high.
- The Ground Floor will host facilities such as Back of House (Laundry, Waste, IT, Engineering, Employee facilities), Kitchen + All Day Dining, Meeting Rooms and the Reception.
- The materiality will compose of coral stone, timber and external render.
- The proposed project has a water demand of 131 m³ per day and will be served with water supply from: Nairobi City Water and Sewerage Company (NCWSC), Borehole, Grey Water Treatment Plant (GWTP) (100 m³). 84m³ per day will be sourced from the GWTP
- The estimated power demand for the proposed project is 80A on 11KV. An oil type 1500KVA transformer and 2 no. oil type LT Voltage Regulators will be located on site. Connection will be mainly on the Kenya Power Line with backup power using Diesel Generators (750 KVA each) with acoustic enclosures. Solar Power will be utilized. A maximum of 550 Watts Monocrystalline panels will be provided for Solar PV.
- Liquefied Petroleum Gas (LPG) & High-Speed Diesel (HSD) Tanks (12 kiloliters per day, 48-hour storage) will be located outdoors at the north of the site. Kitchen gas leak detector system and shut off will be included.
- Lightning Protection system shall be as per Faraday Cage method with down conductors in structural columns and each conductor linked and connected to the earthing system. The conductors will be within the 28M Limit.
- The Façade treatments for the proposed project will include: Wood-look Aluminum Louvres, Low reflectivity acoustic glass for the windows on the Façade. 10.76mm laminated glass (8mm Clear Glass, 0.76 PVB, 6mm Clear Glass with solar control)
- The fire-fighting strategy for the proposed development was also outlined as follows: Water based sprinkler firefighting system, a breeching inlet for external fire services will be provided, provision of Fire hose reels, portable extinguishers in spaces, fire alarm system and a pressurized emergency escape staircase with fire rated fire doors, and provision of Fire Signage.
- The Security Strategy will include: Risk Assessments, Screening of all persons entering the project at the main gate and main entrances of the building, Security personnel & equipment (Closed-Circuit Television (CCTV), boom barrier gates, metal detectors, baggage scanners) and Emergency preparedness training.
- Sustainability components to be adopted by the project shall include- Solar lighting, establishment of a Courtyard (below and upper levels) and a Grey Water Treatment Plant. Use of low-Volatile Organic Compounds (VOC) paints, recycled materials, and sustainable wood products, using native plants that require less water and maintenance, adopting water efficient irrigation systems, having smaller and shallower water features that minimize water evaporation and run off shall also be adopted
- The proposed hotel will be connected to the main sewer system.
- In response to the context of the site being located within the airport zone the following measures will be put in place: Obstruction Light of Medium Intensity on the roof of the building, Monocrystalline Solar Panels oriented in the East - West direction with an anti -reflective coating to avoid glare, Bird Control mechanisms and Low reflectivity Glass on Façade.
- Bird Control strategies to be utilized in the design will include: Planting bird repellent plant and tree species (such as daffodils, lavender, peppermint and thyme), utilizing moving water features such as fountains that are a deterrent to birds, slopes on niches and copings within building for birds not to nest on them, Bird Spikes on ledges that birds might perch on.
- Energy saving measures accounted for during the design are: Energy efficient Lighting (saving up-to 50%) Heating, Ventilation and Air Conditioning (HVAC) systems will be of inverter type that utilize Variable Refrigerant Technology, and use of Solar Energy.

- Water saving strategies for enhancing sustainability include: use of water efficient fittings and equipment (such as shower-heads, faucets, washing machines), use of water efficient irrigation systems, and Grey water recycling.
- To manage solid waste, the proponent will practice recycling and will contract a NEMA approved waste collector to collect and dispose of waste.

MIN. 5 - 7/08/2024: ESIA PROCESS

The Lead ESIA consultant then gave a presentation on the Environmental and Social Impact Assessment (ESIA) process. He gave a brief history explaining the airport zonation for context.

He highlighted the project location, neighboring establishment and sustainable technologies to be incorporated in the project. These addressed water conservation, energy conservation, solid and liquid waste management, facilities for the disabled as well as external smoking areas. After explaining the ESIA scope and objectives, he highlighted the fact that preliminary studies had been carried out, and the project was classified as a high-risk project since it is meant to occupy an area that is more than 10,000 m² with 180 rooms thus requiring a detailed Environmental and Social Impact Assessment Study.

Moreover, he highlighted the related studies that were ongoing and these included: Noise Mapping, Baseline Ambient Air Quality Assessment and Traffic Impact Assessment. A change of user of the project site from its current use to hotel and offices had been obtained whereas approval from Kenya Airports Authority on approval of the site for development and Kenya Civil Aviation Authority on height restriction were pending. He also noted that the ESIA consultancy team documented baseline information for the project site, and identified relevant policies, laws and regulatory framework as well as Multilateral Environmental Laws.

The ESIA Consultant further outlined the potential identified positive and negative impacts of the project during the construction, operational and decommissioning phases of the project. Some of the Positive impacts highlighted included: Job Creation, provision of market for supply of materials, optimized land use, economic gains at national and local levels, improvement of aesthetics, and business prospects for construction materials and services among others. In addressing negative impacts, the consultant acknowledged concerns such as vegetation clearance especially the acacia trees and bushes on site during construction, solid and liquid waste management, noise and vibrations from demolition and construction works, air pollution, increased traffic, and occupational health and safety risks. The ESIA Consultant shall provide specific mitigation measures to address the concerns, with ongoing refinement based on stakeholder input.

Following the identification of negative impacts and corresponding mitigation measures, responsibilities would be assigned to relevant parties through the Environmental and Social Monitoring Plan. The cost of implementation would be influenced by the mitigation measures put in place and the proponent would be responsible for the execution. Environmental monitoring would be conducted throughout the construction and operation phases, focusing on parameters such as air quality, replanting of vegetation and noise levels to ensure compliance and sustainability of the project. The Lead ESIA Consultant advised the proponent to include a contractor clause on strict adherence of the Environmental Management Plan developed from the ESIA Study.

The ESIA lead consultant concluded the presentation by outlining the subsequent steps which shall include data analysis, interpretation, and the finalization of the report within a timeframe of two weeks. Following report submission, National Environment Management Authority (NEMA) would disclose the report to the public for a 30-day comment period before Approval by the Authority.

Stakeholder views were welcomed to ensure comprehensive consideration in the project's implementation.

MIN. 6 - 07/08/2024: KEY STAKEHOLDERS' COMMENTS, OPINIONS, SUGGESTIONS & RESPONSES BY PROJECT TEAM

SN	ISSUE	DESCRIPTION OF ISSUE	REMARKS
1.	Traffic Impact	<p>VegPro Limited representative sought to know the route the contractor would use while ferrying construction materials to the project site. She further wanted to know how this will impact traffic in the Airport area.</p> <p>Kuhne and Nagel representative also raised a similar concern on traffic and sought to know how the proponent would ensure that there is no conflict with the neighboring cargo operating companies due to traffic in the area.</p>	<p>The project architect noted that they would consider using the least private route which is freight road and link up with freight terminal road or as Kenya Airport Authority advises.</p> <p>The Project Architect noted that no major conflict is anticipated from the proposed development. He further noted that a Traffic Management Plan which will consider timing of the movement of construction vehicles in and out of the site in consultation with the neighbors would be developed. The delivery of construction materials will be timed to ensure that it this does not clash with the neighboring cargo operating company's delivery timelines.</p> <p>The project proponent noted that the access road/entrance gate for the proposed development will be located along the freight road. This will have no impact to the neighbouring cargo operating companies during the operational phase.</p>
2.	Waste Management during construction phase	<p>Nairobi City County Representative from the Environment Department sought to know how the client intends to handle excavated soil. He noted that dumping of waste in non-designated areas including Nairobi rivers which are heavily polluted by raw sewage, effluent from industries, black soil, unplanned settlements and uncollected garbage is a common practice. He further advised the client to ensure the excavated material gets to the designated point especially for the black soil.</p> <p>NEMA County representative noted that illegal dumping of soil had become a menace. She advised for the contractor to consider dumping the excavated soils in abandoned quarries.</p>	<p>The Project Architect noted that the project is currently at the design stage. Once the contract has been awarded, one of the criteria for shortlisting the NEMA Licensed contractor would be verification and Approval of the disposal site for excavated soil or any other waste generated during the construction phase. The contractor will be advised to dispose of excavated soil in an appropriate manner such as abandoned quarries that require backfilling.</p> <p>The client shall also monitor the recycling of waste during the construction phase.</p> <p>The ESIA Consultant advised the client to track/monitor the excavated material to the disposal point in order to protect the proponent's and business brand which will be tarnished as a result of poor waste disposal.</p>
3.	Waste Management during operation phase	<p>Kuhne and Nagel representative sought to know the plans that had been put in place to manage electronic waste generated by the</p>	<p>The ESIA consultant noted that they would recommend for the client to separate all waste at</p>

		<p>facility during the operational phase.</p> <p>Port Health Representative also raised a similar concern. She wanted to know whether the client had a provision for sorting of waste at source, recycling part of the waste, an ideal place for waste storage and where the waste will be disposed of.</p>	<p>source. There will also be a provision for spaces/bins for sorting of waste within the proposed development. The waste will be then collected by NEMA licensed waste handler for recycling/disposal. He further noted that the client will be advised to partner with a company licensed by NEMA to handle Electronic Waste as well as any other waste generated by the facility.</p> <p>The Project Architect noted that while contracting a NEMA Licensed waste contractor, consideration will be made to contractors that can handle electronic waste</p> <p>The client representative noted that the proposed development will be a Courtyard by Marriot brand. He further noted that in addition to compliance to the international/national requirements the development will further comply to Marriot standards</p>
4.	Effluent Discharge	<p>NEMA representative was curious about management of effluent discharge that will be generated from the hotel operations.</p>	<p>The project MEP representative responded by informing stakeholders that provisions had already been made to install a Grey Water Treatment Plant of a capacity of about 100 cubic metres to treat effluent. This treated effluent will then be used to irrigate the hotel's landscaped areas and for flushing toilets.</p> <p>The Project Architect further noted that the hotel will also be connected to the Nairobi City County Sewerage System.</p>
5.	Water Sources	<p>NEMA representative was curious about the source of water for the proposed development.</p> <p>She further sought to know if rain water harvesting will be practiced.</p>	<p>The Project Architect noted that the proponent intends to drill a borehole on site. This will be supplemented by water from the Grey Water Treatment Plant (GWTP) and supply from Nairobi Water and Sewerage Company.</p> <p>The estimated water demand per day is estimated to be 131 cubic metres. 84 cubic metres will be sourced from the Grey water treatment plant, after treatment. The remaining 47M³ will be sourced from Nairobi City Water and Sewerage Company (NCWSC) and a borehole drilled on site.</p>

			<p>The project MEP Team Representative noted that since more than 50% of the expected daily water demand would be sourced from the GWTP, rain harvesting had not been considered at the stage but downpipes had been provided to allow rainwater harvesting for future considerations.</p>
6.	Occupational Safety and Health	<p>DOSHS Representative brought out and spoke at length about health and safety concerns. He informed the proponent that accidents and fatalities were a common occurrence on construction sites and that they should put in the following to safeguard the health and safety of workers:</p> <ol style="list-style-type: none"> 1) Comply with Occupational Health and Safety Act of 2007 and Factories and Machinery (Building Operations and Works Of Engineering Construction) (Safety) Regulations, 1986. 2) Register the site as a workplace with OSHA within 7 days of commencement. 3) Appoint a trained and qualified safety officer to enforce safety measures. 4) Establish a Safety and Health Committee; 5) Conduct regular training on first aid, firefighting and occupational health and safety; 6) Ensure that the project contractor is competent and keen when it comes to safety issues. 7) Ensure that the contractor has a medical cover for their workers as stipulated in the Work Injury Benefits Act (WIBA), 2007. 8) Conduct a pre-employment medical examination for the workers; 9) Ensure all plants and equipment are examined before use and within the prescribed timelines; 10) Provide workers with the appropriate PPE. 11) Provide welfare facilities for the workers 12) Provide scaffolding and fall arrestors for Work at Height (WAH) and enforce all necessary measures to prevent falls from height.; 13) Conduct risk assessment to map all potential risks; 14) Enforce Permit to Work (PTW) systems for risky jobs such as WAH, Excavation and Hot Works. 	<p>The Project Architect assured the stakeholders that they were keen on safety and reiterated the DOSH representative's remarks on having 0 fatalities. The hotel will also adhere to local and international standards (similar to Marriot's) on safety.</p> <p>He further noted that they intend to work with a "safety conscious" contractor and to hire a NEBOSH/Occupational Health and Safety certified safety officer to enforce safety measures.</p> <p>The project MEP Representative noted that the appointed Health and safety officer will be required to conduct toolbox talks and guide the project workers on safety related issues on the site.</p> <p>The ESIA Consultant concluded by stating that the ESIA Consultancy team shall develop an Occupational Health and Safety Management Action Plan. The client will be advised to ensure the contractor complies to the plan.</p>

		He concluded by advising the proponent to ensure their project goal is having 0 fatalities on site.	
7.	Relevant policies, legal and legislative Frameworks.	Port Health representative noted that the presentation, was missing some relevant laws that would assist her in monitoring some key public health and safety issues. These included: Public Health Act Cap 242, Food Drugs and Chemical Substance Cap 254 among others.	The ESIA Consultant responded to the concern by noting that the presentation entailed a summary of key laws and policies. The detailed ESIA Report would further cover all relevant laws and policies.
8.	Climate Change	Climate Change implications from the project was a crucial concern raised by the stakeholders.	<p>The Project Architect addressed this by highlighting the sustainability measures put in place which include:</p> <ul style="list-style-type: none"> ⌘ The Grey Water Treatment Plant which will provide 84m3 of water per day, which is more than half the expected daily demand of 131m3. ⌘ Solar Power Utilization ⌘ Proper Waste Management ⌘ Installation of energy efficient lighting systems <p>The ESIA Consultant advised the client to consider applying for carbon credits as they intend to implement green projects within the proposed development.</p>
9.	Accessible Facilities	Kuhne and Nagel Representative wanted to know the measures that had been put in place to aid People living With Disabilities especially during emergencies where the use of lifts is restricted.	<p>The project architect noted that the design has incorporated accessible facilities for the visually impaired and physically disabled. These will include but not limited to: accessible washrooms and visual/auditory alert systems.</p> <p>With regards to response to any emergency, the design has catered for safe holding areas next to fire escape stairways for people on wheelchairs to take refuge as they await evacuation among other safety measures.</p>
10.	Drainage and flooding	Crowne Plaza Airport Hotel Representative raised a concern on the effect the project would have on surface runoff and drainage while referring to the recently witnessed flooding during the El-nino rains.	The Project Architect noted that the site will not have any impact on surface run off compared to the existing condition as the ground coverage allows for sufficient percolation of ground water. The site is also not at risk of flooding as it is significantly higher than the areas that flooded and is not near any water bodies

			<p>He further noted that no major issues will be anticipated from the proposed development since it has no basement level. The design of the hotel and courtyard to be specific allows for water to seep back into the aquifer. The proposed hotel will also have lots of green spaces to reduce surface runoff.</p>
11.	Bird Control	<p>Nairobi County Government representative from the Environment department sought to know the measures that will be adopted by the client to protect birds nesting on a tree that is close to the project site.</p>	<p>The Project Architect noted that birds within the airport area are a hazard due to bird strikes by aero planes. The proponent will have measures in place that discourage nesting of birds on site.</p> <p>He further listed the Bird Control strategies utilized in the design which include:</p> <ul style="list-style-type: none"> • Planting bird repellent plant and tree species such as daffodils, lavender, peppermint and thyme. • Utilizing moving water features such as fountains that are a deterrent to birds. • Slopes on niches and copings within building for birds not to nest on them. • Bird spikes on ledges to deter birds from perching on them. • Enclosed waste room for efficient management and bird control.
12.	Pest Control	<p>Port health representative raised a concern on possibility of the proposed development being infested by pests and rodents due to its proximity to bushes. She further requested the proponent to address how the development plans to deal with cockroaches, rats and mosquitoes which are a menace in the area.</p>	<p>The Project Architect noted that the following measures will be put in place to deter pests and rodents from the proposed facility:</p> <ul style="list-style-type: none"> • Waste generated by the facility will be sorted internally and organic waste will be stored at temperature control to discourage any pest and rodents from the site. • Waste storage room will be sealed and have provisions for temperature control to deter entry of rodents and pests • The waste storage room shall be sealed to avoid entry of rodents. • The NEMA licensed waste handling company will be advised to collect and dispose off waste out of

			<p>site frequently.</p> <ul style="list-style-type: none"> • Comply with health and safety standards for Marriot brand toward pest control. <p>The ESIA consultant noted that they shall recommend mitigation measures to prevent pests and rodents in the detailed study for consideration by the client.</p>
13.	Security	The issue of security during the different project phases was also raised by the stakeholders.	<p>The Project Design Team responded by echoing the Security Strategy that is outlined below:</p> <ul style="list-style-type: none"> • Risk assessments • Screening of all persons entering the project at the main gate and main entrances of the building. • Security personnel & equipment - CCTV, boom barrier gates, metal detectors, baggage scanners. • Emergency preparedness training.

MIN 7 - 07/08/2024: A.O.B & ADJOURNMENT

The ESIA Lead consultant noted that the ESIA Study report will entail a comprehensive Environmental and Social Management Plan for construction, operation and decommissioning phases for implementation by the proponent or contractor. Upon review of the report by NEMA and other lead agencies, NEMA will issue a license with conditions to be adhered to by the contractor and proponent.

He concluded by thanking the attendees for their contributions and assured them that their concerns and views would be taken into consideration to ensure sustainability of the project. He invited the client representative for a vote of thanks.

The client representative expressed gratitude to all attendees for their participation and noted that they intend to make the project more sustainable and viable. There being no other business, the meeting ended at 11.15 am with a word of prayer from Ms. Caroline Mokaya.

**Minutes
by:**

Prepared

Ms. Caroline Mokaya

Name

ESIA Technical Assistant

Position



Signature

**Minutes Reviewed
and Approved by:**

Prof. Jacob K. Kibwage

Name

ESIA Lead Consultant

Position



Signature

City Hall Way, City Hall
www.nairobi.go.ke



P.O.Box 30075-00100
Nairobi, KENYA

NAIROBI CITY COUNTY

THE PHYSICAL AND LAND USE PLANNING ACT (No. 13 of 2019)

Registered Number of Application **PLUPA-COU-001467-N**

NOTIFICATION OF APPROVAL OF APPLICATION

TO **Westlands Triangle Properties Limited**

Through **Eric K. Mumbi**
Physical Planner, Reg. No: 0191

Your application number as above, submitted on **3rd, August 2023**

For permission to carry out **Change Of Use - New** from **Godowns / Warehouse** to **Hotel and Offices** on

L.R. / Parcel No **9042/315** with Coordinates **-1.3403, 36.9182**

Situated in **Nairobi West, Embakasi** in **Embakasi East** Sub-county

Along **Tower Avenue** has been **APPROVED** on **3rd, August 2023**

By the Urban Planning Technical Committee tabled under Item No **36**

For the reasons/subject to the conditions appended overleaf.



Date **3rd, August 2023**

For CECM Built Environment and Urban Planning

CC:

The National Land Commission, Nairobi

The Land Registrar

The Director General - Physical and Land Use Planning, Nairobi

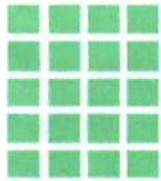
The Director of Surveys, Nairobi

The Secretary, State Department of Lands, Ministry of Lands & Physical Planning

Conditions for approval: -

- a. Submission of satisfactory building plans within two years and completion of construction within three years otherwise the approval lapses.
- b. Payment of revised ground rent as will be determined by the Director of Valuation, Ministry of Lands and Physical Planning.
- c. Payment of revised rates as will be determined by the Director Valuation & Property Management - Nairobi City County.
- d. Subject to the plot not constituting part of the disputed public/private utility land/allocations.
- e. Subject to compliance with Sections 56, 57, 58 and 59 of the Physical and Land Use Planning Act.
- f. Subject to compliance with the approved zoning policy.
- g. Subject to undertaking an EIA and obtaining NEMA License before commencement of any works.
- h. Subject to provision of appropriate setback(s) as per the rezoning plan.
- i. Subject to provision of adequate and functional on-site parking to the satisfaction of Director of Roads, Public Works & Transport.
- j. Subject to the proposed development maintaining the requisite of 3m, 6m, 9m building line as per the statutes.
- k. Subject to the development maintaining the residential character and densities of the area.
- l. Subject to obtaining clearance from Kenya Civil Aviation Authority.





AFRICA WASTE AND ENVIRONMENT MANAGEMENT CENTRE

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Website: www.awemac.co.ke

AWEMAC

Leading Environmental and Social Advisors in Africa

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (IESIA) FOR THE PROPOSED FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA INTERNATIONAL AIRPORT, OFF MOMBASA ROAD, NAIROBI COUNTY, KENYA.

The Proponent **Freight Lane Hotel Limited**, proposes to develop an Airport Hotel on Plot No. LR 9042/315 within Jomo Kenyatta International Airport (JKIA), Off Mombasa Road in Nairobi County, Kenya. The proposed project will entail the construction of 180 guest accommodation rooms, a surface car park of approximately 120 cars, restaurant, lobby bar, meeting rooms, gym, rooftop swimming pool and back of the house facilities.

In accordance with the Environmental Management and Co-ordination (Amendment) Act, 2015, section 58 on Integrated Environmental Impact Assessment, public participation is an important exercise for achieving the fundamental principles of sustainable development. As a key stakeholder/ an interested or affected party, we request for your comments on the expected socio-economic and environmental impacts of the proposed project activities.

Your participation in completing the questionnaire by the close of business on **31st July 2024**, would be greatly appreciated. Please inform us on **0704333166** when it is ready for collection or email it to: **adm@awemac.co.ke**. Thank you!

Kindly provide as much information as possible as you answer the following questions:

What is the distance between your enterprise/organization and the project site?

- (A) Less than 100m (B) Between 100m-500m (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

No see no positive impact during this phase as Airflo we oppose the construction project as this area is a Cargo zone

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

The construction activity involves significant changes to the land surface such as clearing vegetation and excavation, will result in a substantial negative environmental impact (Heavy pollution).

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

As Anglo led me oppose construction since as the area is a Cargo zone. There would be

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

No positive social economic and environmental impact. There would be conflict between the hotel and Freight forwarders around the cargo section/zone. Movement of cargo, clothes, people (visitors) etc. Therefore, Safety Matter concerns.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

Safety issues due to issues stated above. The area has many companies - Kuehne + Nagel, Freight in Time, ATL, Vegpro, Anglo hotel etc.

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

N/A as we do not approve

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Not approve of the construction

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

N/A
Not approve

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Not approve as the hotel as different activities not related to the Cargo Zone business.

10) Any other general suggestions/comments on the project that you would like us to consider?

*Being a Cargo Zone it will affect the business activity of this area.
Therefore Airflo Ltd oppose the construction project*

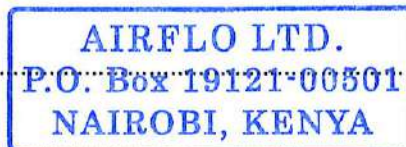
Full Name: *William Benganje*

Designation/Company Name: *Project & Maintenance Manager*

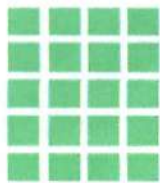
Telephone Contact: *+254794605276*

Email-Address: *William.benganje@airfloLtd.com*

Signature and Stamp: *BW*



Date: *30th July 2024*



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What is the distance between your enterprise/organization and the project site?

- (A) Less than 100m (B) ☒ Between 100m-500m (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

No significant adverse environmental and socio-economic impacts anticipated

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

No significant negative environmental and socio-economic impacts anticipated during the construction phase except for increased large vehicle traffic and the water table / borehole capacity may be reduced.

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

Not Applicable.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

None.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

- Increased vehicular traffic, therefore, the hotel should design sufficient, and easy to access parking facilities.
- Increased water use
- Increased electricity use.
- Reduction in green vegetation along these lanes next to the hotel

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

- Incorporate well designed and wide enough access roads to, inside and out-of the facility
- Ensure sufficient and adequate parking incorporated into the design of the hotel.
- Include adequate water preservation techniques in the operation of the hotel
- Ensure that green vegetation and trees are maintained around the hotel facility.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Not applicable

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Not applicable

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Not applicable.

10) Any other general suggestions/comments on the project that you would like us to consider?

Not applicable

Full Name: *AnneMarie Matende*

Designation/Company Name: *Site Q.A. Manager*

Telephone Contact: *+254 (0) 20 822715*

Email-Address: *anne-marie@vegpro-group.com*

Signature and Stamp:  **VEGPRO (K) LTD.**
P.O. Box 19226 - 00501
NAIROBI - KENYA

Date: *31/07/2024*



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A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

..... This will create new jobs support local
business by sourcing goods and services
increase tourism and culture exchange
.....
.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

noise, Pollution, dust and environmental destruction when digging and filling the ground and movement of vehicles and equipments.

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

Use Medium construction equipment and arrest dust brought by moving vehicles.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

The presence of the hotel can enhance local infrastructure and services benefiting both visitors and residents.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

Over crowding - increased traffic can strain local infrastructure and public services affecting the quality of life for residents.

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

Market research to be conducted through market analysis to avoid oversaturation and ensure the hotel presence complements rather than competing with the existing hotel. adopt a comprehensive waste management practices.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Pollution, habitat disruption and waste management due to chemical and heavy metal reaction to environment, wildlife disruption, large amount of waste management.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

- Develop a proper waste management
- Conduct regular environmental impact assessments and monitoring to detect and address any pollution.

10) Any other general suggestions/comments on the project that you would like us to consider?

Habitat protection implement measures to protect and restore local habitats and wildlife.

Full Name: John Mugo

Designation/Company Name: Supervisor

Telephone Contact: 0721 34693

Email-Address: john.mugo@rubiskenya.com

Signature and Stamp:

Date: 31/11/2024



2). What negative environmental and socio-economic impacts do you anticipate during the construction phase of the project?

1. Increased pollution
2. Waste generation
3. Traffic congestion
4. Increased competition for resources

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the construction phase?

1. Pollution Controls
2. Habitat conservation
3. Traffic management
4. Conduct regular health and safety training for construction workers
5. Community engagement

B. Operation Phase

4). What positive socio-economic and environmental impacts do you anticipate during the operation phase of the project?

1. Employment opportunities
2. Infrastructure development e.g. utilities, roads
3. Environmental conservation & restoration

5). What negative socio-economic and environmental impacts do you anticipate during the operation phase of the Project?

1. Infrastructure strain
2. Environmental degradation, e.g. habitat destruction, pollution

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the operation phase?

1. Local hiring initiatives
2. Skill training and development
3. Collaborate with local authorities
4. Implement sustainable practices

C. Decommissioning Phase

7). What positive environmental and socio-economic impacts do you anticipate during the decommissioning phase of the project?

1. Removal of pollutants
2. Job creation
3. Enhanced safety and health

Increased property value

8). What negative environmental and socio-economic impacts do you anticipate during the decommissioning phase of the project?

1. Pollution risk and site disruption
2. Noise and vibration
3. Temporary job losses

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the decommissioning phase?

1. Pollution prevention and Control
2. Site management and restoration plans
3. Support for affected workers
4. Communication and disruption

10) Any other general suggestions/comments on the project that you would like us to consider?

None

Full Name: Joyce Ndungu

Designation/Company Name: HSE Coordinator

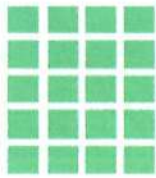
Telephone Contact: 0726555431

Email-Address: joyce.ndungu@dbschenker.com

Signature and Stamp:

SCHENKER LTD.

Date: 26/07/2024



AFRICA WASTE AND ENVIRONMENT MANAGEMENT CENTRE

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Leading Environmental and Social Advisors in Africa

**INTEGRATED ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED
FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA
INTERNATIONAL AIRPORT, OFF MOMBASA ROAD, NAIROBI COUNTY, KENYA.**

The Proponent **Freight Lane Hotel Limited**, proposes to develop an Airport Hotel on Plot No. LR 9042/315 within Jomo Kenyatta International Airport (JKIA), Off Mombasa Road in Nairobi County, Kenya. The proposed project will entail the construction of 180 guest accommodation rooms, a surface car park of approximately 120 parking lots, restaurant, lobby bar, meeting rooms, gym, rooftop swimming pool and other support facilities.

In accordance with the Environmental Management and Co-ordination (Amendment) Act, 2015, section 58 on Integrated Environmental Impact Assessment, public participation is an important exercise for achieving the fundamental principles of sustainable development. As a key stakeholder/ an interested or affected party, we request for your comments on the expected socio-economic and environmental impacts of the proposed project activities.

Kindly provide as much information as possible as you answer the following questions:

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....
Creation of employment activities.
Creation of business opportunities for supply of materials.
.....
.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....
Noise Pollution.
Damage of existing roads.
Air pollution from construction works.
.....

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

.....
Make use of dust suppression techniques to suppress dust.
.....

consider doing the noisy activities during the night
or over the weekend.
Repair damaged roads after construction.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

easily accessible accommodation facilities within the
Airport.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

None.

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

None.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Restoration of site to the current or better condition.

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Noise Pollution

Air Pollution

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Minimize Noise levels during the demolition works through
use of sustainable technologies

10) Any other general suggestions/comments on the project that you would like us to consider?


Ensure the services are affordable to the local
guests.

Full Name: ABDULHAKIM ABDULKADIR

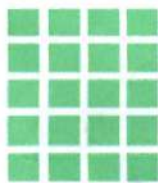
Designation/Company Name: FANJET EXPRESS LTD.

Telephone Contact: 0721 725595/0721 686144

Email-Address: Sirhakim007@yahoo.com

Signature and Stamp: 

Date: 21/8/2024



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Your participation in completing the questionnaire by the close of business on **31st July 2024**, would be greatly appreciated. Please inform us on **0704333166** when it is ready for collection or email it to: adm@awemac.co.ke. Thank you!

Kindly provide as much information as possible as you answer the following questions:

What is the distance between your enterprise/organization and the project site?

(A) Less than 100m

(B) Between 100m-500m

☒ (C) Between 500-1000m

(D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

..... None at all

.....

.....

.....

.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

Traffic, Extra vehicles, Road degradation

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

Allocate these areas to freight operators
this is a specialised freight area
NOT a hotel/accommodation allocated area.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

None.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

This is a freight designated area, why would a hotel be given permission to develop.

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

A freight operator/

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

None

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Traffic / noise / dust /

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Develop site for a freight operator.

10) Any other general suggestions/comments on the project that you would like us to consider?

Please allocate these areas as freight designated areas.

Full Name:

Shaun Bunner.

Designation/Company Name:

Facilities Manager.

Telephone Contact:

0129111343

Email-Address:

shaun.bunner@Kuehne + Nagel Cam.

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Date:

01/08/24



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What is the distance between your enterprise/organization and the project site?

- ☒ (A) Less than 100m (B) Between 100m-500m (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- landscaping plant and tree planting will benefit the surrounding hence improve air quality, will boost the local economy by benefiting nearby cafes, restaurant, hence contributing to the economy.

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- Intimidating Activities can generate dust which can degrade air quality and pose health risks to nearby offices - Delivery of material by vehicles on block or cause congestion, lead commuting will be difficult

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

- Use of dust suppression techniques and machinery to reduce emission or use lot of water to reduce the dust. There should be involved personnel in place to control traffic for the delivery vehicles

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

- Sustainable landscaping practices such as plants and trees planting, hence improving biodiversity. Accommodation of visitors because of its proximity to office

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

- High water consumption may lead to depleting the water resources. The constant flow of guests and activities of the hotel may disrupt the peace and quiet surrounding

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

- Implementing water saving fixtures & reducing electricity. Improvement of infrastructure e.g. waste storage to accommodate high increase demand.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

- Air visitors can be accommodated in the hotel and can travel easily and no need of vehicles hence lowering green house gas emission factor. The will be widening of the road close to our other

<sup>Ret
base
page</sup>
The staff from our office will benefit from restaurants and shopping.
8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning** phase of the project?

- The facility will consume a significant amount of water, energy which can strain our office.
- The facility might attract a range of people and some might have a malicious intention which might impact security concerns.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning** phase?

The Facility Management should construct their bore holes and use solar to supply water & energy. Security concern should be taken into consideration or given first priority.

10) Any other general suggestions/comments on the project that you would like us to consider?

Implement stringent safety protocol to protect the public from construction related hazard.

Develop traffic management plan to minimize disruption to road traffic from

Full Name: Alex Kibaso Ombati

Designation/Company Name: Accountant / Expolanka FREIGHT A LTD

Telephone Contact: 0723344012

Email-Address: alexk@ethi.global

Signature and Stamp: 

Date: 29/07/2024



C

7. It will provide an opportunity to remediate any environmental contamination that occurred during the hotel operation
- It will eliminate the ongoing consumption of energy & water hence reducing the overall environmental footprint.

Decommissioning can create short term jobs to the local.

8) Demolition activities can generate dust & emissions from heavy machinery & heavy health risks. There will be significant noise pollution. There will be increase of traffic from demolition vehicles hence causing inconvenience.

9) - Use of dust suppression techniques and maintain machinery to reduce emissions
- By scheduling the activities during less disruptive hours or use noise barriers.
- Have personnel in place to control traffic.



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What is the distance between your enterprise/organization and the project site?

- (A) Less than 100m (B) Between 100m-500m (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- Enhance biodiversity
- Easy access for the guests within the airport.
- Our facility being the closest within the airport for offering medical services will impact us economically to offer services during construction phase in case of any emergency.

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- Waste management.
- pollutions from the construction.

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

- proper waste management.
- proper handling and implementation of construction materials and pollutions.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

- Increased employment.
- Ease access for guests within the airport.
- Business opportunities for some companies within.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

- Excess resource consumption.
- Solid waste production.
- Landscape change.
- Waste generation.
- Air pollution.

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

- proper waste management.
- proper plan to minimize pollutions.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

- pollution management.

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

- Loss of employments.
- Wastage of resources.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

- Operational efficiency.
- Cost saving.

10) Any other general suggestions/comments on the project that you would like us to consider?

The proposed airport hotel will be a good economic impact for everyone, especially for saving costs to guests in terms of accommodation, access and lifestyle. It will also offer business to our facility in terms of being able to offer medical services if needed.

Full Name: ABDULRAHMAN SALMIN.

Designation/Company Name: CHECKUPS MEDICAL CENTRE

Telephone Contact: 0705541691

Email-Address: abdulrahman@checkup.med.com

Signature and Stamp: _____

Date: _____





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A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....
.....*Job creation*.....
.....
.....
.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

1. Noise pollution
2. Emission of dust

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

1. Work at night - when businesses around are away / closed
2. Put material at night and construct at night

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

1. Creation of business opportunities
2. Favorable pricing due to increase in supply of hotel services

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

None as we are in different businesses

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Less of job - more opportunities

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

1. Loss of job opportunities and businesses

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

10) Any other general suggestions/comments on the project that you would like us to consider?

1. Offer discounts and incentives to neighbouring businesses

Full Name: SHADRACK KAMIRI NWAANGI

Designation/Company Name: ACCOUNTANT RAPAT FREIGHT (K) LTD

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Email-Address: shadrack@rapatfreight.net

Signature and Stamp: 

Date: 07/08/2024





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Kindly provide as much information as possible as you answer the following questions:

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

1. There will be employment opportunities for local communities
2. The project will promote improved energy conservation in the long run by employing green initiatives
3. The project will enhance hospitality image for visitors

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- 1) The project will damage flora and fauna existing on the project location
- 2) The project will contravene wildlife conservation and management Act of 2013 by disturbing or destroying habitation of the existing birds. This may not be a threat to aviation.

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

- The project should ensure protection of birds especially those which do not pose safety to air planes -

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

enhanced facilities for visitors to the County

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

- Down stream storm drain risks
- Risk of Communicable diseases from visitors
Referrals

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

- Provide rain barrels to collect roof runoff to reduce the amount of water that flows from the hotel. It helps to conserve water and it's free use in the landscape.
- Involve public health and develop programs to prevent transmissible diseases.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

- Waste generation and impact on employment.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Identify or provide acceptable waste management strategies to prevent pollution.

10) Any other general suggestions/comments on the project that you would like us to consider?

- Provide effective controls for dust generated during construction
- Provide effective traffic flow management to ensure emergency responses to sensitive facilities like oil & gas storage are not impeded.

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Designation/Company Name: Environmental Expert / Kenya Pipeline Co. Ltd

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Signature and Stamp: 

Date: 7/8/2024



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Kindly provide as much information as possible as you answer the following questions:

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....
- Job Creation
- Cash Infusion.
.....
.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....
- Air Pollution
- Sound / Noise Pollution
- Security Risk
- Traffic Jam.
.....

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

.....
- Enhance Security
- Manage / control the traffic inflows.
.....

- Effect measures that would minimize air / sound pollution.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

- Job creation
- Cash infusion / Forex earnings
- Increase in tourists numbers.
- Increased Economic activities viz supplies
- Enhanced Security.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

N/A

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

N/A

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

- Loss of Employment.
- Loss of Forex earnings
- Reduced / constrained Economic activities

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Same as above.

10) Any other general suggestions/comments on the project that you would like us to consider?

N/A

Full Name: MESHACK OCHIENG

Designation/Company Name: GENERAL MANAGER - GLOBAL FREIGHT LOGISTICS LTD.

Telephone Contact: 0732-849-395

Email-Address: m.ochieng@globalfreight.co.ke/info@globalfreight.co.ke

Signature and Stamp:

Date: 07.08.24

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00100
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Leading Environmental and Social Advisors in Africa

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (IESIA) FOR THE PROPOSED FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA INTERNATIONAL AIRPORT, OFF MOMBASA ROAD, NAIROBI COUNTY, KENYA.

The Proponent **Freight Lane Hotel Limited**, proposes to develop an Airport Hotel on Plot No. LR 9042/315 within Jomo Kenyatta International Airport (JKIA), Off Mombasa Road in Nairobi County, Kenya. The proposed project will entail the construction of 180 guest accommodation rooms, a surface car park of approximately 120 cars, restaurant, lobby bar, meeting rooms, gym, rooftop swimming pool and back of the house facilities.

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- (A) Less than 100m (B) Between 100m-500m ☒ (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

Implementation of Eco-friendly construction practices that promote sustainability
On socio-economic fronts, job creation, skills developing and improve infrastructure

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Job losses
Increase waste generation, soil contamination and potential disturbance to local ecosystem

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Plan and implement decommissioning processes to minimize job losses and waste generation.

10) Any other general suggestions/comments on the project that you would like us to consider?

Community Engagement through all project phases

Full Name: CECILIAN MWANGI

Designation/Company Name: ATLANTA CARGO LIMITED

Telephone Contact: 0790 489201

Email-Address: backing@atlantacargoLtd.com

Signature and Stamp: 

Date: 24/07/2024



AFRICA WASTE AND ENVIRONMENT MANAGEMENT CENTRE

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A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

..... Employment opportunities
..... Improved local infrastructure
..... Business opportunities
.....
.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

Limited resource consumption
Environmental pollution
Increased traffic congestion

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

Sustainable resource sourcing
Pollution control
Traffic planning

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

Economic growth
Employment opportunities
Infrastructure improvements

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

Limited resource consumption
Waste generation
Pollution

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

Sustainable resource sourcing
Waste management
Pollution control

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Opportunity for redevelopment
Environmental restoration
Material recycling

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Job losses

Waste generation

Pollution

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

Job transition programs

Waste management

Pollution control

10) Any other general suggestions/comments on the project that you would like us to consider?

Full Name: TRACY PEPELA

Designation/Company Name: TRADEWINDS AVIATION SERVICES LTD

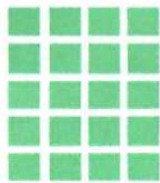
Telephone Contact: +254786521703

Email-Address: t.pepela@tradewindskenya.com

Signature and Stamp:



Date: 15th AUGUST 2024



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(A) Less than 100m

☒ (B) Between 100m-500m

(C) Between 500-1000m

(D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....
- Creation of Job Opportunities
.....
.....
.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- ⇒ Dust pot
- ⇒ Noise
- ⇒ Traffic.

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

- ⇒ Spraying water to reduce dust.
- ⇒ To have a traffic marshal to control moving trucks.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

- Create accommodation for our guests.
- Create job opportunities.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

- ⇒ Pollution with smoke.
- ⇒ Insecurity.

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

- ⇒ Use of CCTV cameras.
- ⇒ Employ qualified security personnel.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

- ⇒ Nil.

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Noise:
Traffic -
Dust
Job loss.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

- Avoid. of using noisy machinery.
- Employing a traffic. Meshel. for controlling. trucks.

10) Any other general suggestions/comments on the project that you would like us to consider?

Full Name: NEWTON MOSES

Designation/Company Name: MAINTENANCE SUPERVISOR.

Telephone Contact: 0721798775.

Email-Address: moses@freightwings.co.ke.

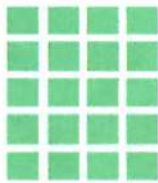
Signature and Stamp:



Date:

12/08/24.

FREIGHT WINGS LIMITED
P. O. BOX 19023
00501 - JKIA
NAIROBI



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A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

1. Creation of Jobs opportunities
2. It will boost economy
3. Utilization of un-used land
4. Suppliers of building materials will earn money

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

1. causes of Air, and noise pollution
2. Interferes with drainage system
3. Will cause dust emission and soil erosion
4. Causes Death and injuries to workers; Theft of building materials

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

1. Provision of protective gears to workers eg helmet, safety boots etc
2. Application of noise abatement techniques eg, silencer and muffler
3. Use of dust suppression methods eg, sprinkling water
4. Securing of the construction site using opaque materials and nets to curb theft and other criminal activities.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

1. Income generation & creation of jobs opportunities
2. promotes re-creation activities
3. Revenue collection.
4. Will also, attract tourists
5. People will get tenders and supply commodities eg food

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

1. It can promote immoralities (prostitution) if not controlled
2. Increases waste products
3. Use of electricity and water will be high.
4. Will create room for theft and other criminal activities
5. It may harbour drug peddlers and human traffickers

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

1. Providing safe places where waste products can be disposed.
2. Use of electricity back-ups eg solar energy
3. Discouraging idlers within the premises to curb criminal activities from taking place.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

1. The land/space can be converted for other use.
2. There will be no air waste and noise pollution since the building will not be in use.

- * 3. Theft and other criminal activities will stop,
- 4. Death and injuries will no longer be experienced.

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

1. The building if no longer in use can be harbouring criminals
2. Revenue collection will stop and people will loose jobs
3. Suppliers of different commodities will stop getting money.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

1. When the building or the premises will not be in use it must be demolished in order to stop harbouring criminals.
2. Reduction of waste and minimization of waste generation, recycling, re-use & responsible disposal.

10) Any other general suggestions/comments on the project that you would like us to consider?


1. During construction of the building (hotel) they must consider issues of floods
2. Use of appropriate technologies to mitigate environmental impacts of various activities.
3. Reduction of exhaust emission through proper planning of vehicle movement and use of lead free fuel.
4. Use of alternative materials/products which are less damaging to the environment.

Full Name: THE OCS

Designation/Company Name: JKIA P/STATION

Telephone Contact: N/A

Email-Address: Box 19004 NAIROBI

Signature and Stamp: 

Date: 15/8/2024



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Kindly provide as much information as possible as you answer the following questions:

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

Employment opportunity during the construction phase will be available.

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

Dust, Noise - Road congestion/obstruction.

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

*Use site fence or protect the area during construction
Use Machines with sound absorbers (silencers).
Vehicles delivering materials should be delivered in a scheduled manner to avoid congestion.*

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

Employment

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

None

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

None

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Employment

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

None

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

None

10) Any other general suggestions/comments on the project that you would like us to consider?

None.

Full Name:

JACOB MUSEMBI MUAHAGIRI

Designation/Company Name:

MANAGER.

Telephone Contact:

0722 873 447.

Email-Address:

mzembi2994@yahoo.com

Signature and Stamp

MAKINDU GROWERS & PACKERS LTD.
P. O. Box 41407 - 00100
NAIROBI, KENYA.

Date:

6/8/2024.



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A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

✓ Creation of temporary & casual jobs
✓ Supply and purchase opportunities
✓
.
.
.

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- ✓ Dust pollution from the site
- ✓ Noise pollution from the site
- ✓ Vegetative clearing

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

- ✓ Dust net at wellboring
- ✓ Use of locally sourced fuel
- ✓ Planting of shade plants type conifers - Matted trees

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

- ✓ Creation of jobs - casual, permanent & casual
- ✓ Supply and permanent workers

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

- ✓ None

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

- ✓ None

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

- ✓ None

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

None

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

None

10) Any other general suggestions/comments on the project that you would like us to consider?


None

Full Name: *CHRISTOPHER ONTANGIO OKAL*

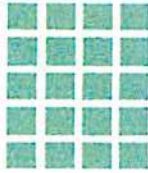
Designation/Company Name: *DEPUTY CHIEF ENGINEER (CROWNE PLAZA)*

Telephone Contact: *0712 317727*

Email-Address: *Christopher.Ongango @ crownplazaairport.com*

Signature and Stamp: 

Date: *18/09/24*



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A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....
..... Nil positive impact during construction phase
.....
.....
.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

1. Traffic congestion along 3rd Freight Lane

2. Noise during construction

3. Dust during excavation and construction

4. Security and safety due to increase in strangers movement

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

1. Traffic Management Plan: Develop a comprehensive traffic management plan that includes detour routes, signage, and traffic control

2. Noise: Schedule excavation and materials deliveries for the night and install temporary sound barriers around the construction site

3. Dust Barriers: Erect physical barriers or screens around the site to contain dust and regularly water construction sites to keep dust down.

4. Security Measures such as fencing, lighting and surveillance cameras to protect the site and surrounding area and employ security personnel

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

1. Green Spaces and Landscaping which can improve local air quality

2. Enhanced Local Services: The presence of a hotel can lead to improved local services and amenities to cater to office visitors/guests

3. Improved security in the area with improved lightings and 24 hours traffic movement

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

1. Security Concerns: The influx of guests and increased foot traffic can sometimes lead to heightened security issues, including petty crime

2. Increased Traffic Congestion: A hotel can attract a significant number of visitors, leading to higher traffic volumes in the area

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

1. Traffic Management: Develop and enforce traffic management plans

2. Noise Control: Use soundproofing materials, implement quiet hours, and manage noise levels during events

3. Resource Efficiency: Implement energy and water conservation measures, and promote waste reduction and recycling programs

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Site Restoration such as cleaning up any contamination, removing structures and rehabilitating the land for repurposing the site for more sustainable uses

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

1. Increased Resource Consumption: The operational start-up of a hotel can lead to higher immediate demands for resources such as water and electricity

2. Waste Generation: Construction debris and other waste products if not properly managed, this can contribute to landfill issues and environmental pollution.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

1. Infrastructure Coordination: Coordinate with local authorities and service providers to manage the increased demand on local infrastructure and resources

2. Environmental Management: Develop and follow a robust environmental management plan to handle waste, optimize resource use and ensure compliance with regulations.

10) Any other general suggestions/comments on the project that you would like us to consider?

1. Comprehensive Planning

a) Early Consultation: Engage with stakeholders, including local communities, environmental experts, and regulatory bodies early in the project to identify and address any potential concerns proactively

b) Long-Term Environmental Impact: Consider the long-term environmental impacts of the hotel, including its carbon footprint and resource use.

2. Transparent Communication: Maintain clear and transparent communication with neighbors throughout all project phases and

Provide regular updates on progress promptly

Full Name: Stephen Kimani

Designation/Company Name: Head of Security, Health & safety

DHL Global Forwarding (K) Limited

Telephone Contact:

Email-Address: stephen.kimani@dhl.com

Signature and Stamp:

Date: 30/07/2024





AFRICA WASTE AND ENVIRONMENT MANAGEMENT CENTRE

Kilimani Estate, Muringa Court, A5

P.O. BOX 14365-00100, NAIROBI

Tel: +254(0) 2020408 / (0) 704333166 / (0) 784333166

Email: awemac_ken@yahoo.com / adm@awemac.co.ke

Website: www.awemac.co.ke

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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (IESIA) FOR THE PROPOSED FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA INTERNATIONAL AIRPORT, OFF MOMBASA ROAD, NAIROBI COUNTY, KENYA.

The Proponent **Freight Lane Hotel Limited**, proposes to develop an Airport Hotel on Plot No. LR 9042/315 within Jomo Kenyatta International Airport (JKIA), Off Mombasa Road in Nairobi County, Kenya. The proposed project will entail the construction of 180 guest accommodation rooms, a surface car park of approximately 120 cars, restaurant, lobby bar, meeting rooms, gym, rooftop swimming pool and back of the house facilities.

In accordance with the Environmental Management and Co-ordination (Amendment) Act, 2015, section 58 on Integrated Environmental Impact Assessment, public participation is an important exercise for achieving the fundamental principles of sustainable development. As a key stakeholder/ an interested or affected party, we request for your comments on the expected socio-economic and environmental impacts of the proposed project activities.

Your participation in completing the questionnaire by the close of business on **31st July 2024**, would be greatly appreciated. Please inform us on **0704333166** when it is ready for collection or email it to: adm@awemac.co.ke. Thank you!

Kindly provide as much information as possible as you answer the following questions:

What is the distance between your enterprise/organization and the project site?

- (A) Less than 100m (B) Between 100m-500m (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

The negative impacts during the construction phase is dust and waste that may hamper the aviation operations in the airport and also may be attractants to birds & wildlife.

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

The negative environmental impacts would be increase of noise from the construction equipment & activities, dust from the construction activities and quality of air affected.

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

The reduction of noise from equipment by use of equipments that are sound mechanically, and reduction of dust by sprinkling of water, and netting and also the equipment that allows cleaner movement of waste from the pits to the site it is to be disposed, and covered.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

Positive socio-economic is there will be increase in employment opportunities.

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

The negative aspects are there will be increase in the traffic to the area as the hotel will hosts different groups of people, Also there will be increased risk of attractants to birds if waste not properly handled and there will be security issues to be checked.

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

The waste management should ensure no open disposal of garbage or waste.
The proponent to ensure that there is proper security screening to ensure no security threats.

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

The positive impact during decommissioning would be rehabilitation of the island for other use and aviation purpose.

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Negative aspects would be loss of livelihood for the employees, the aesthetics that the hotel had will be lost

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

None.

10) Any other general suggestions/comments on the project that you would like us to consider?

The project should consider that they get the requisite height approval for the height before the construction and ensure the materials used do not introduce unnecessary glare to air craft operating in the airport.

Full Name: Teresa Moki

Designation/Company Name: Kenya Civil Aviation Authority

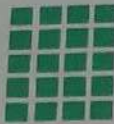
Telephone Contact: +254 728 606 586

Email-Address: tmjoki@kcaa.or.ke

Signature and Stamp:

Date: 31/7/2022





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**INTEGRATED ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED
FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA
INTERNATIONAL AIRPORT, OFF MOMBASA ROAD, NAIROBI COUNTY, KENYA.**

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In accordance with the Environmental Management and Co-ordination (Amendment) Act, 2015, section 58 on Integrated Environmental Impact Assessment, public participation is an important exercise for achieving the fundamental principles of sustainable development. As a key stakeholder/ an interested or affected party, we request for your comments on the expected socio-economic and environmental impacts of the proposed project activities.

Kindly provide as much information as possible as you answer the following questions:

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

① Creation of jobs

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

1. Noise pollution

2. Illegal dumping of construction waste and black cotton soil

3. Loss of vegetation and trees

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

① Noise polluting activities to be done early in the morning

② Hiring certified waste handlers

② Replacement of vegetation and trees after construction.

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation** phase of the project?

① Creation of jobs

② Impact aesthetic value of the environment

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation** phase of the Project?

① Illegal dumping of waste generated from daily activities

② Waste water discharge

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation** phase?

① Hiring and Contracting of certified waste handlers

② Sewer line connection and

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning** phase of the project?

① Creation of jobs

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning** phase of the project?

① Noise pollution

② Illegal dumping of generated waste

③ Dust generation

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning** phase?

- ① Noise polluting activities to be done only in the morning
- ② Contracting Certified waste handlers
- ③ Sprinkling of water and use of nets

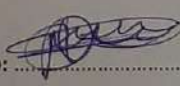
10) Any other general suggestions/comments on the project that you would like us to consider?

Full Name: Dr. Kunjini

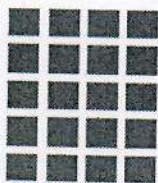
Designation/Company Name: NCCG

Telephone Contact: 0710340181

Email-Address:

Signature and Stamp: 

Date: 7/09/2024



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Website: www.awemac.co.ke

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**ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED FOUR-STAR
AIRPORT HOTEL LOCATED ON PLOT NO. LR 9042/300 WITHIN JOMO KENYATTA
INTERNATIONAL AIRPORT, OFF MOMBASA ROAD IN NAIROBI COUNTY, KENYA.**

The Proponent **Freight Lane Hotel Limited**, proposes to develop an Airport Hotel on Plot No. LR 9042/315 within Jomo Kenyatta International Airport (JKIA), Off Mombasa Road in Nairobi County, Kenya. The proposed project will entail the construction of 180 guest accommodation rooms, a surface car park of approximately 120 cars, restaurant, lobby bar, meeting rooms, gym and a rooftop swimming pool.

In accordance with the Environmental Management and Co-ordination (Amendment) Act, 2015, section 58 on Integrated Environmental Impact Assessment, public participation is an important exercise for achieving the fundamental principles of sustainable development. As a key stakeholder/ an interested or affected party, we request for your comments on the expected socio-economic and environmental impacts of the proposed project activities.

Kindly provide as much information as possible as you answer the following questions:

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

...As freight forwarders we would be happy to engage the project managers for consideration in the provision of logistics services.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

.....Noise, dust, increase in human and vehicle traffic, cutting of trees

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

.....Minimise heavy traffic to evenings when there is less traffic of cargo being moved to the sheds.....

.....Send notices to neighbouring organisations in case a major disruption in their activities is expected

.....Make an effort to retain any tree currently on site so as to ensure habitat for birds is not damaged.

.....

.....

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

.....We hope the facility can approach organisations located at JKIA for provision of services eg freight forwarding and transport. The facility will also provide employment to people in the locality as well as provide convenient accommodation to travelers using JKIA.....

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

.....None.....

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

.....None.....

C. **Decommissioning Phase**

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

.....

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Noise, air pollution, destruction of bird habitats, Noise pollution, pollution of underground water sources such as wells or boreholes.....

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

.....Minimise decommissioning activities to night and weekends.....
.....Securing water sources from pollution due to runoff from the site.....

10) Any other general suggestions/comments on the project that you would like us to consider?

.....None.....
.....
.....
.....
.....
.....

Full Name:Edwin Owino.....

Designation/Company Name:Sales Executive.....Nippon Express.....

Telephone Contact: ...0720720000.....

Email-Address:

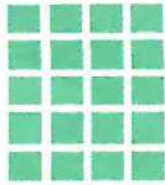
.....edwin.owino@nipponexpress.com.....

Signature and Stamp:



Date:

.....26/08/24.....



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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (IESIA) FOR THE PROPOSED FREIGHT LANE AIRPORT HOTEL LOCATED ON PLOT LR NO. 9042/315 AT JOMO KENYATTA INTERNATIONAL AIRPORT, OFF MOMBASA ROAD, NAIROBI COUNTY, KENYA.

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Your participation in completing the questionnaire by the close of business on **31st July 2024**, would be greatly appreciated. Please inform us on **0704333166** when it is ready for collection or email it to: **adm@awemac.co.ke**. Thank you!

Kindly provide as much information as possible as you answer the following questions:

What is the distance between your enterprise/organization and the project site?

- (A) Less than 100m (B) Between 100m-500m ☒ (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

None

.....

.....

.....

.....

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

NONE

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

N/A

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

Proximity to conference facilities
and accommodation for visitors
robbing within JKIA

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

NONE

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

N/A

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

NONE



8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning** phase of the project?

N/A

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning** phase?

N/A

10) Any other general suggestions/comments on the project that you would like us to consider?

NONE

Full Name:

Moses Nyakundi

Designation/Company Name:

AVIATION OPERATIONS MANAGER / OLA ENERGY

Telephone Contact:

0719-020 501

Email-Address:

Moses.nyakundi@olaenergy.com

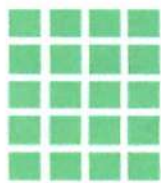
Signature and Stamp:



Date:

30th July 2024





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- (A) Less than 100m (B) Between 100m-500m (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

- Job creation
- Improvement in the social and economic concerns

2). What **negative** environmental and socio-economic impacts do you anticipate during **construction phase** of the project?

- Waste generation
- Noise pollution
- Contamination of air and soil

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

- Reusing and recycling materials
- Practising green building codes measures to mitigate construction waste and its effects

B. Operation Phase

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

- Increased employment
- Create tax revenues to the state and local governments

5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

- Generation of solid waste and liquid waste

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

- Implement strict sustainable practices

C. Decommissioning Phase

7). What **positive** environmental and socio-economic impacts do you anticipate during **decommissioning phase** of the project?

- Create employment

8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning** phase of the project?

- Air pollution.

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning**

- Ensure safe disposal of obsolete inactive materials

10) Any other general suggestions/comments on the project that you would like us to consider?

N/A

Full Name: TOM SIDIGA

Designation/Company Name: GENERAL MANAGER

Telephone Contact: 0703 119988

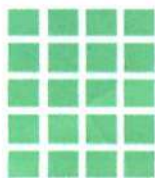
Email-Address: SIDIGA.TOM@GMAIL.COM

Signature and Stamp:

Date:

29/07/2024





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Kindly provide as much information as possible as you answer the following questions:

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

Employment

2). What **negative** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

*Noise
Roads get spall
Not as pleasant appearance
Mess*

*Dusty surrounding
We are food handlers -
dust and mess impacts
us - management of this
is important*

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **construction phase**?

*Organised and timed construction
Management of waste, movement, dust, mess*

.....
.....
.....
B. Operation Phase (Hotel operation)

4). What **positive** socio-economic and environmental impacts do you anticipate during the **operation phase** of the project?

Employment

Provision of more services - food, meeting rooms

Boost tourism

.....
.....
.....
5). What **negative** socio-economic and environmental impacts do you anticipate during the **operation phase** of the Project?

Congestion - road

.....
.....
.....
6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **operation phase**?

Sufficient parking

.....
.....
.....
C. Decommissioning Phase (

7). What **positive** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Employment

.....
.....
.....
8). What **negative** environmental and socio-economic impacts do you anticipate during the **decommissioning phase** of the project?

Noise

Mess

Road will get spoilt

Not a pleasant appearance

Dust

.....
.....
.....
9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the **decommissioning phase**?

10) Any other general suggestions/comments on the project that you would like us to consider?

Implement proper waste management strategies
Road management - traffic & condition of the
road
Pollution management

Full Name: NIKASHA MAHARAJ

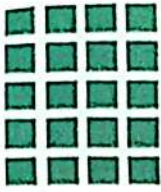
Designation/Company Name: SHALIMAR FRESH LTD

Telephone Contact: 0722 200 681

Email-Address: ~~INFO~~ INFO.EAGA@EASTAFRICANGROWERS.COM

Signature and Stamp: SHALIMAR FRESH LIMITED
P.O. Box 49125 - 00100,
NAIROBI

Date: 15/8/24



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Website: www.awemac.co.ke

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Kindly provide as much information as possible as you answer the following questions:

What is the distance between your enterprise/organization and the project site?

- (A) Less than 100m ☒ (B) Between 100m-500m (C) Between 500-1000m (D) Over 1000m

A. Construction Phase

1). What **positive** environmental and socio-economic impacts do you anticipate during the **construction phase** of the project?

More tourism; More Business

2). What negative environmental and socio-economic impacts do you anticipate during the construction phase of the project?

Noise pollution

3). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the construction phase?

Constructions to be done systematically and at good hours

B. Operation Phase

4). What positive socio-economic and environmental impacts do you anticipate during the operation phase of the project?

More humans; More business

5). What negative socio-economic and environmental impacts do you anticipate during the operation phase of the Project?

Noise pollution
Thawing of source resources eg water

6). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the operation phase?

Discussions with stakeholders & agree on how we gonna share the resources

C. Decommissioning Phase

7). What positive environmental and socio-economic impacts do you anticipate during the decommissioning phase of the project?

More humans; More business

8). What negative environmental and socio-economic impacts do you anticipate during the decommissioning phase of the project?

Noise pollution
Sharing of scarce resources

9). What measures would you suggest to be put in place to mitigate the identified negative Environmental and Socio-Economic Impacts associated with the proposed project during the decommissioning phase?

Airport owners (KAA) come up with measures to compensate shared resources

10) Any other general suggestions/comments on the project that you would like us to consider?

N/A

Full Name: Holly Silali

Designation/Company Name: General Manager,

Telephone Contact: 077357 5564

Email-Address: silali@shujaa-aviation.aero

Signature and Stamp:

Date: 13/AUG/2024



COURTYARD HOTEL BY MARRIOTT AT JKIA - NAIROBI KENYA FOR FREIGHT LANE HOTEL LTD		
	MAIN SUMMARY	AMOUNT(KES)
1	Preliminaries	49,644,414
2	Enabling Works	7,795,200
3	Shell Construction	235,693,687
4	Front of House Finishes	168,856,460
5	Back of House Finishes	17,601,507
6	Joinery Works	93,549,632
7	External Works	33,226,395
8	Sample Guestroom	4,867,843
9	Mechanical, Electrical and Specialists Installations	583,517,463
	TOTAL CONSTRUCTION COST KES	1,194,752,603
<p><i>Joseph Kahiga</i> 9/oct/2024</p> <p>JOSEPH KAHIGA MACEYMR LLP</p> <p>MACE YMR LIMITED LIABILITY PARTNERSHIP P.O. Box 2403 - 00606, NAIROBI - KENYA.</p>		



nema
Mazingira Yetu | Uhai Wetu | Wajibu Wetu

EAE 23060140

FORM 7

(r.15(2))

**NATIONAL ENVIRONMENT MANAGEMENT
AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING
LICENSE**

License No : NEMA/EIA/ERPL/20315

Application Reference No: NEMA/EIA/EL/26757

M/S AFRICA WASTE AND ENVIRONMENT MANAGEMENT CENTRE

(individual or firm) of address

P.O. Box 14365 - 00100 Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts**

registration number **0527**

in accordance with the provision of the Environmental Management and Coordination
Act Cap 387.

Issued Date: **1/9/2024**

Expiry Date: **12/31/2024**

Signature....

(Seal)

Director General

The National Environment Management Authority

P.T.O.



ISO 9001 : 2015 Certified





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EAE 2306014 1

FORM 7

(r.15(2))

**NATIONAL ENVIRONMENT MANAGEMENT
AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING
LICENSE**

License No : NEMA/EIA/ERPL/20314

Application Reference No: NEMA/EIA/EL/26756

M/S Prof. Jacob K. Kibwage
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P.O. Box 14365 - 00100 Nairobi

is licensed to practice in the
capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
General

registration number **0126**

in accordance with the provision of the Environmental Management and Coordination
Act Cap 387.

Issued Date: 1/9/2024

Expiry Date: 12/31/2024

Signature....

(Seal)
Director General
The National Environment Management Authority

P.T.O.



ISO 9001 : 2015 Certified

