ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT

FOR

THE PROPOSED RESIDENTIAL APARTMENTS DEVELOPMENT ON AMALGAMATED PLOT NO. NAIROBI/BLOCK 22/211, 213, 218 AND 230 LOCATED ALONG LAIKIPIA ROAD IN KILELESHWA AREA OF NAIROBI CITY COUNTY

This Environmental Impact Assessment (EIA) Study Report is submitted to the National Environment Management Authority (NEMA) in conformity with the requirements of the Environmental Management and Coordination Act, Cap 387 and the Environmental (Impact Assessment and Audit) Regulations, 2003

EIA Firm of Experts:

Space Planners Ltd,

P. O. Box 157 - 00600,

Nairobi.

SPACE PLANNERS LTD

Project Proponent:

Central Park Residency Limited,

P.O. Box 43942 – 00100,

Nairobi.

29th April 2026

Declaration

This Environmental Impact Assessment (EIA) Study Report for the Proposed **Residential Apartments Development** on Plot Nos. Nairobi/Block 22/211, 213, 218 and 230 located along Laikipia Road in Kileleshwa Area of Nairobi City County has been prepared by **Space Planners Limited, EIA/Audit Firm of Experts (NEMA Reg. No. 10,492),** in accordance with the Environmental Management and Coordination Act, Cap 387 and the Environmental (Impact Assessment and Audit) Regulations, 2003 for submission to the National Environment Management Authority (NEMA).

SPACE PLANNERS LTD
P. O. Box 157 - 00600,
NAIROBI
Date: 29.04.2026

Signature/Official Stamp: ..... Date: .....

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EIA Team

S/N	Name of the Expert	Designation	Registration No.
1.	Solomon Kyeni	Lead Expert	3,081
2.	Aaron Mumo	Lead Expert	9,047
3.	Lilian Mbogo	Associate Expert	13,273

For and on behalf of the Project Proponent:

Central Park Residency Limited,
P.O Box 43942 – 00100,
Nairobi.

Signed: _____ Date: 29 April. 2026

Name: Li Junchen

Designation: Director

SPACE PLANNERS LTD

This Environmental Impact Assessment (EIA) Study Report has been prepared by Space Planners Limited, EIA/Audit Firm of Experts (NEMA Reg. No. 10,492).

Report Type:	Environmental Impact Assessment Study Report
Project Name:	Proposed Residential Apartments Development on Amalgamated Plot Nos. Nairobi/Block 22/211, 213, 218 and 230 located along Laikipia Road in Kileleshwa Area
Proponent:	Central Park Residency Limited, P.O Box 43942 – 00100, Nairobi.

We, the undersigned, certify that the particulars in this report are accurate to the best of our knowledge and report has been prepared in accordance with the Environmental Management and Coordination Act, Cap 387 and the Environmental (Impact Assessment and Audit) Regulations, 2003.

Name	**Designation**	**NEMA Reg. No.**	**Signature**	**Date**
Solomon Kyeni	Lead Expert	3,081		29.4.2026
Aaron Mumo	Lead Expert	9,047		29.04.2026
Lilian Mbogo	Associate Expert	13,273		29.04.26

Project Data Sheet

Project Title	Proposed Residential Apartments Development
Project Proponent	Central Park Residency Limited
KRA Pin	P052418003V
Postal Adress	P.O. Box 43942 – 00100, Nairobi
Project Location	Plot Nos. Nairobi/Block 22/211, 213, 218 and 230 located along Laikipia Road, Kileleshwa Area, Nairobi City County
GPS Coordinates	Latitude -1.2722 and Longitude 36.7933
Plot Size	0.7502 Hectares
Project Scope	5 basements: Parking Ground Floor: Recreational/Amenities Typical 1st to 25th floor: Residential Apartments
Housing Units	1,090 residential apartments (601 one-bedroom units, 435 two-bedroom units, 50 three-bedroom units and 4 four-bedroom units)
Auxiliary Amenities	Convenience store, swimming pool, running & fitness area, kids play area, padel, study area, and coffee area
Parking	808 bays
Project Budget	KES 5,827,141,514.00
Energy Supply	On-site KPLC transformer, Solar panels and Generator
Water Supply	NCWSC water supply, Borehole Water, and Harvested Rainwater
Liquid Waste Management	NCWSC conventional sewer system and On-site Sewer Treatment Plant
Solid Waste Management	Licensed private waste collectors

Table of Contents

List of Tables

List of Figures

List of Plates

Acronyms

CCTV	Closed-circuit Television
CECM	County Executive Committee Member
CPP	Consultations and Public Participation
DOSHS	Directorate of Occupational Safety and Health Services
DSQ	Domestic Service Quarters
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EMP	Environmental Management Plan
ERP	Emergency Response Plan
GRS	Grievance Redress System
KEBS	Kenya Bureau of Standards
KPLC	Kenya Power and Lighting Company
LED	Light-Emitting Diode
LOS	Level of Service
MRI	Monthly Rental Income
NCA	National Construction Authority
NCC	Nairobi City County
NCWSC	Nairobi City Water and Sewerage Company
NEAP	National Environment Action Plan
NEMA	National Environment Management Authority
NET	National Environment Tribunal
OHS	Occupational Health and Safety
PAP	Project Affected Persons
PPE	Personal Protective Equipment
PPM	Parts Per Million
SDGs	Sustainable Development Goals
STP	Sewer Treatment Plant
TIA	Traffic Impact Assessment
TMP	Traffic Management Plan
TOR	Terms of Reference
VAT	Value Added Tax
WRA	Water Resources Authority

Executive Summary

The proponent, **Central Park Residency Limited,** has proposed to construct a 26-level residential building on amalgamated Plot Nos. Nairobi/Block 22/211, 213, 218 and 230 located along Laikipia Road in Kileleshwa Area of Nairobi City County (NCC). The project will contribute to bridging the housing shortage in the area while upholding environmental sustainability and best practices. It is also in line with the Government's National Housing Policy aimed at facilitating the progressive realization of the right to adequate housing by all and promoting the development of housing that is functional, healthy, aesthetically pleasant, and environmentally friendly.

The proponent has amalgamated the aforementioned four (4) properties in order to facilitate integrated site planning, optimize land use efficiency, improve infrastructure coordination, enhance layout flexibility, and ensure compliance with zoning and density regulations applicable within the Kileleshwa area. The amalgamated property will enable coherent development of 1,090 residential units with shared amenities while maximizing the utilization of the available infrastructure. At the time of our site visit, the property was characterized by four (4) typical residential maisonettes and Domestic Servants Quarters (DSQs) which will be demolished to pave way for the proposed development upon acquisition of a demolition permit from Nairobi City County (NCC).

Scope

The scope of this report is to: describe the nature of the project and the physical extent of the project site and its immediate environs; document all baseline information; outline the legal and regulatory framework relevant to the project; analyze project alternatives; and assess potential environmental impacts. The report also aims to develop feasible mitigation measures for anticipated negative impacts and to design an Environmental Management Plan (EMP) that maximizes the expected positive impacts.

Project Objectives

The objective of the proposed project is to construct **five (5) blocks of 25 floors comprising 1,090 residential apartments (601 one-bedroom units, 435 two-bedroom units, 50 three-bedroom units and 4 four-bedroom units), 808 parking bays, convenience store, swimming pool, running & fitness area, kids play area, padel, study area, and a coffee area with associated amenities** in Kileleshwa area of Nairobi City County.

EIA Objectives

The objective of the EIA is to identify, predict and evaluate the economic, environmental, and social impacts of development activities, to provide information on the environmental consequences for decision-making, and to promote environmentally sound and sustainable development through the identification of appropriate alternatives and mitigation measures.

Methodology

The methodology used for the preparation of this EIA Study Report is stated below:

i. Environmental Screening of the proposed project in line with the Second Schedule of EMCA, Legal Notice No. 31 of 2019 and established that the proposed development falls under **High-Risk Projects** ***(Urban development including establishment of new housing estate developments exceeding one hundred housing units)*** which requires submission of the EIA Study Report to NEMA under Section 58 (2) of the act.

ii. A scoping exercise that identified the key issues to be addressed in the assessment including environmental, social, health and safety concerns.

iii. A site reconnaissance and physical evaluation of the project site to assess the baseline information of the project area using a prepared checklist with a specific focus on environmental and human safety issues that are likely to be affected.

iv. Preparation of Terms of Reference (TOR) and submission to the authority for approval in line with Regulation 11 of the Environmental (Impact Assessment and Audit) Regulations, 2003 (*Attached is the copy of TOR Approval (Ref. No. NEMA/ENVIS/EIA/TOR/00425)).*

v. Review the proposed project designs, environmental setting of the area, nature of the proposed activities, implementation plan/schedules, and other available relevant data/information.

vi. Review of the policy, legal and institutional framework on the environment and socio-economic matters pertaining to the proposed project.

vii. Consultations and Public Participation (CPP) with the Project Affected Persons (PAP) through the public meetings, discussions and key informant interviews.

viii. Preparation of an EIA Project Report and the development of an EMP outlining the responsibilities, schedules, monitorable indicators and time frames for submission to NEMA.

Potential Positive Impacts

The positive impacts associated with the proposed project include the following among others:

i. Provision of 1,090 residential apartments in Kileleshwa area. This will enhance the overall competitiveness of the area and in turn encourage more development and growth while contributing towards the provision of additional housing in the area.

ii. Enhance convenience to the residents through the provision of recreational facilities within the same development such as a convenience store, swimming pool, running & fitness area, kids play area, padel, study area, and a coffee area within the same development.

iii. Creation of employment opportunities throughout the project cycle i.e., construction workers, security personnel, pool safety coordinators, fitness trainers, domestic workers, waste transporters, property managers, stewards, chefs, cleaners, a property manager, and a caretaker among others.

iv. Increasing the National Government revenue through taxes such as Value Added Tax (VAT) on building materials, Pay-As-You-Earn (PAYE) on employment income, excise duty on materials, and Monthly Rental Income (MRI) on rental income and revised ground rent among others.

v. Increasing fiscal revenues to the County Government through fees from building plan approval, construction permits, levies, utilities and enhanced land rates among others.

vi. Provision of economic benefits to the proponent through the sale and/or lease of the residential apartments, therefore improving their living standards

vii. Provide a market for goods and services throughout the project cycle such as building materials (cement, sand, ballast, steel etc.) and professional services such as architectural, engineering, and environmental consultancy services.

viii. Promotion of sustainable land use through planned development, leading to enhanced land productivity, improved environmental management, and increased property value.

Potential Negative Impacts and Mitigation Measures

The anticipated negative impacts associated with the proposed project and their mitigation measures include the following:

Impact	Mitigation Measures
Soil Erosion	▪ Obtain an excavation permit from NCC before excavation begins. ▪ Use standard equipment for the excavation works to minimize excessive ground disturbance, soil loosening, and vibration. ▪ Stabilize exposed surfaces through compaction, grading, and levelling to reduce susceptibility to erosion.
Air Pollution	▪ Screen the entire site using dust screens/nets to control and arrest construction-related dust. ▪ Sprinkle water in the work areas twice every day to prevent fugitive dust violations. ▪ Provide adequate and appropriate PPE such as masks to the workers in dusty areas within the site. ▪ Cover the loaded vehicles with clean impervious sheeting to prevent the dispersion of particulate matter. ▪ Sensitize workers and drivers on air quality management during the toolbox meetings.
Noise and Excessive Vibrations	▪ Construction activities are to be undertaken on weekdays between 0800hrs to 1800hrs and on Saturdays only between 0800hrs to 1300hrs. ▪ No construction work will be undertaken on Sundays. ▪ Provide adequate and appropriate PPE such as earmuffs to the workers in noisy environments within the site. ▪ Sensitize workers and drivers on minimal permissible noise levels every month. ▪ Schedule all noisy activities concurrently to reduce the exposure period. ▪ Endeavour to use equipment installed with noise abatement devices as much as practicable. ▪ Regular maintenance of the machinery to reduce frictional noise.
Traffic Density	▪ Ferry building materials and construction waste during the off-peak hours. ▪ Engage traffic marshals to control traffic in and out of the site. ▪ Provide temporary car parking spaces for construction vehicles within the site boundary. ▪ Install traffic control/warning signs to inform motorists and the public of the potential hazards. ▪ Provide separate entry and exit lanes with sufficient throat length. ▪ Provide a designated pick-up and drop-off zone within the proposed development to prevent vehicle queuing along the access road. ▪ Provide and ensure routine maintenance of the parking bays and related infrastructure.
Solid Waste	▪ Design and implement a Waste Management Plan for the entire project cycle. ▪ Provide a centralised Waste Collection Centre (WCC) before final disposal. ▪ Provide properly labelled and colour-coded receptacle bins for solid waste management within the site.

	▪ Provide adequate and appropriate PPE such as gloves and masks to all the workers handling the solid waste within the site. ▪ Segregate non-hazardous waste into organic and non-organic fractions before final disposal. ▪ Engage a NEMA-registered waste transporter to collect and dispose of segregated waste at designated disposal sites.
Liquid Waste	▪ Construct a mini–Sewer Treatment Plant (STP) for pre-treatment of liquid waste before final discharge into the existing conventional sewer line. ▪ Extend the connection of the proposed development to the existing conventional sewer system upon acquisition of a connection permit from the Nairobi City Water and Sewerage Company (NCWSC). ▪ Design and construct an internal reticulation system which can consistently handle the loads even at peak volumes. ▪ Obtain a site toilet from NCC before the construction begins. ▪ Provide sufficient and suitable sanitary conveniences for the workers during the construction phase. ▪ Proper decommissioning of the sanitary conveniences once the construction works are completed. ▪ Install hygiene awareness signs at strategic points within the site and hold regular toolbox talks on hygiene with the personnel.
Water Demand	▪ Extend the connection of the main water supply to the proposed development upon acquisition of a connection permit from NCWSC. ▪ Drill a borehole to supplement the existing NCWSC water supply subject to the acquisition of an authorization permit from WRA and a separate EIA license from NEMA. ▪ Harvest rainwater for reuse to supplement the existing NCWSC water supply. ▪ Install water-efficient fixtures and fittings within the development such as 6 litres dual flush cisterns, low flow rate taps and showerheads. ▪ Monitor the water consumption within the site every month.
Energy Demand	▪ Install an onsite transformer to supply energy to the proposed development subject to the acquisition of a connection permit from the Kenya Power and Lighting Company (KPLC). ▪ Install solar panels as an alternative source of renewable energy for the proposed development. ▪ Install energy-efficient fixtures and fittings within the development such as LED bulbs. ▪ Monitor the energy consumption within the site every month.
Stormwater Drainage	▪ Construct gently sloping internal drainage channels covered with gratings to convey runoff at non-erosive velocities and prevent scouring. ▪ Install rainwater-harvesting facilities within the site structures to reduce the amount of stormwater reaching the surface. ▪ Use of semi-permeable materials during the construction of pavements. ▪ Install sediment control measures such as silt traps, sediment fences, and temporary bunds to prevent sediment discharge into the river.
Oil Pollution	▪ Fit all internal drainage facilities with adequate functional oil-water separators and silt traps.

	▪ Store all oils/grease in a designated area at the contractor's yard away from the site. ▪ Proper disposal of oily materials such as oil drums and cans at designated disposal sites by licensed waste transporters.
Health and Safety of Workers	▪ Register the site as a workplace with the Directorate of Occupational Safety and Health Services (DOSHS) before the construction begins. ▪ Obtain insurance covers against accidents for all the workers before the construction begins. ▪ Ensure all the workers are insured against accidents before the construction begins. ▪ Provide adequate and appropriate PPE and ensure that all workers wear them at all times. ▪ Provide first aid facilities and ensure that the workers are trained in emergency response. ▪ Develop an Emergency Response Plan (ERP) to manage the occurrence of anticipated hazards during the construction phase. ▪ All workers shall be sensitized before construction begins on how to control accidents related to construction. ▪ Keep a record of the public emergency service telephone numbers including Police, Fire brigade, and Ambulance at strategic points. ▪ Ensure that the workers are registered with SHIF/NSSF and remit appropriate fees.
Fire Risks	▪ Hire a competent authorized contractor to undertake the electrical works. ▪ Provide adequate firefighting equipment at strategic places within the property. ▪ Train staff on the use of the available firefighting equipment. ▪ Conduct annual fire drills within the site to sensitize the workers and residents.
Security Risks	▪ Engage security personnel to guard the site and monitor the movement of people in and out of the property at all times. ▪ Install security lights around the property and ensure they are switched on only during the night hours. ▪ Construct a boundary wall and gatehouse to enhance security within the site.
Loss of Vegetation	▪ Transplant the conservation-sensitive species such as *hibiscus fragilis* within the riparian buffer zone. ▪ Retain all existing trees and shrubs within the riparian reserve. ▪ Obtain a tree-cutting clearance certificate from the Nairobi County Director of Forestry before cutting down the trees. ▪ Undertake a comprehensive landscaping exercise by planting indigenous trees within the riparian reserve and designated open spaces.

Conflict with Neighbors	▪ Establish a Grievance Redress Mechanism that is easily accessible to all stakeholders. ▪ Ensure continuous communication between the proponent and stakeholders on the progress of the project and its effects.

Conclusion and Recommendations

The proposed project will have numerous socio-economic benefits such as the provision of housing and the creation of employment opportunities among others. The Environmental Impact Assessment (EIA) has identified several negative impacts and a comprehensive Environmental Management Plan (EMP) has been developed to mitigate and manage these risks effectively. In light of the EIA findings and the mitigation measures outlined in the EMP, it is our recommendation that the project be allowed to proceed subject to the full and effective implementation of the EMP.

CHAPTER ONE: INTRODUCTION

1.1 General Overview

Kenya's rapidly growing population and high rate of urbanization have significantly increased the demand for housing. According to the Africa Housing Finance Yearbook 2024 published by the Centre for Affordable Housing Finance in Africa (CAHF), the country's housing demand and supply is approximately 250,000 units and 50,000 units respectively resulting in an 80% housing deficit. A significant portion of this unmet demand is concentrated in the Nairobi Metropolitan Area highlighting the urgent need for expanded residential development. To address this, the government has introduced policy and planning frameworks including the National Housing Development Programme, Vision 2030 strategy and urban zoning reforms to expand housing supply across all income levels.

In light of the above, the proponent **Central Park Residency Limited,** has proposed to construct **1,090 residential apartments and 808 parking bays with associated amenities** on Amalgamated Plot Nos. Nairobi/Block 22/211, 213, 218 and 230 located along Laikipia Road in Kileleshwa Area of Nairobi City County. The proposed development will contribute to bridging the housing shortage in the area while adhering to environmental best practices. The proponent recognizes that they have a responsibility to the environment beyond legal and regulatory requirements and are committed to minimizing environmental impacts and continually improving and monitoring the environmental performance of the proposed development and its surroundings and has therefore engaged the environmental experts to carry out the EIA in accordance with the Environmental Management and Coordination Act (EMCA), CAP 387. The EIA team has evaluated the possible environmental, occupational health and safety impacts of the proposed development during the project cycle and in turn, proposed suitable methods of mitigating the anticipated negative impacts. This will not only achieve a safe and clean environment but also ensure that the proposed project activities conform with the existing environmental legislation.

1.2 Objectives of the EIA

The overall objective of EIA is to ensure that environmental concerns are integrated in the proposed project in order to contribute to sustainable development.

The specific objectives are:

i. To identify potential environmental impacts of the proposed project and assess the significance of these impacts.
ii. To assess the relative importance of the various project alternatives.
iii. To propose mitigation measures for the significant negative impacts of the project on the environment.
iv. To seek the views and concerns of all the Project Affected Persons (PAP) in regards to the proposed project.
v. To generate baseline data for monitoring and evaluation of how well the mitigation measures are being implemented during the project cycle.
vi. To develop an Environmental Management Plan (EMP) for the project cycle 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.
vii. To present the results of the EIA in such a way that they can guide informed decision-making.

1.3 Project Objectives

The objective of the proposed development is to construct **five (5) blocks of 25 floors comprising 1,090 residential apartments (601 one-bedroom units, 435 two-bedroom units, 50 three-bedroom units and 4 four-bedroom units), 808 parking bays, convenience store, swimming pool, running & fitness area, kids play area, padel, study area, and coffee area with associated amenities** in Kileleshwa area of Nairobi City County.

1.4 Methodology

The methodology used for the preparation of this EIA Study report is stated in the steps below:

i. Environmental Screening of the proposed project in line with the Second Schedule of EMCA, Legal Notice No. 31 of 2019 and established that the proposed development falls under **High-Risk Projects** ***(Urban development including establishment of new housing estate developments exceeding one hundred housing units)*** which requires submission of the EIA Study Report to NEMA under Section 58 (2) of the act.
ii. A scoping exercise that identified the key issues to be addressed in the assessment including environmental, social, health and safety concerns.

iii. A site reconnaissance and physical evaluation of the project site to assess the baseline information of the project area using a prepared checklist with a specific focus on environmental and human safety issues that are likely to be affected.

iv. Preparation of Terms of Reference (TOR) and submission to the authority for approval in line with Regulation 11 of the Environmental (Impact Assessment and Audit) Regulations, 2003 (*Attached is the copy of TOR Approval (Ref. No. NEMA/ENVIS/EIA/TOR/00425).*

v. Review the proposed project designs, environmental setting of the area, nature of the proposed activities, implementation plan/schedules, and other available relevant data/information.

vi. Review of the policy, legal and institutional framework on the environment and socio-economic matters pertaining to the proposed project.

vii. Consultations and Public Participation (CPP) with the Project Affected Persons (PAPs) through public meeting(s), discussions with the project team and key informant interviews.

viii. Preparation of an EIA Study Report and the development of an EMP outlining the responsibilities, schedules, monitorable indicators and time frames for submission to NEMA.

1.5 Terms of Reference

The following are the TOR developed during the scoping exercise;

i. The proposed location of the project;

ii. A concise description of the national environmental legislative and regulatory framework, baseline information and any other relevant information related to the project;

iii. The objectives of the project;

iv. The technology, procedures and processes to be used, in the implementation of the project;

v. The materials to be used in the construction and implementation of the project;

vi. The products, by-products and waste generated by the project;

vii. A description of the potentially affected environment;

viii. The environmental effects of the project including the social and cultural effects and the direct, indirect, cumulative, irreversible, short-term and long-term effects anticipated;

ix. Alternative technologies and processes available and reasons for preferring the chosen technology and processes;

x. Analysis of alternatives including project site, design and technologies and reasons for preferring the proposed site, design and technologies;

xi. An environmental management plan proposing the measures for eliminating, minimizing or mitigating adverse impacts on the environment; including the cost, time frame and responsibility to implement the measures;

xii. Provision of an action plan for the prevention and management of foreseeable accidents and hazardous activities in the cause of carrying out activities or major industrial and other development projects;

xiii. The measures to prevent health hazards and to ensure security in the working environment for the employees and for the management of emergencies;

xiv. An identification of gaps in knowledge and uncertainties which were encountered in compiling the information;

xv. An economic and social analysis of the project;

xvi. An indication of whether the environment of any other state is likely to be affected and the available alternatives and mitigating measures

1.6 Project Justification

Article 43 (1) (b) of the Constitution of Kenya empowers every citizen with a right to accessible and adequate housing and reasonable standards of sanitation. According to the National Housing Corporation Strategic Plan of 2023-2027, there is currently a backlog of 2 million housing units. The deficit is bound to rise due to the high urbanization rate and population growth in the country. Nairobi is among the areas affected by the deficit with close to 60 per cent of its population living in slums. This calls for the development of housing units to accommodate the expanding urban population and therefore, the proposed development will provide additional housing in the area with an aim to bridge the existing demand gap.

1.7 Socio-Economic Benefits

The proposed development will provide the following social economic benefits;

i. Provision of Residential Apartments

The proposed project will provide 1,090 residential apartments in Kileleshwa area. This will enhance the overall competitiveness of the area and in turn encourage more development and growth while contributing towards the provision of additional housing units in the area.

ii. Provision of Recreational Facilities to the Residents

The proponent will provide recreational facilities within the development, including a convenience store, swimming pool, running & fitness area, kids play area, padel, study area, and a coffee area. These amenities will enhance convenience and accessibility to the residents, promote physical health and well-being, foster social connections and community bonds, and contribute to improved mental health.

iii. Provision of Employment Opportunities

The proposed project will create employment opportunities for both skilled and semi-skilled workers. During the construction phase, the proposed project will employ construction workers such as masons, plant operators, plumbers, landscapers, steel fixers, waste transporters, tilers, painters, and electricians among others. For the operation phase, the project will employ security personnel, pool safety coordinators, fitness trainers, domestic workers, waste transporters, cleaners, property managers, and a caretaker among others

iv. Contribution of Revenue to the National Government

There will be an increase in revenue to the National Government revenue through taxes such as Value Added Tax (VAT) on building materials and professional services from architectural, structural and environmental consultancy services; Pay-As-You-Earn (PAYE) on employment income for the construction workers; excise duty on materials; Monthly Rental Income (MRI) on rental income; and revised ground rent among others.

v. Contribution of Fiscal Revenue to the County Government

There will be an increase in revenue to the County Government through fees from building plan approval, construction permits, levies, utilities and enhanced land rates among others.

vi. Provision of Revenue to the Proponent

There will be an increase in revenue for the proponent through the renting/sale of the residential apartments and therefore improving their living standards.

vii. Market for Goods and Services

During the construction phase, the project will require building materials (cement, ballast, sand, tiles, stones etc.) and professional services such as architectural, engineering, and environmental consultancy services among others. This will have a positive impact on the economic status of the suppliers and professionals in the country. The local economy of the neighborhood will also receive a boost through the purchase of food items, drinks, and other commodities required by the workers and the incoming population.

CHAPTER TWO: PROJECT DESCRIPTION, DESIGN AND IMPLEMENTATION

2.1 Nature of the Project

The proposed project will entail the construction of **1,090 residential apartments** in Kileleshwa area. The proponent has amalgamated the four (4) properties in order to facilitate integrated site planning, optimize land use efficiency, improve infrastructure coordination, enhance layout flexibility, and ensure compliance with zoning and density regulations applicable within the area. The amalgamated property will enable coherent development with shared amenities while maximizing the utilization of the available infrastructure. At the time of our site visit, the property was characterized by four (4) typical residential maisonettes and Domestic Servants Quarters (DSQs) which will be demolished to pave the way for the proposed development upon acquisition of a demolition permit from NCC.

Plate 2. 1: The Site

Source: Fieldwork, 13/02/2026

2.2 Project Location

The subject property is located along *Laikipia Road* and lies on latitude -1.2722 and longitude 36.7933 in Kileleshwa area of Dagoretti North Sub-County, Nairobi City County. It abuts *Kirichwa Ndogo River* to the north, *Luxehill Villas* to the east and *St Joseph's Apartments* to the west as shown in figure 2.1 below.

Figure 2. 1: Location Map

Source: Google Earth, 2026

2.3 Land Tenure, Size, and Ownership

The subject property comprises **Plot Nos. Nairobi/Block 22/211, 213, 218 and 230** registered under the Land Registration Act and the Land Registration (General) Regulations 2017 on **leasehold interest** for a period of **99 years** from 1st August 1988**.** The area of each individual plot is as tabulated in table 2.1 while the combined area for the amalgamated property measures approximately **0.7502 hectares.** The current registered proprietor is **Central Park Residency Limited** of P.O. Box 43942-00100, Nairobi. (*Attached is a copy of the ownership documents).*

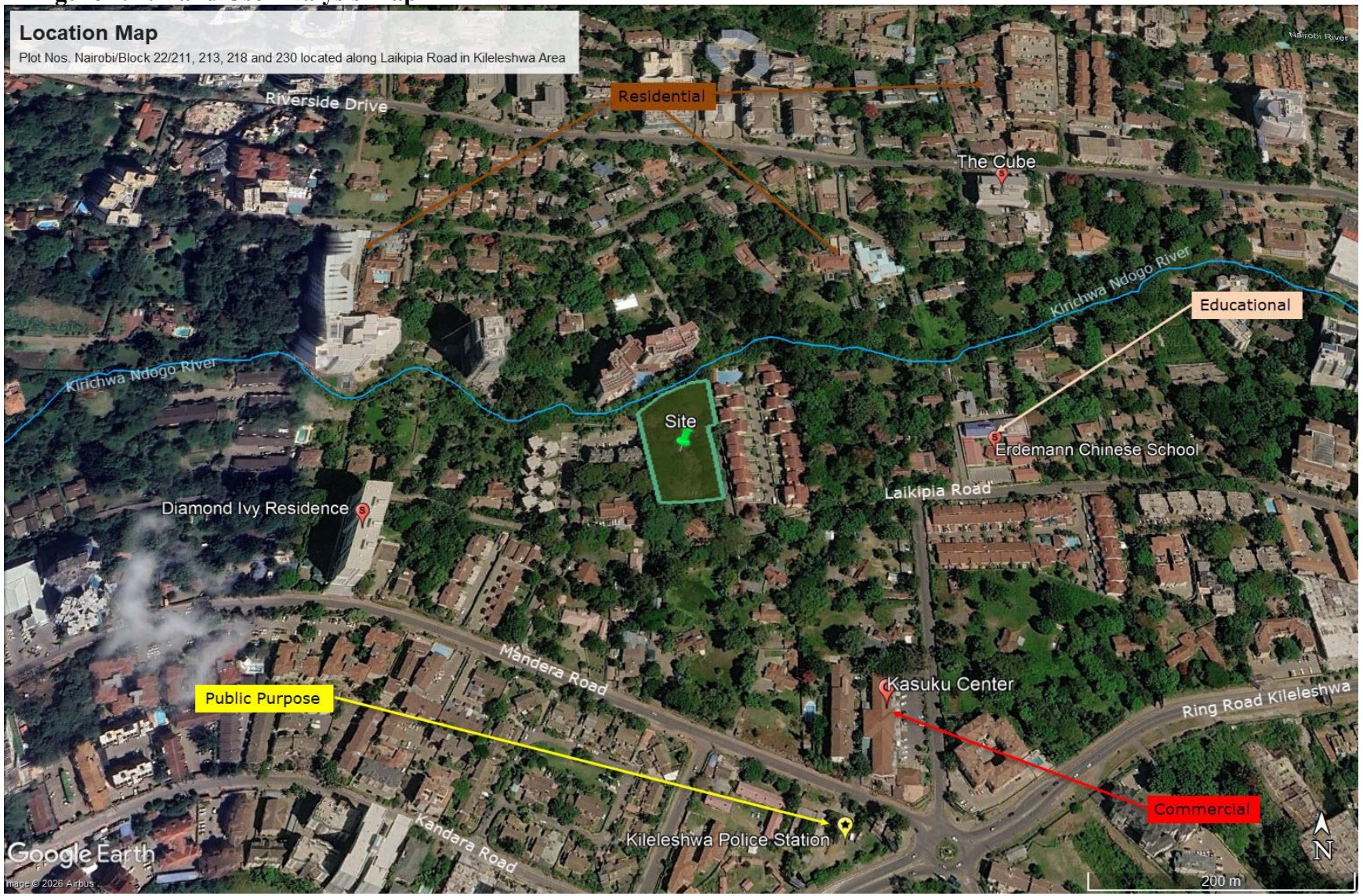
Table 2. 1: Plot Numbers and Areas

S/N	Plot. No.	Original No.	Area Hectares)
1.	Nairobi/Block 22/211	4857/106	0.1748
2.	Nairobi/Block 22/213	4857/107	0.1902
3.	Nairobi/Block 22/218	4857/108	0.1925
4.	Nairobi/Block 22/230	4857/109	0.1927
		Total Area	**0.7502**

2.4 Zoning of the Area

The property is located in **Zone 4C** according to *Sessional Paper No. 1 of 2021 on Nairobi City County Development Control Policy* which allows for **Mixed Developments (Commercial, Residential and Professional Offices) at a minimum size of 0.05Ha.** Notable residential developments at a radius of 150 meters from the project site include *Diamond Ivy Residence (G+18), Kaisa Gardens (G+14), and Avic Park Apartments (G+11).* Other land uses within a radius of 250 meters from the project site include *Educational (Erdemann Chinese School), Commercial (Kasuku Centre), and Public Purpose (Kileleshwa Police Station).* Therefore, the proposed project complies with existing zoning regulations, integrates with surrounding land uses, and will ensure better utilization of the property giving it a higher-quality urban character.

Figure 2. 2: Land Use Analysis Map



Source: Google Earth, 2026

Plate 2. 2: Kaisa Garden (L) and Diamond Ivy Residence (R)

Source: Fieldwork, 13/02/2026

2.5 Project Description

The proponent proposes to construct **five (5) blocks of 25 floors comprising 1,090 residential apartments (601 one-bedroom units, 435 two-bedroom units, 50 three-bedroom units and 4 four-bedroom units), 808 parking bays, convenience store, swimming pool, running & fitness area, kids play area, padel, study area, and coffee area with associated amenities** with the following features:

i. **Basement 1** comprising 185 parking bays.
ii. **Basement 2** comprising 176 parking bays.
iii. **Basement 3** comprising 176 parking bays.
iv. **Basement 4** comprising 128 parking bays.
v. **Basement 5** comprising 116 parking bays.
vi. **Ground floor** comprising convenience store, running and fitness area, swimming pool, padel, kids play area, study area, coffee area, changing room, shower and washrooms.

BLOCK A DEVELOPMENT

i. **Typical 1st floor to 25th floor** comprising 16 units of one-bedroom residential apartments.

BLOCK B DEVELOPMENT

i. **Typical 1st floor to 25th floor** comprising 11 units of residential apartments (a unit of one-bedroom apartments and 10 units of two-bedroom apartments)

BLOCK C DEVELOPMENT

i. **Typical 1st floor to 25th floor** comprising 2 units of three-bedroom residential apartments.

BLOCK D DEVELOPMENT

i. **Typical 1st floor to 25th floor** comprising 5 units of two-bedroom residential apartments.

BLOCK E DEVELOPMENT

i. **Typical 1st floor to 22nd floor** comprising 20 units of duplex residential apartments (16 units of one-bedroom apartments and 4 units of two-bedroom apartments)

ii. **Typical 23rd floor to 25th floor** comprising 20 units of triplex residential apartments (16 units of two-bedroom apartments and 4 units of four-bedroom apartments).

Each unit consists of a lounge, dining, kitchen, pantry, cloakroom, washrooms, and terraces.

Other salient features include 6 staircases, 12 lift shafts, a lift lobby, a reception lobby, electrical and mechanical ducts, a driveway, ramps, and a passage. Further details, specifications, and features of the proposed project can be obtained from the architectural plans annexed to the report.

Table 2. 2: Total Number of Parking Bays

Description	Parking Bays
Basement 1	186
Basement 2	186
Basement 3	186
Basement 4	144
Basement 5	106
Total	**808 Bays**

Table 2. 3: Total Number of Units

Block	Description	1 Bedroom Units	2 Bedroom Units	3 Bedroom Units	4 Bedroom Units	Total Units
A	**Typical 1st to 25th floor**	**400** (16 units × 25 levels)	-	-	**-**	**400**
B	**Typical 1st to 25th floor**	**25** (1 unit × 25 levels)	**250** (10 units × 25 levels)	**-**	**-**	**275**
C	**Typical 1st to 25th floor**	-	-	**50** (2 units × 25 levels)	**-**	**50**
D	**Typical 1st to 25th floor**	-	**125** (5 units × 25 levels)	**-**	**-**	**125**
E	**Typical 1st to 22nd floor**	**176** (16 duplex units × 22 levels)	**44** (4 duplex units × 22 levels)	**-**	**-**	**220**
	Typical 23rd to 25th floor	-	**16** (16 triplex units × 3 levels)	**-**	**4** (4 triplex units × 3 levels)	**20**
TOTAL		**601**	**435 units**	**50 units**	**4 units**	**1,090 Units**

2.6 Existing Infrastructure and Services

2.6.1 Roads and Accessibility

The property is accessed via *Laikipia Road* which is tarmacked, in need of rehabilitation, has walkways and street lights. The roads connect to the Ring Road Kileleshwa, Oloitoktok Road, and the Nairobi Expressway, which link the area to nodes such as the Westgate Shopping Mall, The Mall Westlands, and the Central Business District for socio-economic activities. The accessibility of the site will be instrumental during the project cycle.

The proponent commissioned a *Traffic Impact Assessment (TIA)* to evaluate the potential effects of the proposed development on the surrounding road network. The findings of the TIA indicate that the *Laikipia Rd/Migori Rd intersection, Ring Rd Kileleshwa/Laikipia Rd intersection, and Ring Road Kileleshwa/Mandera Rd/Githunguri Rd/Oloitoktok Rd/Migori Rd intersection* are currently operating at *Level of Service (LOS) C or better* except the *Arboretum Drive/Ring Road Kileleshwa intersection* which operates at *LOS F during the AM peak* signifying minimal congestion and acceptable traffic conditions. To mitigate potential disruptions during the project cycle, a Traffic Management Plan (TMP) has been developed outlining practical measures to ensure the smooth flow of traffic along the access roads in order to minimize inconvenience to road users. The proponent is committed to ensuring strict implementation of the TMP throughout the project cycle. *(Attached is the Traffic Impact Assessment Report).*

Plate 2. 3: Laikipia Road

Source: Fieldwork, 13/02/2026

2.6.2 Water Supply

The general area as well as the site is served with water from the Nairobi City Water and Sewerage Company (NCWSC). During the construction period, water will be required for construction activities *such as cement mixing, curing of concrete, suppressing dust, and drinking water for workers among others.* On occupation, water will be *used for potable uses such as drinking and food preparation, as well as non-potable uses including bathing, laundry, toilet flushing, and general cleaning within the residential units and common areas*. The estimated water demand during the operation phases will be approximately *270m³ per day*. The sources of water for the proposed development will be from the *NCWSC water supply, an onsite borehole, and harvested rainwater.*

The proponent will extend the connection of the main water supply to the proposed development upon the acquisition of a connection permit from NCWSC. The developer will also *drill a borehole* as an alternative source of water subject to the acquisition of an authorization permit from Water Resource Authority (WRA) and harvest rainwater for reuse to supplement the existing main water supply. The proponent will further provide water storage tanks with a capacity of approximately 900m³ able *to serve the residents for at least three (3) days*.

2.6.3 Energy Supply

The general area as well as the site is served by electricity from the Kenya Power & Lighting Company (KPLC) main grid. During the construction and occupation phases, energy demand will increase as a result of the operation of standard construction equipment and machinery including *power tools, air compressors, and temporary site lighting*; running of household equipment such as *heating, water pumping, cooking, security systems, operation of domestic appliances,* and *lighting purposes* among others. The estimated annual energy demand during the construction and operation phases of the proposed development will be approximately *830 MWh and 2,900 MWh respectively*. The sources of energy for the proposed development will be from the *main grid, solar energy, and a generator.* The proponent will apply for an *onsite transformer* for power supply within the proposed development subject to the acquisition of a connection permit from KPLC. The developer will also install solar panels as an alternative source of renewable energy and provide a generator that will serve as a backup source of power in the event of a power outage.

Plate 2. 4: Electricity Transformer along Laikipia Road

Source: Fieldwork, 13/02/2026

2.3.4 Liquid Waste Management

The general area as well as the site is served by the NCWSC conventional sewer for liquid waste Management. The estimated liquid waste that will be generated during the operation phase will be approximately *200m³ per day*. The proponent will construct a solar-powered mini–Sewage Treatment Plant (STP) for pre-treatment of liquid waste before final discharge into the existing 225 conventional sewer system. The STP will reduce pollutant load, improve effluent quality, and enhance the hydraulic and operational efficiency of the downstream sewer network. The proponent shall extend the connection of the proposed development to the existing conventional sewer system upon acquisition of a connection permit from NCWSC. All sanitary works will be done to the entire satisfaction of the County Public Health Department.

Plate 2. 5: Sewer Manhole along Laikipia Road

Source: Fieldwork, 13/02/2026

2.6.5 Solid Waste Management

The solid waste within the area is managed by private waste transporters who collect the waste twice every week. *Construction and demolition waste* is anticipated to be generated during the construction phase and the composition will include *demolition debris, excavated soil, construction debris, pieces of wood and metal, glass, plastic, paper, and food waste* among others. During the operation phase, *municipal solid waste* is anticipated to be generated and will consist of *food waste, paper, bags, plastics, metals, rags, and e-waste* among others. The estimated waste generation will be approximately *1,100 kilograms per day* during the operation phase.

The proponent shall provide a Waste Collection Centre (WCC) for waste management within the property. The waste generated from the proposed project will be segregated, reused where feasible, and transported for final disposal at designated disposal sites by a licensed waste transporter.

2.6.6 Storm Water Management

The stormwater in the general area is managed by the closed and open drains located along the access roads that channel the runoff into the *Kirichwa Ndogo River*. The subject property drains its stormwater through natural infiltration while the excess flows into the open drains that channel the runoff into the river. For stormwater management within the property, the proponent will construct internal drains, harvest rainwater for reuse to reduce the amount of stormwater reaching the surface, and plant indigenous trees within the riparian reserve and designated open spaces to increase the infiltration rate.

Plate 2. 6: Open Drains along Laikipia Road

Source: Field Work, 13/02/2026

2.6.7 Security

The subject plot has been secured with masonry wall and a live fence with a gate. The proponent has also engaged the services of licensed security personnel from *Radar Security* who monitor the movement of people and vehicles in and out of the property. There are also street lights installed in the area that are being used to light the area therefore promoting security and also improving the safety of drivers, riders, and pedestrians during the night. The security in the area is also beefed up by the nearby *Kileleshwa Police Station* which is located approximately 250 meters southeast of the project site. The developer shall construct a boundary wall incorporating a gate and a gatehouse to enhance site security. During occupation, the proponent shall beef up security by installing CCTV cameras at strategic points within the premises and continue to engage the services of licensed security personnel and to enhance the overall safety of the property.

Plate 2. 7: Gate (L) and Boundary Wall (R)

Source: Field Work, 13/02/2026

2.6.8 Telecommunication

The tech ecosystem in Kenya is rapidly growing with telecommunication services being the core infrastructure. The area is well covered by mobile telecommunication such as *Safaricom, Telkom, and Airtel networks.* Other telecommunication services in the area include fiber optics provided by *Safaricom Home Fiber, Liquid Telecom, and Zuku Fiber*. All these will facilitate communication during the project cycle.

2.7 Pre-Construction Stage

This stage shall involve:

i. Appraisal of the baseline conditions to determine supply and demand for the required infrastructural services.
ii. Preparation of the architectural and structural designs and submission to NCC for approval.

iii. Preparation of an EIA Study Report and submission to NEMA for licensing.
iv. Obtaining demolition, tree cutting clearance certificate, hoarding and excavation permits from NCC before the construction begins.
v. Obtaining a Compliance Certificate from the National Construction Authority (NCA) before the construction begins.
vi. Site preparation through the demolition of the existing structures, tree cutting, construction of a hoarding area, site office, material storage area and sanitary facilities.

2.8 Construction Stage

2.8.1 Construction Inputs

The project inputs will include the following:

i. The materials that shall be used will include stones, cement, sand, ballast, ceramic fixtures, steel, wood, glass, painting materials, roofing materials, plastic, electrical and mechanical fixtures. All these shall be obtained from licensed dealers who have complied with the environmental management guidelines and policies and have been approved by the Kenya Bureau of Standards (KEBS).
ii. Several machines shall be used which will include earth-moving equipment (excavators and loaders), material handling equipment (cranes and hoists), construction equipment (concrete mixers and vibrators) and Engineering vehicles (tippers).
iii. The project will require a labour force of both skilled and non-skilled workers. The skilled personnel will include the project consultants (architect, engineers, quantity surveyor, health and safety officer and environmental experts) and the contractor with a team of foreman, masons, carpenters, plumbers, electricians and casual labourers among others.
iv. Other construction inputs will include water from NCWSC or a borehole and electricity from the main grid (KPLC) or provided by a generator.

2.8.2 Construction Activities

i. Excavation Works

The subject property is characterized by a stiff to hard red clay soil at the surface underlain by reddish to greyish slightly to moderately weathered material. This material transitions into weak, fractured agglomerate rock, which is further underlain by a light grey to dark grey, moderately weathered, weak fractured agglomerate rock stratum. Excavation of soils and the weathered rock will be undertaken to pave way for the construction of the foundation and basements using standard equipment which includes an excavator and hydraulic hammer.

There will be no blasting of the rocks within the site to avoid direct impact to the adjacent developments. Loaders and tippers shall be used to aid in the removal of the excavated soils and rock materials. Appropriate excavation works shall be undertaken to ensure that excavation volumes are clearly defined under the supervision of the engineers. The excavated sub-surface materials will be reused for landscaping purposes within the site and in other construction sites. The excavation works will involve controlled basement excavation using a phased benching approach that leverages the site's steep slope to minimize extensive vertical cutting and associated environmental disturbance.

Excavation activities will include topsoil stripping, bulk earthworks, material reuse through cut-and-fill optimization, and limited disposal to designated disposal sites. Appropriate structural support measures including temporary retaining systems and slope stabilization techniques will be implemented to ensure geotechnical stability and safety throughout the excavation period. Dewatering and surface water management systems will be installed to control groundwater ingress and prevent sediment-laden runoff from impacting surrounding environment and neighboring developments and the Kirichwa Ndogo River.

ii. Structural Steelworks

The structural elements which include the strip footings, shear walls, slabs, beams, columns, and column bases will be constructed using reinforced concrete. The structural steel will be used to reinforce the concrete since it is weak in tensile strength. Structural steelworks will involve steel cutting, welding and fixing on an already constructed formwork before concreting is carried out. The steelworks shall be carried out by steel fixers under strict supervision from the project engineer.

iii. Concrete Works

The construction of the proposed development will be carried out in line with the approved architectural & structural plans and comply with the specifications issued and approved by the project team. Concrete works will involve the mixture of cement, sand, and ballast in the specified ratios and poured into already constructed formwork. The poured concrete will be cured for a specified period approved by the project engineer. The concreting will be supplemented by concrete mixers and vibrators.

iv. Masonry Works

The interior and exterior walls shall be built using machine-cut stones sourced from licensed suppliers. The walls will be constructed using cement and sand mortar at specified ratios approved by the project engineer.

v. Mechanical and Electrical Works

This phase will involve the installation of water and wastewater piping, electrical fixtures and appliances including lighting fixtures within the proposed development by licensed electricians and plumbers. This will be followed by an extension of the connection of the electrical and mechanical configuration to the existing power, sewer and water supply lines upon acquisition of the relevant permits from KPLC and NCWSC. The proponent shall also construct a *mini STP* with related internal reticulation system for pre-treatment of all liquid waste from the development before final discharge into the existing conventional sewer system. All the work will be carried out by a licensed electrician and plumber.

vi. Interior and Exterior Finishes

After concrete and masonry works are completed, plastering will be carried out both internally and externally in line with the specifications of the architect. The plastering will ensure the building is structurally strong, protect it from weather effects and give it an attractive look. Thereafter, aluminium powder-coated doors and windows will be installed. Painting of the building will be carried out with cement primer and eco-friendly zero-Volatile Organic Compounds (VOC) paints. Thereafter, the installation of floor and wall ceramic tiles will be undertaken by a licensed tiler.

vii. Final Clean Up and Landscaping

The final cleanup will be carried out once the construction activities are completed. All the solid waste generated during the construction phase will be reused where feasible and/or disposed of at designated approved sites by NEMA-licensed waste transporters. Thereafter, the proponent will undertake a comprehensive landscaping exercise by planting trees and grass within the riparian reserve and designated open spaces.

2.9 Operational phase

The project will be used for **Residential Purposes** and the operational activities will involve the following:

i. **Residence:** A total of 1,090 families will reside within the development. Operational activities will include cooking, laundry, cleaning, and resting activities within the residential apartments.
ii. **Recreational Activities:** There will be several recreational and leisure activities within the development, aided by the presence of the gym, padel court, and a swimming pool.
iii. **Social Amenities:** The development will feature a range of community engagement spaces including a coffee area, that will provide opportunities for social interaction, casual dining,

relaxation, and community events, thus enhancing the overall living experience for the residents.

iv. **Retail and Convenience Services:** The development will incorporate a convenience store to cater to the day-to-day shopping needs of residents. Operational activities will include the stocking, display, and retail sale of everyday household goods, groceries, and personal care items, providing residents with easy and immediate access to essential commodities without the need to leave the development.

v. **Property Management:** The proponent shall engage the services of a management company to ensure the following:

   a) Obtain an Occupation Certificate from NCC before operation begins.
   b) Collect rent and service charges from the tenants and ensure routine maintenance of and servicing of the generator, electrical, firefighting and mechanical equipment within the development.
   c) Ensure monthly monitoring of energy and water consumption within the development.
   d) Ensure regular cleaning of the common areas within the development such as the parking bays, running & fitness area, kids play area, padel, study area, swimming pool, garbage room, lobbies, reception, coffee area, staircases, and other common areas.
   e) Ensure security measures are adhered to within the property by engaging the services of licensed security personnel to safeguard the property and monitor the movement of people and vehicles in and out of the site.

2.10 Decommissioning Phase

Decommissioning is an important phase in the project cycle and comes last to wind up the operational activities of a particular project. It refers to the final disposal of the project and associated materials at the expiry of the project lifespan. If such a stage is reached, the proponent needs to remove all materials resulting from the demolition/decommissioning of the site. The following should be undertaken to restore the environment:

i. Give notices of at least three (3) months to the tenants of the intention to redevelop the property and/or demolition of the development.
ii. Prepare a decommissioning plan and submit it to NEMA for approval at least three (3) months prior to the demolition exercise.
iii. Apply for a demolition permit from the Nairobi City County Government.
iv. Dismantle the equipment including the electrical and mechanical fixtures/fittings.

v. Demolish the existing structures and remove the debris from the site while adhering to all the relevant environmental legislation.

vi. Backfill the surface openings with a suitable material such as pebbles and/or demolition debris.

vii. Undertake soft landscaping by planting indigenous trees, grass, and flowers. The site should be well landscaped by flattening the mounds of soil.

viii. Fence and signpost unsafe areas until natural stabilization occurs.

The major emphasis here will be the restoration of the affected environment, proper disposal of dismantled materials and protection of public health and safety.

2.11 Products, By-Products, and Wastes

i. **Products:** The final product will be **1,090 residential apartments.**

ii. **By-Products:** The by-products will include;

a) The excavated soils and rocks will be reused for landscaping and backfilling purposes respectively within the site and other construction sites.

b) Empty cans and drums will be used to store water whereas the damaged ones will be sold to licensed scrap metal dealers.

c) Large pieces of timber/wood generated during the construction phase will be transported back to the contractor's yard for reuse in future while the small pieces of timber/wood will be disposed of for use as fuel for cooking and heating.

iii. **Wastes:** Solid and liquid waste will be generated during the entire project cycle. The anticipated waste will include construction & demolition waste and municipal solid waste during the construction and operation phases respectively. All liquid waste will be channeled to the STP for pre-treatment before final disposal into the existing conventional sewer system whereas the solid waste will be segregated, reused and/or recycled where appropriate and disposed of at designated disposal sites by a licensed waste transporter.

2.12 Project Budget and Duration

The proposed project is estimated to cost **five billion eight hundred twenty-seven million one hundred forty-one thousand five hundred and fourteen Kenyan Shillings only (KES 5,827,141,514.00)**. The project implementation work is estimated to take three (3) years (*Attached is the Bill of Quantities).*

CHAPTER THREE: POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 INTRODUCTION

EIA is an instrument for environmental management and development control. It is now accepted that development projects must be economically viable, socially acceptable and environmentally sound. It is a requirement that all developers conduct EIAs before undertaking any development projects. EIAs are carried out in order to identify potential positive and negative impacts associated with the proposed development with a view of taking advantage of the positive impacts and developing mitigation measures for the negative ones. There are a number of policies, laws and regulations that govern the protection, conservation and exploitation of natural resources coupled with provisions for environmental management. These national policies, laws and regulations cover infrastructure, water, agriculture, forestry and health just to mention a few. The national environment action plan documents cover policy directions regarding the integration of environmental concerns including EIA into the development planning process. Some of the key national laws, policies and regulations that govern the management of environmental resources in the country are discussed herein.

3.2 POLICIES

3.2.1 The National Environmental Action Plan (NEAP)

The NEAP was a deliberate policy effort to integrate environmental considerations into the country's economic and social development initiatives/plans. Section 37 of the EMCA stipulates that NEMA shall formulate the National Environment Action Plan (NEAP) and shall ensure that it has undertaken public participation before the adoption of the plan. The NEAP framework (2009-2013) recognizes the intertwined linkages between economic growth and the environment in Kenya. It highlights priority themes and activities for the country towards achieving a sustainable environment. The policy framework among others proposes the integration of environmental concerns into regional and local development plans, promotion of appropriate land uses and enforcement of EMCA and its subsidiary, and other relevant legislation. The policy framework also advocates for efficient water harvesting, storage, and usage. In human settlements and infrastructure, this policy framework recognizes the associated environmental issues. These include waste management, sanitation, diseases, land-use changes in conservation areas, demand for water, energy, construction materials, pollution, land degradation, biodiversity loss, etc.

Multiple stakeholders' involvement inclusive of the private sector is advocated for within the implementation of this framework towards the achievement of sustainable development goals. The framework also advocates for monitoring and evaluation to ensure effective and efficient environmental policy implementation.

This EIA is undertaken in line with EMCA and its subsidiary legislation and the report proposes measures to mitigate the anticipated negative impacts.

3.2.2 National Policy on Water Resources Management and Development (1999)

While the National Policy on Water Resources Management and Development (1999) enhances a systematic development of water facilities in all sectors for the promotion of the country's socio-economic progress, it also recognizes the by-products of this process as wastewater. It therefore calls for the development of appropriate sanitation systems to protect people's health and water resources from institutional pollution. The same policy also requires that such projects undergo a comprehensive EIA that will provide suitable measures to be taken to ensure environmental resources and people's health in the immediate neighborhood and further downstream are not negatively impacted by the emissions.

All liquid waste generated from the proposed project will be channeled into the STP for pre-treatment before final disposal into the existing conventional sewer system.

3.2.3 National Environmental Policy Framework

The Government of Kenya Environmental Policy is geared towards sound environmental management for sustainable development. This is envisaged in the principle of prudent use, which requires that the present-day usage should not "compromise the needs of future generations". The Environmental Policy aims at integrating environmental aspects into national development plans. The broad objectives of the national environmental policy include:

i. The optimal use of natural resources (land and water) in the improvement of the quality of the human environment.
ii. Sustainable use of natural resources to meet the needs of the present generation while preserving their ability to meet the needs of future generations.
iii. Integration of environmental conservation and economic activities into the process of sustainable development.
iv. Meet the national goals and international obligations by conserving biodiversity, arresting desertification, mitigating the effects of disasters, protecting the ozone layer, and maintaining an ecological balance on earth.

The proponent shall implement the EMP to mitigate the anticipated negative impacts during its project cycle to ensure that the natural environment is not destabilized by the project activities.

3.2.4 National Housing Policy for Kenya, 2016

The Sessional Paper No. 3 of 2016 on National Housing Policy is expected to ensure the progressive realization of the right to accessible and adequate housing and reasonable standards of sanitation for every person as per Article 43 of the Constitution. High urbanization and demographic dynamics in the region are driving demand for real estate and infrastructure. Rapid urbanization being experienced worldwide has brought about many challenges, the most critical being a general deterioration of the living standards of an increasing majority of urban dwellers. The problem of urban housing in the country is characterized by an acute shortage in the number of dwellings, overcrowding in the existing housing stock as well as the existence of sub-standard human settlements such as slums and squatter settlements.

The proposed project aims at the provision of residential apartments in Kileleshwa area.

3.2.5 Sustainable Development Goals (SDGs)

On 25th September 2015, countries adopted the United Nations Sustainable Development Goals (SDGs) aimed at contributing towards ending poverty, protecting the planet, and ensuring prosperity for all as part of a new sustainable development agenda. The SDGs have very significant implications for investment needs and the role of the public sector is fundamental and pivotal. At the same time, the contribution of the private sector is indispensable. The proponent has committed to the SDGs through the proposed development in the following ways:

Goal 3: Good Health and Well Being

The project will contribute to improved health and productivity through the provision of a safe and clean environment by ensuring all liquid waste is channelled into the STP for pre-treatment before disposal into the existing conventional sewer system and that the solid waste is collected and transported for final disposal at designated disposal sites by a licensed waste transporter.

Goal 6: Clean Water and Sanitation

The proponent is committed to providing adequate sanitary facilities during the project cycle. All liquid waste shall be channelled into the STP for pre-treatment before disposal into the existing conventional sewer system. This shall improve water quality and sanitation by ensuring that zero proportion of untreated wastewater is not discharged into the environment.

Goal 7: Affordable and Clean Energy

The proposed development will enhance energy efficiency through the implementation of an energy management systems, incorporating energy-efficient fixtures and fittings such as LED lighting, efficient appliances, and smart control systems to minimize energy consumption. The installation of solar photovoltaic panels will provide a clean, renewable energy source, reducing reliance on grid electricity and lowering the project's carbon footprint. Additionally, the integration of a solar-powered STP will ensure sustainable and energy-efficient treatment of wastewater, further reducing operational energy demand. The design will also incorporate a central courtyard to promote natural lighting and ventilation within the development. This will reduce dependence on artificial lighting and mechanical ventilation during daytime, thereby contributing to additional energy savings while enhancing indoor environmental quality and occupant comfort.

Goal 8: Decent Work and Economic Growth

The creation of employment opportunities during the project cycle shall contribute to reducing the proportion of youth not in employment. The proponent shall ensure an environment that emphasizes the protection of labour rights and promotes a safe and healthy environment for all workers during the project cycle.

3.3 LEGAL FRAMEWORK

3.3.1 The Constitution of Kenya 2010

The Constitution of Kenya is the supreme law of the Republic of Kenya and binds all persons and all State organs at all levels of government. It provides the broad framework regulating all existence and development aspects of interest to the people of Kenya, and along which all national and sectoral legislative documents are drawn. In relation to the environment, Article 42 of Chapter 4 of the Bill of Rights confers on every person 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 measures, particularly those contemplated in Article 69, and to have obligations relating to the environment fulfilled under Article 70.

The proponent shall adhere to the provisions of the EMP to ensure the right to a clean and healthy environment is not infringed.

3.3.2 Environment Management and Coordination Act, Cap 387.

This is the framework law on environmental management and conservation. It provides for environmental protection through: Environmental Impact Assessment; Environmental Audit; Environmental Monitoring; and Environmental Restoration Orders, Conservation Orders, &

Easements. Section 58 of the Act directs that any proponent for any project listed on the Second Schedule to undertake and submit to the authority an Environmental Impact Assessment in the prescribed form while giving the prescribed information which shall be accompanied by the prescribed fee. The act further states that the EIA studies and reports shall be conducted by authorized individual experts or firm of experts in accordance with the EIA regulations, guidelines, and procedures issued thereunder.

The proponent has engaged the services of a licensed firm of experts to undertake this EIA in line with the provisions of this Act.

3.3.3 The Environmental (Impact Assessment and Audit) Regulations, 2003

These regulations stipulate how an EIA Study Report should be prepared and specifies all the requirements that must be complied with. It highlights the stages to be followed, information to be made available, role of every stakeholder and rules to be observed during the EIA Study report-making process. Regulation 4(1) states that no proponent shall implement a project likely to have a negative environmental impact or for which an EIA is required under the Act or these Regulations unless an EIA has been concluded and approved in accordance with these regulations. Regulation 11(1) states that an EIA study shall be conducted in accordance with terms of reference developed during the scoping exercise by the proponent and approved by the Authority. Regulation 17(l) stipulates that during the process of conducting an EIA study under these regulations, the proponent shall in consultation with the Authority, seek the views of persons who may be affected by the project. Regulation 31 states that an environmental audit study shall be undertaken on new projects undertaken after the completion of an environmental impact assessment study report.

The proponent has engaged the services of a licensed firm of experts to undertake this EIA Study Report in line with these regulations. Two public meetings and key informant interviews were also conducted to seek the views of persons who may be affected by the proposed project.

3.3.4 Environmental Management and Co-ordination (Water Quality) Regulations, 2024

These regulations provide for sustainable management of water resources including prevention of water pollution and the protection of water sources. It is an offence under Regulation 4 (2) for any person to throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution. It further requires proponents to have a valid Effluent Discharge License (EDL) before discharging any effluent from point sources, industry, or sewage treatment works into the aquatic environment.

Regulation 14 (1) also requires every licensed person generating and discharging effluent into the environment to carry out effluent discharge quality and quantity monitoring in accordance with methods and procedures of sampling and analysis prescribed by the Authority and to submit records of effluent discharge quality and quantity monitoring to the Authority at least once in every six months or as the Authority may prescribe.

All liquid waste shall be channeled to the STP for pre-treatment before final disposal to the existing conventional sewer system.

3.3.5 Environmental Management and Co-ordination (Waste Management) Regulations, 2024

These regulations apply to the handling, storage, transportation, segregation and destruction of waste. Regulation 4 makes it an offence for any person to dispose hazardous waste on a public highway, street, road, recreational area or in any public place except in a designated waste receptacle. Regulation 5 requires waste generators to collect, segregate and dispose the waste by minimizing the waste generated through the adoption of cleaner production methods. Waste generators are also required to segregate waste as per Regulation 7 and ensure the segregated waste is placed in clearly labelled and color-coded receptacles, bins, containers, and bags as set out in the second schedule.

The proponent shall provide colour-coded receptacles for the segregation of waste and engage the services of licensed waste transporters to dispose of the waste at designated disposal sites during the project cycle.

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

These regulations aim to ensure the maintenance of a healthy environment for all people in Kenya, the tranquility of their surroundings, and their psychological well-being by regulating noise levels and excessive vibration. Regulations 3 and 4 prohibit any person to cause excessive vibrations which exceed 0.5 centimeters per second beyond the property boundary which annoys, disturbs, injures, or endangers the health, or safety of others and the environment. Regulation 13 also requires that the construction equipment shall not perform any work outside construction or repair work so as to emit noise in excess of the permissible levels as set out in the second schedule to these regulations.

The contractor shall ensure that all construction activities are undertaken on weekdays between 0800hrs to 1800hrs and on Saturdays only between 0800hrs to 1300hrs and that all construction machinery used is in good working condition to reduce frictional noise.

3.3.7 Environmental Management and Co-ordination (Air Quality) Regulations, 2024

The objective of these regulations is to provide for the prevention, control, and abatement of air pollution to ensure clean and healthy ambient air. These regulations prohibit any person from engaging in open burning; emitting any liquid, solid or gaseous substance or depositing any such substance in levels exceeding those set out in these regulations; and engaging in spray painting save for in the manner permitted by this Regulation and the Act. Regulation 19 requires the owners or operators of any facility to ensure the ambient air quality at their property boundary does not exceed the limits as prescribed in the first schedule. Regulations 37, 38, and 39 further prohibit any person operating construction equipment, handling construction material, undertaking demolition of structures, stockpiling and storing materials to allow emissions of particulate matter in a manner likely to cause ambient air quality levels to be exceeded.

The proponent shall screen the entire site to control and arrest construction-related dust and sprinkle water in the work areas to prevent fugitive dust violations.

3.3.8 The Sustainable Waste Management Act, 2022

This is an act of Parliament that establishes the legal and institutional framework for the sustainable management of waste and ensures the realization of the constitutional provision on the right to a clean and healthy environment. Section 12 of the act states that all public and private sector entities shall segregate non-hazardous waste into organic and nonorganic fractions; that the segregated waste shall be placed in properly labelled and colour-coded receptacles, bins, containers and bags and that all waste service providers shall collect, handle and transport segregated waste. Section 19 states that private sector entity shall prepare a three-year waste management plan and submit an annual monitoring report to the Authority which shall specify the actual quantities of waste generated by the entity the waste management methods applied by the entity; and any other information that the Authority may require.

The proponent shall prepare a three-year Waste Management Plan for the project cycle in line with the provisions of this Act.

3.3.9 Climate Change Act, 2016

This Act of Parliament was formulated to provide for a regulatory framework for enhanced response to climate change and provide mechanisms and measures to achieve low-carbon climate development. It has provided for incentives that are geared towards encouraging innovations that are centered on climate change mitigation and enhancing climate change resilience and low-carbon development for the sustainable development of Kenya. Climate change is an international agenda

and every stakeholder must take an active role in the mitigation of the effects of climate change. Section (2) of this act states that this Act shall be applied in all sectors of the economy by the national and county governments to mainstream climate change responses into development planning, decision making, and implementation; build resilience and enhance adaptive capacity to the impacts of climate change.

The proponent undertook a Greenhouse Gas (GHG) Emissions and Climate Change Vulnerability Assessment which has proposed to incorporate climate change adaptation and mitigation measures such as tree planting, use of solar energy, rainwater harvesting, use of water & energy-efficient fixtures, and proper waste management through reuse & disposal by a licensed waste transporter.

3.3.10 The Water Act, 2016

This Act of Parliament provides for the regulation, management, and development of water resources, water, and sewerage services. Section 9 states that every person has a right to access water resources. Section 11 states the establishment of the Water Resources Authority (WRA) whose functions are stipulated in section 12 and include but are not limited to receiving water permit applications for water abstraction, the collection of water permit fees, and water use charges. Section 63 of the act states that every person in Kenya has the right to clean and safe water in adequate quantities and to reasonable standards of sanitation as stipulated in Article 43 of the Constitution. Section 143 states that a person shall not, without authority conferred under this Act willfully obstruct, interfere with, divert or obstruct water from any watercourse or any water resource, or negligently allow any such obstruction, interference, diversion, or abstraction; or throw, convey, cause or permit to be thrown or conveyed, any rubbish, dirt, refuse, effluent, trade waste or other offensive matter or thing into or near to any water resource in such manner as to cause, or be likely to cause, pollution of the water resource.

The proponent shall extend the connection of the main water supply to the proposed development upon acquisition of a connection permit from NCWSC and apply for an authorization permit from WRA before drilling the borehole.

3.3.11 The Water (Resources) Regulations, 2025

The purpose of these regulations is to provide a comprehensive legal framework for the regulation, management, and protection of water resources and water use activities in Kenya. Regulation 91 provides that, unless otherwise determined by an inspector, the riparian reserve on each side of a watercourse is a minimum of ten metres, or the full width of the watercourse, up to a maximum of thirty metres on either side of the bank.

Regulations 92 and 93 provide that a landholder or occupier of a riparian reserve may demarcate the riparian boundary of any watercourse or body on such land; in demarcating such land, place visible and permanent beacons at their own cost at sufficient intervals to represent the boundary; and that no person shall undertake the activities listed in Part 1 of the Fifth Schedule on a riparian reserve unless authorized by the Authority in consultation with other relevant stakeholders.

The proponent shall ensure that none of the proscribed activities are carried out within the riparian reserve to a minimum of 10 meters from the highest water mark as pegged by WRA.

3.3.12 Occupational Health and Safety Act, 2007

This is an act of Parliament to provide for the safety, health and welfare of workers and all persons lawfully present at workplaces, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes. The key areas addressed by the Act include: General duties including duties of occupiers, self-employed persons and employees. Enforcement of the act including powers of an occupational safety and health officer; Health General Provisions including cleanliness, ventilation, lighting and sanitary conveniences; Machinery safety including safe handling of transmission machinery, hand-held and portable power tools, self-acting machines, hoists and lifts, chains, ropes & lifting tackle, cranes and other lifting machines, steam boilers, air receivers, refrigeration plants and compressed air receiver; Safety general provisions including safe storage of dangerous liquids, fire safety, evacuation procedures, precautions with respect to explosives or inflammable dust or gas; Chemical safety including the use of material safety data sheets, control of air pollution, noise and vibration, the handling, transportation and disposal of chemicals and other hazardous substances materials; Welfare general provisions including supply of drinking water, washing facilities, and first aid.

The proponent will ensure that the contractor includes adequate measures to promote the health and safety of the workers and the general public during the construction phase.

3.3.13 The Physical and Land Use Planning Act No. 13 of 2019

The objectives of development control are to ensure orderly physical and land use development; to ensure optimal land use; to protect and conserve the environment; and to promote public safety and health among others. Section 57 (1) states that a person shall not carry out development within a county without development permission granted by the respective County Executive Committee Member (CECM). Section 58 (1) and (2) further state that a person shall obtain development permission from the respective CECM by applying for development permission from that CECM in the prescribed form and after paying the prescribed fees and that an applicant for development

permission shall provide documents, plans, and particulars as may be required by the respective CECM to indicate the purposes of the proposed development. Section 58 (3) stipulates that an applicant for development permission shall indicate the proposed uses to which the land shall be put, the population density to which the land shall be subjected, and the portion of the land the applicant shall provide for easements as a consequence of the applicant's proposed development.

The amalgamation, change of use, and architectural plans for the proposed project have been submitted and approved by NCC.

3.3.14 County Government Act, 2012

The Act provides for county governments' powers, functions, and responsibilities to deliver services. The functions which local governments carried out were effectively transferred to the county governments. The Act gives the county the responsibility of planning and co-coordinating all developments within their areas of jurisdiction. Part XI (sections 102-115) of the Act provides for planning principles and responsibilities of the county governments. The land use and building plans provided for in the Act are binding on all public entities and private citizens operating within the particular county. The plans for the proposed project must be approved by the County Government and the County Government may also issue directives and authorizations on various aspects e.g., waste management and fire emergency preparedness among others.

The amalgamation, change of use, and architectural plans for the proposed project have been submitted and approved by NCC.

3.3.15 Public Health Act Cap 242

This Act concerns the protection of public health in Kenya and lays down rules relative to, among other things, food hygiene and protection of foodstuffs, the keeping of animals, protection of public water supplies, the prevention and destruction of mosquitos, and the abatement of nuisances including nuisances arising from sewerage. Section 116 requires that the local authorities (county governments) take all lawful, necessary, and reasonably practicable measures for maintaining its district (counties) at all times in clean and sanitary condition, and for preventing the occurrence therein of, or for remedying or causing to be remedied, any nuisance or condition liable to be injurious or dangerous to health, and to take proceedings at law against any person causing or responsible for the continuance of any such nuisance or condition. Sections 136 and 138 state that all collections of water, sewage, rubbish, refuse and fluids that permit or facilitate the breeding or multiplication of pests shall be termed nuisances and are liable to be dealt with in the manner provided by this Act and that no person shall within a township permit any premises or lands owned

or occupied by him or over which he has control to become overgrown with bush or long grass of such a nature as, in the opinion of the medical officer of health, to be likely to harbour mosquitoes.

The proponent will engage the services of a licensed waste transporter to dispose of the solid waste at designated disposal sites, and all liquid waste shall be channeled into the STP for pre-treatment before final disposal into the existing conventional sewer system.

3.3.16 Energy Act, 2019

The act establishes an Energy and Petroleum Regulatory Authority (EPRA) mandated to perform all function that pertains to energy production, transmission, setting and enforcing of energy policies, public education and enforcing energy conservation strategies, prescribing the energy licensing process and issuing licenses that pertain to the energy sector in Kenya. Sections 117-126 of the Act provide the factors that shall be taken into consideration before the issuance of the license. It states the need and expression of an entity to conserve and protect the environment and natural resources in accordance with the EMCA Cap 387. Moreover, 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.

The proponent will install an on-site transformer to supply energy to the proposed development subject to the acquisition of a connection permit from KPLC.

3.3.17 National Construction Authority Act, 2011

The act is set to streamline, overhaul and regulate the construction industry in Kenya for sustainable development. The NCA establishes the authority and confers on its power to register contractors within the construction industry. The act requires all the contractors, both foreign and local contractors to be registered with the authority. The act also regulates the practices of a foreign contractor by limiting their work to only tender work. The foreign contractors are licensed for only a specific period and once they certify they are in Kenya for that specific time. The foreign contractors must also produce a certificate of compliance. Furthermore, they must lodge an affidavit with the NCA that once the project they have been licensed is over, they shall wind up their business. This prevents them from engaging in any other construction in the country.

The proponent shall engage the services of a contractor and construction workers registered by NCA.

3.3.18 Land Registration Act, 2012

This Act aims to rationalize the registration of titles to land and to give effect to the principles and objects of devolved government in land registration. Section 26 (1) of the Act states that the certificate of title issued by the Registrar upon registration, or to a purchaser of land upon a transfer or transmission by the proprietor shall be taken by all courts as prima facie evidence that the person named as proprietor of the land is the absolute and indefeasible owner, subject to the encumbrances, easements, restrictions and conditions contained or endorsed in the certificate, and the title of that proprietor shall not be subject to challenge, except on the ground of fraud or misrepresentation to which the person is proved to be a party; or where the certificate of title has been acquired illegally, unprocedurally or through a corrupt scheme. A certified copy of any registered instrument, signed by the Registrar and sealed with the Seal of the Registrar, shall be received in evidence in the same manner as the original.

A copy of the ownership document is attached to this report.

3.3.19 The National Land Commission Act, 2012 (No. 5 of 2012)

The act provides for the management and administration of land. Section 5 of the Act outlines the functions of the Commission, pursuant to Article 67(2) of the Constitution as follows: to manage public land on behalf of the national and county governments; to recommend a national land policy to the national government; to advise the national government on a comprehensive programme for the registration of title in the land throughout Kenya; to conduct research related to land and the use of natural resources and make recommendations to appropriate authorities; to initiate investigations, on its own initiative or a complaint, into present or historical land injustices, and recommend appropriate redress; to encourage the application of traditional dispute resolution mechanisms in land conflicts; to assess tax on land and premiums on immovable property in any area designated by law, and to monitor and have oversight responsibilities over land use planning throughout the country.

The subject plot is private property owned by the proponent and does not constitute part of any disputed public utility.

3.4 INSTITUTIONAL FRAMEWORK

3.4.1 National Environment Management Authority (NEMA)

The objective and purpose for which NEMA is established is to exercise general supervision and coordinate 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. A Director General appointed by the president heads NEMA. The Authority is mandated to co-ordinate the various environmental management activities being undertaken by the lead agencies and promote the integration of environmental considerations into development policies, plan, programmes and projects with a view to ensuring the proper management and rational utilization of the environmental resources on a sustainable yield basis for the improvement of the quality of human life in Kenya and identify projects and programmes or types of projects and programmes, plans and policies for which environmental audit or environmental monitoring must be conducted under EMCA.

The EIA Study Report is submitted to the authority for review and licensing. The proponent shall work in liaison with the authority in complying with the provisions of EMCA and any other subsidiary legislation under the Act.

3.4.2 Nairobi City County Government

The County Government is mandated to control developments within its area of jurisdiction. Part of the development control is the compliance and enforcement department. The developer is required under the building code by-laws to notify the planning authority before commencement of the construction. The county officers from different departments (Public Health, Environment, Fire, and Planning) will visit the site during the construction stage to check compliance with the approved drawings.

The proponent shall notify NCC before the commencement of the construction works and adhere to the stipulated conditions in the approvals.

3.4.3 Directorate of Occupational Safety and Health Services (DOSHS)

The directorate will be responsible for the provision of occupational health and safety permits for workplaces and conducting inspections to ensure conformance to the Occupational Safety and Health Act, 2007. The core roles and functions of the directorate include:

i. Workplace Inspection and Audits for compliance with safety laws, issuing improvement or prohibition notices to minimize hazards.
ii. Registration and Licensing of workplaces and certifies plants (boilers, lifting equipment) to ensure they are safe for operation.

iii. Accident Investigation & WIBA Processing to ensure injured workers are compensated.
iv. Medical Surveillance to monitors workers' health through examinations to identify potential work-related health risks.

Advisory and Training on Occupational Safety and Health to employers and employe.

The proponent will register the site as a workplace with DOSHS and obtain the requisite permit before the construction begins.

3.4.4 Water Resources Authority (WRA)

The Water Resources Authority is established under section 11 of the Water Act 2016. It is responsible for the sustainable management of the nation's water resources through:

i. Implementation of policies and strategies relating to the management of water resources;
ii. Development of principles, guidelines and procedures for the allocation of water;
iii. Development of catchment-level management strategies including the appointment of catchments area advisory committees;
iv. Regulate and protect the quality of water resources from adverse impact; and
v. Classify, monitor and allocate water resources.

The proponent ensures that none of the proscribed activities are carried out within the riparian reserve to a minimum of 10 meters from the highest water mark and obtain an authorization permit from WRA before drilling the proposed borehole.

CHAPTER FOUR: BASELINE INFORMATION

4.1 PHYSICAL ENVIRONMENT

4.1.1 Climate

According to the Nairobi County Integrated Development Plan (CIDP) of 2023-2027, Nairobi area has a fairly cool climate resulting from its high altitude the county lies at an altitude of 1,795 metres above sea level. The sunniest and warmest part of the year is from December to March. Temperatures range from a low of 10°C to a high of 29°C. It has a bi-modal rainfall pattern. The long rains season falls between March and May with a mean rainfall of 899 millimetres (mm) while the short rains season falls between October and December with a mean rainfall of 638 mm. The mean annual rainfall is 786.5 mm.

4.1.2 Ambient Air Quality

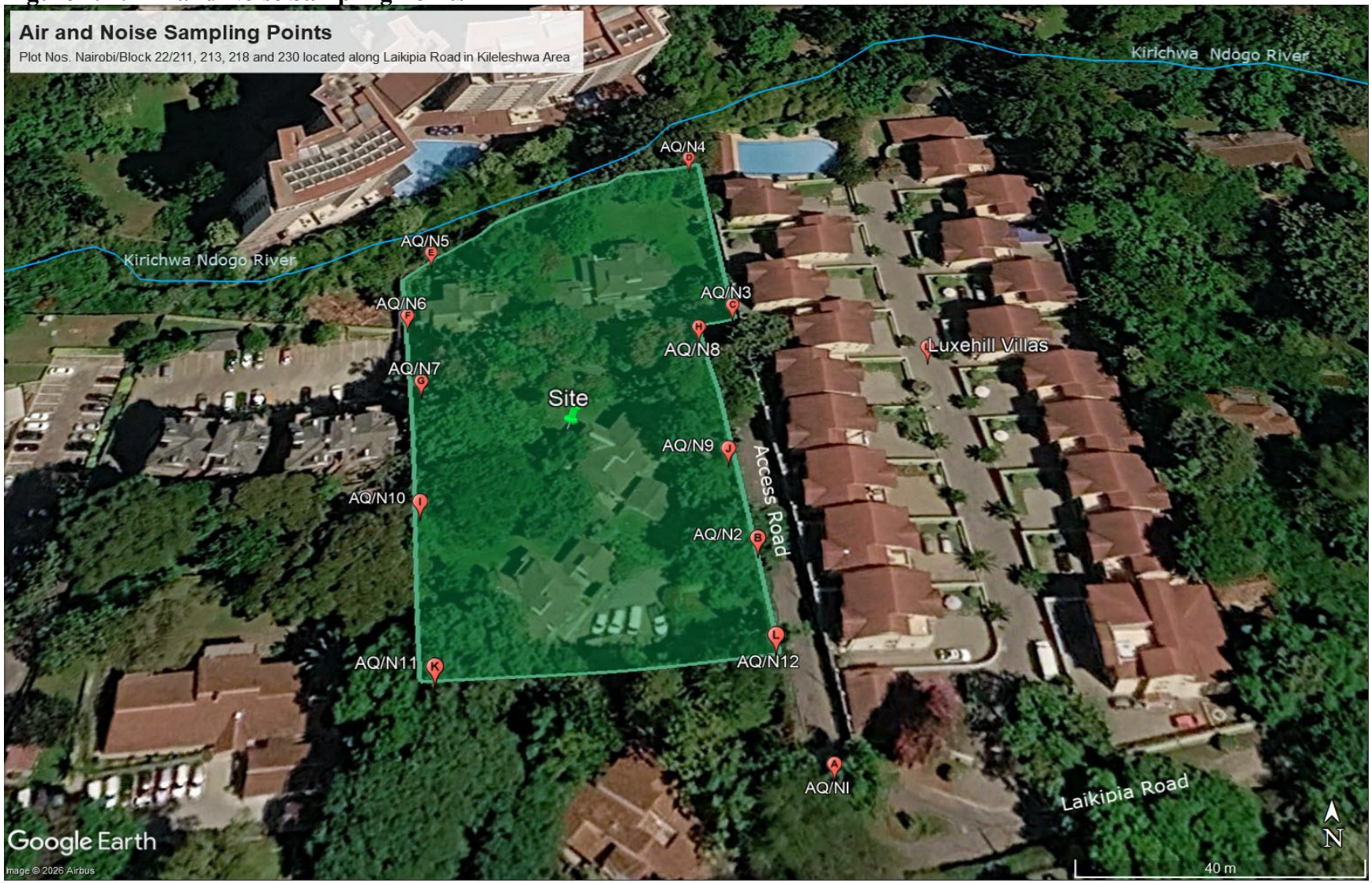
The site was evaluated for ambient air pollutants and suspended particulate matter on 31st March 2026. The weather conditions were sunny with slight cloud cover, indicating moderate atmospheric stability and favorable conditions for ambient air sampling. The equipment in use for the Air Quality Measurement was the Bosean Air Quality Detector Model TZ01PRO which is a portable multi-parameter air quality monitor capable of real-time measurement of Formaldehyde (HCHO), Particulate Matter ($PM_{2.5}$), Total Volatile Organic Compounds (TVOCs), Carbon Monoxide (CO) and Carbon Dioxide (CO_2). The measurements of $PM_{2.5}$, HCHO, CO, CO_2, and TVOCs were taken alongside noise level readings under similar weather conditions and time.

Baseline air quality and noise measurements were carried out across twelve (12) sampling locations as tabulated in Table 4.1 and as shown in Figure 4.1.

Table 4. 1: Sampling Locations and Coordinates

Sample Code	Longitude	Latitude	Media
AQ/N1	1°16'23.8" S	36°47'37.6"E	Air and Noise
AQ/N2	1°16'22.7"S	36°47'37.6"E	Air and Noise
AQ/N3	1°16’20.73" S	36°47’37.18" E	Air and Noise
AQ/N4	1°16’19.24" S	36°47’36.46" E	Air and Noise
AQ/N5	1° 16’19.83" S	36° 47’36.01" E	Air and Noise
AQ/N6	1°16’20.80" S	36° 47’35.68" E	Air and Noise
AQ/N7	1°16’20.65" S	36°47’35.18" E	Air and Noise
AQ/N8	1°16’19.88" S	36°47’36.67" E	Air and Noise
AQ/N9	1°16’22.52" S	36°47’37.00" E	Air and Noise
AQ/N10	1°16’22.49" S	36°47’34.91" E	Air and Noise
AQ/N11	1°16’22.81" S	36°47’34.77" E	Air and Noise
AQ/N12	1°16’23.16" S	36° 47’37.33" E	Air and Noise

Figure 4. 1: Air and Noise Sampling Points



Source: Google Earth, 2026

The results of the ambient air quality within the property boundary are presented in Table 4.2 below:

Table 4. 2: Air Quality Measurements

Sample Point	HCHO (mg/m^3)	$PM_{2.5}$ ($\mu g/m^3$)	CO (ppm)	CO2 (ppm)	TVOCs (mg/m^3)
AQ/N1	0.024	11	2	601	0.061
AQ/N2	0.020	11	1	567	0.045
AQ/N3	0.029	11	1	546	0.033
AQ/N4	0.024	9	1	566	0.041
AQ/N5	0.024	9	1	533	0.026
AQ/N6	0.028	9	1	508	0.016
AQ/N7	0.030	7	1	525	0.023
AQ/N8	0.025	9	1	515	0.018
AQ/N9	0.025	9	1	501	0.011
AQ/N10	0.032	9	1	517	0.020
AQ/N11	0.023	10	1	482	0.013
AQ/N12	0.027	9	1	501	0.011
TWA OELs: (ASHRAE/NIOSH/OSHA)	**0.1 mg/m^3**	**15 $\mu g/m^3$**	**35 ppm**	**1000 ppm**	**2.444(mg/m^3)**

Source: Air Quality Measurement Report

The survey shows low pollutant levels across all sampling points, reflecting consistent ambient air quality conditions, likely aided by the existing vegetation and natural ground cover on-site and therefore poses minimal health risks. The parameters are as detailed below;

i. Formaldehyde (HCHO)

The HCHO levels ranged from 0.020–0.032 mg/m^3 all well below the NIOSH ceiling of 0.1 mg/m^3.

ii. Particulate Matter ($PM_{2.5}$)

The concentrations for $PM_{2.5}$ ranged from 7 to 11 $\mu g/m^3$ which is significantly below the WHO 24-hour guideline of 15 $\mu g/m^3$suggesting that fine particulate matter is under control. These levels of $PM_{2.5}$ are well within the limits indicating that there is limited activity of particulate-generating sources such as traffic congestion, dust, or combustion in the area.

iii. Carbon Monoxide

The concentrations for CO ranged from 1 to 2 ppm which are significantly below the OSHA's threshold of 35 ppm indicating minimal indoor pollution sources. Accumulation of carbon monoxide can decrease indoor air quality and when combined with other pollutants if can form ground level ozone when released outdoors.

iv. Carbon Dioxide (CO_2)

The levels of CO_2 were found to be between 482 to 601 ppm which are within the ASHRAE's 1,000 ppm recommendation indicating good air exchange. Keeping CO_2 levels within this range reduces global CO_2 emissions which could lead to climate change, rising temperatures, more extreme weather events or pose serious health problems.

v. Total Volatile Organic Compounds (TVOCs)

The levels of TVOCs ranged from 0.011 to 0.061 mg/m³ which is considerably below ASHRAE's limit of 2.444 mg/m³ suggesting a low emission rate from potential volatile organic compound sources such as solvents, paints, or vegetation. These levels comply with occupational health guidelines and minimize the risk of headaches, respiratory irritation, and other health issues commonly associated with VOC exposure.

The current occupational exposure levels for $PM_{2.5}$, CO, CO_2, HCHO, and TVOCs are within established OELs with no effect/harm to the environment. This baseline survey establishes a foundation for providing initial levels for comparison with future monitoring efforts and informs the development of an Environmental Management Plan.

4.1.3 Ambient Noise Levels

The ambient noise levels were measured using an auto range sound level meter with an omnidirectional microphone which was calibrated using the Kenya Bureau of Standards laboratory procedure MET/15/CP/02: Sound level meter calibration and in accordance with the requirements of IEC60651 and IEC60804. The noise levels were carried out across the five (5) sampling locations as per Table 4.1 and figure 4.1 above on 31st March 2026. The results of the noise level measurements within the site are presented in table 4.3 below:

Table 4. 3 Noise Quality Measurements

Sampling Points	Measured Noise Level Leq dB(A)	TLV dB(A)	Remarks
AQ/N1	45.2	50	**Within limits**

AQ/N2	41.0	50	**Within limits**
AQ/N3	39.7	50	**Within limits**
AQ/N4	42.8	50	**Within limits**
AQ/N5	42.1	50	**Within limits**
AQ/N6	38.3	50	**Within limits**
AQ/N7	43.3	50	**Within limits**
AQ/N8	42.3	50	**Within limits**
AQ/N9	41.8	50	**Within limits**
AQ/N10	42.1	50	**Within limits**
AQ/N11	53.7	50	**Above limits**
AQ/N12	42.9	50	**Within limits**

Source: Noise Quality Measurement Report

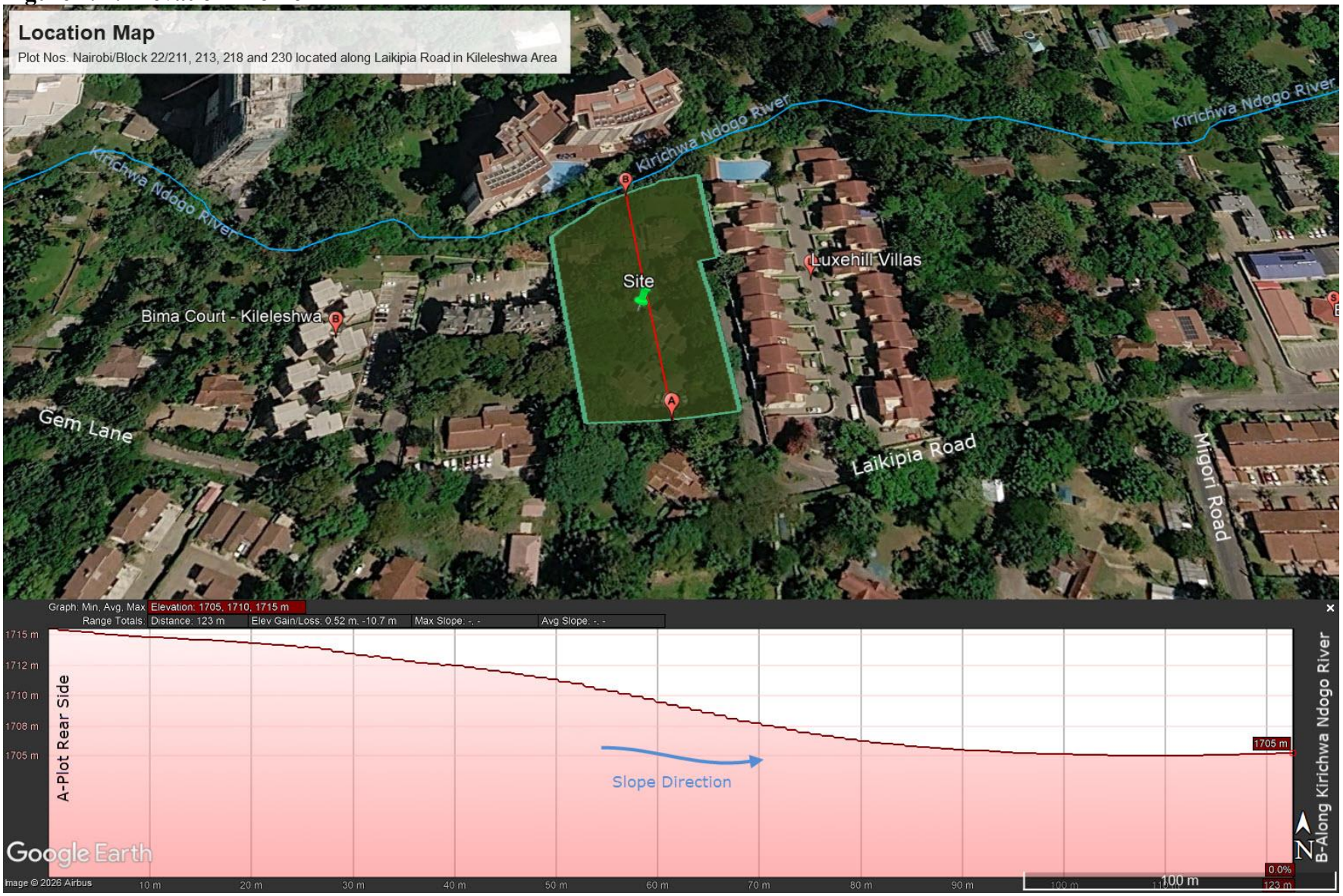
The noise levels obtained were compared with the guidelines provided by the First Schedule of the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations 2009. The measurements taken at the sampled points indicate that the noise levels at all locations were within the recommended threshold limit values (TLV) of 50dBA during the daytime, except for AQ/N11 which recorded a slightly elevated noise level.

The noise levels were found to be within the recommended threshold levels except for one sampling point as provided for under EMCA noise and vibration pollution for mixed-used residential with some commercial and places of entertainment during the daytime.

4.1.4 Topography

The site lies at an altitude of approximately *1712 meters above sea level* and slopes northwards towards the *Kirichwa Ndogo River.* The highest point is at the southern side at *1716 meters above sea level* while the lowest point is situated at the river at *1705meters above sea level* giving a differential height of 11 meters.

Figure 4. 2: Elevation Profile



Source: Google Earth, 2026

4.1.5 Geology and Soils

The subsurface profile of the site is characterized by a top layer of reddish-brown, stiff, moist clay extending to approximately 2.0 meters below the Original Ground Level (OGL). This is underlain by reddish to greyish slightly to moderately weathered material from 2.0 meters depth, transitioning into weak, fractured agglomerate rock down to about 13.0 meters. Beneath this, a light grey to dark grey moderately weathered, weak fractured agglomerate rock stratum occurs between depths of 13.0 and 15.0 meters. The subsurface layer materials will be excavated to pave the way for the construction of the basement and foundation works upon the acquisition of an excavation permit from NCC. The estimated volume of excavation will be approximately *49,500 cubic meters*. The excavated soils and rock debris will be reused for backfilling and landscaping purposes within the site and in other construction sites. The variation in strength and weathering of the underlying tuff has implications for foundation design, drainage, and construction planning, all of which have been considered in the proposed development approach to ensure structural stability and minimal environmental disruption. *(Attached is the Geological Investigation Report).*

4.1.6 Hydrology

The property abuts the **Kirichwa Ndogo River** on its northern side. The proponent proposes to drill a borehole for groundwater abstraction to supplement the county water supply line. A *hydrogeological survey for the proposed borehole* was undertaken in April 2026 and the study concludes that, on the basis of hydrogeological evidence, the investigated site is located in an area with medium to high groundwater potential. The study further states that the main aquifers are expected to be along the Old Land Surfaces (OLS), weathered and fractured volcanic rocks while shallow, medium and deep aquifers are expected in this area. The hydrogeological survey recommends an *8.5-inch diameter borehole to be drilled* at the identified location within the site to a *minimum depth of 350 meters and a maximum depth of 380 meters bgl* with prospects of higher yields of about *6-10m³/hr.* The proponent shall obtain an *authorization permit* from the WRA and a *separate EIA License* from NEMA before drilling works begin. The developer shall also undertake landscaping within the designated open spaces by planting indigenous trees and grass. This intervention will enhance soil infiltration, stabilize the land surface, attenuate surface runoff, and contribute to the protection of downstream watercourses and the overall watershed. *(Attached is the Hydrogeological Survey Report).*

4.2 BIOLOGICAL ENVIRONMENT

4.2.1 Flora

The project site has a moderately diverse vegetation assemblage comprising 157 individual plants across 35 species including 128 trees, 29 shrubs and ornamental species. A site walk-through and visual identification approach was used to catalogue the floral diversity. Plant species were identified using morphological features and matched with scientific data. Their conservation status was retrieved from the International Union for Conservation of Nature (IUCN) Red List of Threatened Species as tabulated below:

Table 4. 4: Tree species within the site

SN	Common Name	Scientific Name	IUCN Status	Quantity
1.	Loquat Tree	*Eriobotrya japonica*	LC	19
2.	Jacaranda Tree	*Jacaranda mimosifolia*	LC	16
3.	Yellowwood Tree	*Afrocarpus falcatus*	LC	9
4.	Avocado Tree	*Persea americana*	LC	8
5.	Orchid Tree	*Bauhinia spp.*	LC	8
6.	Ashoka Tree	*Monoon longifolium*	LC	7
7.	Thika Palm Tree	*Filicium decipiens*	LC	7
8.	Ash Tree	*Fraxinus angustifolia*	LC	7
9.	Neem Tree	*Azadirachta indica*	LC	5
10.	Croton Tree	*Croton megalocarpus*	LC	4
11.	Dragon Tree	*Dracaena spp.*	LC	4
12.	Cypress Tree	*Cupressus lusitanica*	LC	3
13.	Palm Tree	*Arecaceae spp.*	LC	3
14.	Potato Tree	*Solanum erianthum*	LC	3
15.	Mango Tree	*Mangifera indica*	DD	2
16.	Frangipani Tree	*Plumeria rubra*	LC	2
17.	Umbrella Tree	*Heptapleurum actinophyllum*	LC	2
18.	Trumpet Tree	*Tabebuia rosea*	LC	2
19.	Silky Oak Tree	*Grevillea robusta*	LC	2
20.	Guava Tree	*Psidium guajava*	LC	2
21.	Southern Magnolia Tree	*Magnolia grandiflora*	LC	1
22.	Acacia Tree	*Acacia spp.*	LC	1
23.	Camellia Tree	*Camellia japonica*	LC	1
24.	Sapodilla Tree	*Manilkara zapota*	LC	1
25.	Nile Tulip Tree	*Markhamia lutea*	LC	1
			Total	**128**

Table 4. 5: Shrub species within the site

1.	Bougainvillea Shrub	*Bougainvillea spp.*	LC	8
2.	Hibiscus Shrub	*Hibiscus fragilis*	CR	8
3.	Tea Plant Shrub	*Camellia sinensis*	DD	6
4.	Bamboo Shrub	*Bambusa spp.*	LC	4
5.	Golden Dewdrop Shrub	*Duranta erecta*	LC	4
6.	Kei Apple Shrub	*Dovyalis caffra*	LC	2
7.	Lantana Shrub	*Lantana Camara*	Invasive Species	2
8.	Flamingo Flower Shrub	*Anthurium andraeanum*	LC	1
9.	Robusta Coffee Shrub	*Coffea canephora*	LC	1
10.	Bengal Clock Vine Shrub	*Thunbergia grandiflora*	LC	1
			Total	**29**

The site exhibits a moderate level of plant diversity comprising both exotic and indigenous species, with a clear dominance of ornamental and introduced flora. Most of the recorded species fall under the *Least Concern (LC)* and *Data Deficient (DD)* categories of the International Union for Conservation of Nature (IUCN) Red List. However, several individuals of *Hibiscus fragilis* which is classified as *Critically Endangered (CR)*, were recorded on-site.

In addition, the presence of invasive species such as *Lantana camara* poses potential ecological concerns. The vegetation structure is predominantly tree-based, with a smaller proportion of shrubs, reflecting a landscaped environment rather than a natural ecosystem. The indigenous species are present but relatively underrepresented compared to exotic species. However, the developer is committed to environmental sustainability and will implement a comprehensive landscaping plan. This will include conserving the trees and shrubs within the demarcated riparian reserve, transplanting the conservation-sensitive species such as *Hibiscus fragilis,* planting of indigenous trees and grass within the designated open spaces and the riparian reserve. The trees will be cut down to pave the way for the proposed development upon the acquisition of a tree-cutting clearance certificate from the Nairobi County Director of Forestry. (*Attached is the Flora Biodiversity Assessment Report).*

Plate 4. 1: Trees within the Site

Source: Fieldwork, 13/03/2026

4.2.2 Fauna

The project site is characterized by a limited range of fauna, primarily birds, insects, and domestic animals. A comprehensive Fauna Assessment was undertaken to document animal species within the project site and its immediate environs, with particular emphasis on the adjacent riparian ecosystem. The assessment was conducted through direct field observations and systematic site walkthroughs, supplemented by photographic documentation to support species identification and verification. The findings from the assessment indicate that the site does not host any species classified as threatened or of high conservation concern. However, the riparian zone provides localized ecological value as a habitat for common avifauna and insects. The assessment further evaluated potential impacts of the proposed development on fauna, including habitat disturbance, displacement, and increased human activity. Based on these findings, appropriate mitigation measures have been proposed to minimize ecological disruption.

These include landscaping within the riparian reserve, implementation of noise and dust control measures during construction, and sensitization of workers to avoid unnecessary disturbance to fauna. Therefore, the proposed development is not anticipated to result in significant adverse impacts on local faunal species.

4.3 SOCIO-ECONOMIC ENVIRONMENT

4.3.1 Administrative Units

Nairobi County is divided into eleven (11) administrative units comprising 31 divisions, 72 locations, and 136 sub-locations as per the National Government Administration offices (NGAO). The administrative units include Dagoretti, Embakasi, Kamukunji, Kasarani, Kibra, Langat, Makadara, Mathare, Njiru, Starehe, and Westlands.

The proposed project is located in Kileleshwa Sublocation, Kileleshwa Location, Dagoretti North Sub-County of Nairobi City County.

4.3.2 Demographic Patterns

According to the Kenya Population and Housing Census 2019, Kenya had a population of 47,564,296 distributed between 1,506,888 households. Nairobi County's population in 2019 was 4,397,073 distributed within the seventeen sub-counties whereas Dagoretti Area had a population of 434,208. The area's population is projected to rise to 498,655 by 2027 which is a growth rate of over 4.1% per annum and is above the national average growth rate of approximately 2.3% per annum. The population in the area has been tremendously increasing every year this trend underscores the need for expanded infrastructure and improved social amenities, including adequate housing and associated facilities, to accommodate the projected population growth sustainably.

4.3.3 Socio-Economic Activities

The key economic activities undertaken within the county include manufacturing, financial activities, wholesale and retail trade, construction activities, transport and real estate sector. Other economic activities practiced and are not fully utilized with potential for further growth include urban agriculture and ICT. These activities have contributed to the country's Gross Domestic Product (GDP). The social-economic activities in the area within a radius of 1,000 meters from the site include *Kasuku Centre and Olenguruone Place Shopping Mall* which houses supermarkets, bar & restaurant, leisure and recreation areas, merchandise, services, and financial institutions.

Some of the facilities located within the shopping mall include Kileleshwa Green Grocery, *Artcaffé Market Olenguruone Avenue*, *Galittos Kileleshwa, Electra Luxe, Fantasia Grill, Arunas Hair & Beauty Clinic Ltd, Absa Atm Kileleshwa, Sesame Asian Tapas Restaurant & Bar, Chowpaty Kileleshwa*, Cambridge Opticians-Kasuku Center, and *Med Market Pharmacy* among others. Other socioeconomic facilities include Light Industrial such as *Shell Gas Station, Arboretum and TotalEnergies Kileleshwa Service Station*. These activities will support the incoming population in their day-to-day demand for goods and services.

4.3.4 Educational Institutions

The area has seen an increasing number of educational institutions due to the increasing population. The different education facilities found in the area within a radius of 1,000 meters from the project site include; *Erdemann Chinese School, Kileleshwa School & JSS, Kenya High School, St. George's Primary School, Kiota School Kindergarten, Rowdha International Academy, and Kenton College Preparatory School*. The proposed development will be supported by a range of educational institutions that cater to the diverse learning needs of the anticipated population. These institutions are critical for fostering human capital development, supporting social infrastructure, and ensuring the long-term sustainability of the development.

4.3.5 Religious Institutions

The religious institutions found in the neighbourhood at a radius of 1,000 meters from the project site include churches, temples and mosques. Some of the institutions include *Westlands Mosque, Darul Arqam Islamic Centre, Masjid Ibrahim Kilileshwa, Kileleshwa Covenant Community Church, Umala Parish Catholic Church, Holy Trinity Catholic Church Kileleshwa, Parklands Baptist Church, Living Faith International and Shree Hanuman Temple.* These institutions will provide places of worship for the incoming population and play a vital role in community building, cultural continuity, mental wellness, and moral development.

4.3.6 Health Institutions

The major health institutions serving the residents in the area are found at a radius of approximately 1,000 meters from the project site and include; *AIC Kijabe Hospital Westlands, MP Shah Hospital, Kileleshwa Medical Plaza, The Mater Hospital (Westlands) and Westlands Hospital (Level 4).* Access to health facilities will enhance the provision of medical care to the incoming population and is part of the Government Agenda on Universal Health Care.

CHAPTER FIVE: IMPACT ASSESSMENT AND MITIGATION MEASURES

The proposed project will affect the environment both positively and negatively during the construction and operation phases. This chapter will assess the impacts that are likely to occur and how the project will interact with the environment. Adequate, cost-effective and feasible measures have been recommended to avoid, minimize, mitigate, or compensate any potential negative impacts. The potential receptors of the anticipated impacts will include the following:

i. The local community includes the immediate neighbours at a radius of 250 meters from the site such as *St Joseph's Apartment – Kileleshwa, Luxehill Villas, and Samaritan Purse.*
ii. The National Government Administration Officers *(NGAO).*
iii. Government agencies and development institutions *(Water Resources Authority).*
iv. Institutions within the local area at a radius of 250 meters from the site such as *Erdemann Chinese School.*
v. The project personnel including *consultants and construction workers.*

5.1 ANTICIPATED IMPACTS

The anticipated impacts of the proposed project on the environmental elements are categorized into five (5) major parameters: the **type of impact** is described as either direct or indirect; the **nature of the impact** as positive or negative; the **duration** may be short-term, medium-term or long term; the **extent** is evaluated in terms of being local, regional or national and the **magnitude** as being low, medium or high. The following criteria was used to evaluate the significance of the impact of the proposed project on the physical and biological environment:

Table 5. 1: Assessment Criteria for Significant Impacts

S/N	Impact	Classification
1.	Impact Type	**Direct:** The impacts will be generated directly from project activities. **Indirect:** The impacts are generated from secondary sources.
2.	Impact Nature	**Positive:** The impacts will affect the environment positively. **Negative:** The impacts will affect the environment negatively.
3.	Impact Duration	**Short Term:** The potential impacts only last for a short time during the construction period or less. **Medium Term:** The potential impacts last for approximately 10 years

		or half the lifetime of the project. **Long Term:** Impact will remain after operational life of project but appropriate mitigation measures have been used to reduce the impacts.
4.	Impact Extent	**Local:** Impacts extend beyond the project site. **Regional:** Impacts extend beyond the administrative area. **National:** Impacts are considered nationally.
5.	Impact Magnitude	**Low:** The magnitude of the impacts has minimal effect on the environment. **Medium:** The magnitude of impacts is significant and can be reversed with mitigation measures. **High:** The magnitude of impacts is significant and mitigation measures can only reverse a very small portion.

On the basis of information gathered during both the desktop and field study, the potential environmental impacts for the proposed project are as tabulated below:

Table 5. 2: Anticipated Impacts during the Project Cycle

S/N	Impact	Type	Duration	Extent	Magnitude
1.	Soil Erosion and Contamination	Direct	Short term	Local	Medium
2.	Air Pollution	Direct	Short term	Local	Medium
3.	Noise and Excessive Vibrations	Direct	Short term	Local	Medium
4.	Traffic Density	Direct	Long term	Regional	Medium
5.	Solid Waste	Direct	Long term	Local	Medium
6.	Liquid Waste	Direct	Long term	Regional	Medium
7.	Water Demand	Direct	Long term	Regional	Medium
8.	Energy Demand	Direct	Long term	Regional	Medium
9.	Occupational Health and Safety Risks	Direct	Short term	Local	Medium
10.	Fire Risks	Direct	Short term	Local	Medium
11.	Security Risks	Indirect	Long term	Local	Medium
12.	Storm Water Drainage	Direct	Long term	Regional	Medium
13.	Oil Pollution	Direct	Short term	Local	Medium
14.	Loss of Vegetation	Direct	Long term	Local	Medium

5.2 NEGATIVE IMPACTS

5.2.1 Soil Erosion and Contamination

The proposed project will have a negative impact on the geology of the site. This will be as a result of the clearing of the existing vegetation and excavation of the soils to pave way for the construction of the substructure. The property abuts Kirichwa Ndogo River and is subject to heightened risk of soil erosion, riverbank destabilization, and sediment discharge into the watercourse. The excavation process will involve using standard equipment with no blasting of rocks. The soils will be exposed to weather elements including wind and surface runoff causing soil erosion. The traversing of heavy machinery during the construction will lead to compaction, soil erosion and contamination of the soil by oil & fuel leaks and hydraulic fluids. Uncontrolled soil erosion can have adverse effects on the local water bodies and lead to air pollution (dust).

Potential Mitigation Measures

i. Obtain an excavation permit from NCC before the excavation works begins.
ii. Control excavation works especially during rainy/wet conditions.
iii. Stabilize exposed surfaces promptly through compaction, grading, and levelling to reduce susceptibility to erosion by wind and surface runoff.
iv. Install adequate sediment and erosion control measures such as silt traps and sediment fencing to prevent sediment discharge into the watercourse.
v. Use standard equipment for the excavation works to minimize excessive ground disturbance, soil loosening, and vibration.
vi. Manage the stockpiles of excavated soils within the site before final disposal.
vii. Avoid unnecessary movement of soil materials from the site.
viii. Maintenance of equipment and vehicles away from the site to avoid soil contamination.
ix. Provide adequate sanitary conveniences connected to the existing conventional sewer line to prevent soil contamination by untreated effluent.
x. Landscaping within the open spaces by planting indigenous trees and grass within the riparian reserve and designated open spaces.

5.2.2 Air Pollution

The proposed project is located in a *Residential Zone* where the major air pollutants are fugitive dust and exhaust emissions/fumes from vehicular traffic along the access road. The baseline air quality assessment findings confirmed that all measured pollutant concentrations are within recognized safe exposure limits, indicating that the ambient air within the project area currently

poses minimal health risks. During the construction phase, air quality may decline as a result of an increase in levels of fugitive dust from the excavation works, construction activities, stockpiled earth materials, and concrete mixing. Tiny particulates are a public health hazard and may otherwise create considerable nuisances to the immediate neighbors and the public. There may be air pollution due to the combustion of fossil fuels expected from construction machinery and emissions from the kitchen and vehicles. This is expected to be a short-term, reversible impact lasting only for the duration of the construction activity.

Potential Mitigation Measures

i. Screen the entire site to control and arrest construction-related dust.
ii. Sprinkle water in the work areas twice every day to prevent fugitive dust violations, especially during the dry season.
iii. Provide adequate and appropriate PPE such as masks to the workers in dusty areas within the site.
iv. Utilize automated misting and dust suppression systems, particularly during excavation and material handling.
v. Deploy wheel-washing systems at site exits to prevent tracking of dust and soil onto public roads.
vi. Use low-emission or hybrid construction machinery, where feasible, to reduce exhaust emissions and improve overall air quality.
vii. Regular maintenance of the machinery to minimize the generation of hazardous gases.
viii. Use environmentally friendly fuels and minimize the machinery idling time.
ix. Ensure no burning of waste within the site.
x. Restrict heights from which materials are to be dropped as far as practicable to minimize the fugitive dust arising from unloading/loading.
xi. Cover the stockpiles within the site and install windbreaks, water and/or soil stabilizers to reduce wind-blown dust emissions
xii. Cover the loaded vehicles with clean impervious sheeting to prevent the dispersion of particulate matter.
xiii. Train all personnel working on the project on air quality management.
xiv. Sensitize the drivers on how to minimize unnecessary trips and idling of engines.
xv. Regular cleaning of dust-prone areas such as driveways and corridors, WCC and sanitary facilities to arrest fugitive dust and avoid foul smell.

xvi. Undertake ambient air quality monitoring within the site during and after project implementation.

xvii. Undertake indoor and outdoor landscaping to stabilise dust, sustain air quality and improve local microclimate conditions.

5.2.3 Noise and Excessive Vibrations

The study on ambient noise level within the property was undertaken and revealed that most of the levels were within the permissible limits for a mixed residential area. During the construction phase, the sources of noise pollution and excessive vibrations may include site preparation through the cutting of trees and excavation works; operation of earthmoving and excavation equipment; transportation of materials and machinery to the site and operation of the generator and other machinery. The noise and excessive vibrations will be short-term and limited to the construction phase. During the operational phase, noise is expected to emanate from activities within the residential apartments and associated recreational amenities.

Potential Mitigation Measures

i. Construction activities will be carried out on weekdays between 0800hrs and 1800hrs and on Saturdays only between 0800hrs and 1300hrs, and no construction work will be undertaken on Sundays.

ii. No blasting of rocks will be undertaken during the excavation works to prevent excessive vibrations.

iii. Provide adequate and appropriate PPE such as earmuffs to the workers in noisy environments within the site.

iv. Sensitize workers and drivers on minimal permissible noise levels every month.

v. Schedule noisy activities concurrently to reduce the exposure period.

vi. Install noise barriers and shields such as corrugated iron sheet structures before the construction begins.

vii. Install sound-absorbing materials such as acoustic enclosures within the generator room to reduce noise pollution.

viii. Reduce idling time on trucks and other noisy equipment by switching them off when not in use.

ix. Adopt low-noise and electric-powered construction equipment where feasible to significantly reduce both noise and vibration levels.

x. Undertake regular maintenance and servicing of machinery to reduce noise generated by mechanical friction and wear.
xi. Re-route trucks used at the site away from noise-sensitive areas where feasible.
xii. Undertake ambient noise level monitoring within the site.

5.2.4 Traffic Density

The project site is located in an area that is largely occupied by residential developments. The majority of vehicles using the access roads are light vehicles from the different residences; school vans picking up and dropping off children in the area; and a few heavy commercial vehicles such as trucks that deliver goods to different commercial premises and construction sites in the area. The roads tend to be congested during the peak hours (early morning and late in the evening) when the residents leave and come back from work respectively. During the operation phase, the traffic volume will increase as a result of an increase in the number of cars and people accessing the property. Therefore, the proposed development will increase the traffic volume that will have some localized impact on the overall network performance.

Potential Mitigation Measures

i. Engage traffic marshals to control traffic in and out of the site during the project cycle.
ii. Provide and ensure routine maintenance of the parking bays and related infrastructure.
iii. Stagger the deliveries of construction waste and building materials to minimize queuing of vehicles on and off the site especially during the off-peak hours.
iv. Provide a loading area for construction materials within the site.
v. Install traffic control/warning signs to inform the motorists and public about the potential hazards.
vi. Liaise with the neighboring developments to ensure they are aware of the construction programme.
vii. Provide a designated pick-up and drop-off zone within the proposed development to prevent vehicle queuing along the access road.
viii. Install automated double-lane vehicle screening with appropriate security controls to minimise delays and improve throughput at the entry.
ix. Provide separate entry and exit points to ensure smooth traffic flow with the development.
x. Train the drivers on traffic management practices such as adhering to the speed limit.

xi. Ensure all construction vehicles comply with axle load limits and vehicle roadworthiness requirements to prevent damage to public infrastructure and reduce accident risks.

xii. Provide billboards at the entrance to notify motorists and the public about the proposed project.

xiii. Implement the TMP to ensure that site vehicles do not interfere with the regular traffic or pose safety hazards to the workers and the public.

5.2.5 Solid Waste

Solid waste generation during the demolition, construction, and operational phases of the project is anticipated to have a negative impact. The waste streams, including demolition debris, construction materials, and municipal solid waste, may lead to blockage of drainage systems, resulting in localized flooding and potential contamination of nearby water bodies. Additionally, improper handling and disposal of waste may cause soil degradation through leachate infiltration, air quality deterioration due to decomposition and potential emissions, and disturbance to fauna through habitat disruption and ingestion risks. Accumulated waste may also pose public health risks by attracting disease vectors and occupational health and safety risks to workers due to exposure to hazardous and sharp materials. Overall, without proper management, solid waste has the potential to adversely affect environmental quality and human well-being within and around the project area.

Potential Mitigation Measures

i. Design and implement a three-year Waste Management Plan indicating the actual quantities, types of waste and waste management methods.

ii. Provide properly labelled and colour-coded biodegradable garbage bags/ bin liners for segregation of waste at source.

iii. Segregate non-hazardous waste into organic and non-organic fractions before final disposal.

iv. Provide a centralized WCC for waste management with appropriate waste receptacles for waste collection before final disposal.

v. Engage the services of NEMA-registered waste service providers to collect, handle, and transport the segregated and hazardous waste to designated disposal sites.

vi. Provide adequate and appropriate PPE such as gloves and masks to all the workers handling the solid waste within the site.

vii. Train workers on solid waste management such as reuse of materials where feasible during the toolbox meetings.
viii. Efficient use of building materials to reduce waste and recycle/reuse where feasible.
ix. Install warning signage within the riparian reserve such as *"No Dumping"*.
x. Use of an integrated solid waste management system through a waste hierarchy of options: avoidance, source reduction, reuse, repair, refurbishment, recycling, recovery and finally treatment for safe disposal during the project cycle.
xi. Keep records of waste tracking documents for the solid waste generated within the development.

5.2.6 Liquid Waste

Liquid waste generation is expected to increase during both the construction and operational phases, driven by rising numbers of workers and future occupants. Inadequate provision or poor management of sanitary facilities may lead to unsanitary conditions, including open or indiscriminate defecation in secluded areas, which can create breeding grounds for flies and other disease vectors. This poses risks to public and occupational health, potentially leading to the spread of communicable diseases among workers and surrounding communities. Improper handling and disposal of liquid waste may result in groundwater contamination through seepage, especially where sanitation systems are poorly designed or maintained. The decomposition of waste may also produce offensive odours, thereby compromising air quality within and around the project site. Overall, without proper management, liquid waste has the potential to adversely affect groundwater resources, air quality, and the health and safety of workers and nearby receptors.

Potential Mitigation Measures

i. Construct a mini–Sewer Treatment Plant (STP) for pre-treatment of liquid waste before final discharge into the existing conventional sewer system.
ii. Extend the connection of the proposed development to the existing conventional sewer system upon the acquisition of a connection permit from NCWSC.
iii. Construct an internal reticulation system which can consistently handle the loads during peak volumes.
iv. Obtain a site toilet permit from NCC before the construction begins and adhere to the conditions thereof.
v. Provide sufficient and suitable sanitary conveniences for the workers within the site.

vi. Ensure that the sanitary conveniences are maintained and kept clean at all times.
vii. Ensure proper decommissioning of the sanitary conveniences after the construction phase.
viii. Install hygiene awareness signs at strategic points and hold regular toolbox talks on hygiene.
ix. Engage licensed waste transporters to remove and dispose of the sludge from the STP periodically.
x. Install double-sealed heavy-duty covers for all the manholes on the driveways and the parking area as approved by the specialists.
xi. Regular maintenance of foul water and the STP at the premises to prevent clogging & forestall breakdowns and ensure continued efficiency.

5.2.7 Water Demand

The proposed development will require a considerable amount of water during both the construction and operational phases. During construction, water will be needed for construction activities, while during operation, water demand will increase for domestic and general usage by occupants. This increased demand may place strain on the existing water supply systems in the area, potentially affecting availability and reliability for both the project and surrounding users. Inadequate water supply may disrupt construction activities and compromise operational efficiency, while over-reliance on existing sources may contribute to resource depletion. Therefore, the increased water demand has the potential to impact the sustainability of local water resources.

Potential Mitigation Measures

i. Extend the connection of the main water supply to the proposed development upon acquisition of a connection permit from NCWSC.
ii. Drill a borehole to supplement the existing NCWSC water supply subject to the acquisition of an authorization permit from WRA and a separate EIA license from NEMA.
iii. Harvest rainwater within the site for reuse in non-potable applications to supplement the surface and subsurface water sources.
iv. Provide tanks for water storage purposes within the development.
v. Install water-efficient fixtures and fittings that turn off automatically such as 5 litres dual flush cisterns, low flow rate taps, water saving micro sprinklers and showerheads.

vi. Provide water conservation notices and information signs at strategic points within the site and hold regular toolbox talks on water reuse with the personnel.
vii. Regular maintenance of all the water components by licensed personnel.
viii. Install smart water management systems (IoT-based sensors) to monitor real-time consumption, detect leaks, and optimize usage.
ix. Use automated irrigation systems with soil moisture sensors to prevent overwatering of landscaped areas.
x. Incorporation of a greywater reuse system for toilet flushing.
xi. Monitor the water consumption within the site every month.

5.2.8 Energy Demand

The proposed development is expected to result in increased energy consumption during both the construction and operational phases. During construction, energy will be required primarily in the form of fuel (diesel and gasoline) for running machinery, equipment, and transport vehicles, while electricity may also be used for site operations. In the operational phase, energy demand will rise due to the use of household appliances, lighting systems, and other electrical equipment by occupants. This increased demand may place a strain on the existing energy supply infrastructure in the area, potentially affecting the reliability and adequacy of power supply to both the project and surrounding users.

Potential Mitigation Measures

i. Install an on-site transformer to supply energy to the proposed development subject to the acquisition of a connection permit from KPLC.
ii. Install solar panels as an alternative renewable source of energy for the proposed development.
iii. Install a standby generator as a backup source of energy for the development.
iv. Install energy-efficient fixtures and fittings within the development such as energy-saving LED fittings.
v. Ensure all machinery, equipment, and lights are switched off when not in use.
vi. Display notices and information signs on energy conservation measures.
vii. Install smart energy management systems (EMS) with real-time monitoring to optimize energy use, detect inefficiencies, and automate controls.
viii. Utilize motion sensors and daylight sensors for automated lighting control in corridors, parking areas, and common spaces.

ix. Install sub-metering systems for different functional areas to improve energy accountability and management.
x. Conduct routine inspection and maintenance of electrical components by registered personnel.
xi. Monitor the energy consumption within the site every month.

5.2.9 Occupational Health and Safety Risks

The sources of occupational risks within the project site will include the handling of heavy machinery, construction noise, and electromechanical works among others. Fugitive dust from construction activities may affect the respiratory system of the workers and the immediate neighbors. The generation of the waste may pose health and safety risks to the workers. Food for the construction workforce is usually provided by mobile individuals most of which operate without licenses. This can compromise the health of the workers especially if such foodstuffs are prepared in unhygienic conditions.

Potential Mitigation Measures

i. Register the construction site as a workplace with the DOSHS before commencement of construction activities and comply with all statutory requirements.
ii. Obtain an Occupation Certificate NCC before commissioning of the development.
iii. Ensure all workers are covered under statutory insurance schemes (SHIF/NSSF) and provided with adequate Work Injury Benefits Act (WIBA) insurance cover.
iv. Provide adequate and appropriate Personal Protective Equipment (PPE) (safety boots, helmets, gloves, goggles, earmuffs, masks, reflective jackets) and enforce mandatory use.
v. Maintain fully equipped first aid kits on-site and ensure availability of trained first aiders at all times.
vi. Install clear health and safety signage (warning, mandatory, and emergency signs) at strategic locations across the site.
vii. Conduct annual health and safety audits by a registered safety advisor and implement corrective actions.
viii. Adopt a suitable Emergency Response Plan (ERP) to manage the occurrence of anticipated hazards during the project cycle.
ix. Engage a qualified full-time Health and Safety Officer (HSO) throughout the construction phase.

x. Establish and operationalize a Health and Safety Committee in accordance with OSHA requirements.
xi. Conduct site induction training for all workers before engagement and refresher trainings periodically.
xii. Ensure safe excavation practices, including shoring, benching, and slope stabilization to prevent collapse.
xiii. Hold daily toolbox talks to address task-specific risks and reinforce safe work practices.
xiv. Provide adequate sanitation facilities, clean and potable drinking water, and maintain high standards of hygiene for all workers.
xv. Ensure any food vendors on-site comply with public health and hygiene standards.
xvi. Undertake weekly safety inspections and monitoring by the HSO, with documented reports and follow-up actions.
xvii. Sensitize workers on occupational health and social issues including HIV/AIDS, communicable diseases, and substance abuse.
xviii. Display and maintain updated emergency contact information (police, fire, ambulance) at accessible locations.
xix. Ensure compliance with the Occupational Safety and Health Act (OSHA), 2007 and all relevant subsidiary legislation.
xx. Install physical barriers and controlled access systems around the swimming pool to prevent unauthorized access, especially by children.
xxi. Develop and display a Swimming Pool Safety Plan at the pool entrance, including rules, emergency procedures, and supervision requirements.
xxii. Maintain pool water quality through regular disinfection, filtration, and pH control, in line with public health standards to prevent waterborne diseases

5.2.10 Fire Risks

Fire outbreaks may pose a significant risk during both the construction and operational phases of the proposed residential development. During construction, potential fire hazards include faulty or overloaded electrical systems, welding and cutting works (hot works), improper storage and handling of flammable materials, fuel or gas leaks, and poor housekeeping practices such as accumulation of combustible waste. During the operational phase, fire risks may arise from sources such as defective electrical wiring, overloaded sockets, gas leaks, use of highly combustible materials, unattended cooking appliances, and human negligence. Inadequate fire

preparedness and response capacity may increase the likelihood of fire incidents, potentially resulting in injury or loss of life, damage to property, and disruption of residential activities.

Potential Mitigation Measures

i. Engage a licensed and competent electrical contractor to undertake all electrical installations.
ii. Install adequate and appropriate firefighting equipment at strategic locations within the development and ensure inspection and maintenance at least every six (6) months.
iii. Provide and maintain automatic fire detection and alarm systems and automatic fire suppression systems.
iv. Establish a trained fire response team on-site and ensure members undergo certified fire safety training within three (3) months of appointment.
v. Train all workers and occupants on the safe use of firefighting equipment and basic fire response procedures.
vi. Conduct annual fire drills within the site and ensure records of such drills are kept available for inspection.
vii. Undertake annual fire safety audits by a licensed fire safety auditor and implement all recommended corrective actions.
viii. Clearly mark and illuminate fire escape routes, exits, and assembly points, ensuring they remain unobstructed at all times.
ix. Install and enforce "No Smoking" signage in designated high-risk areas, particularly where flammable materials are stored or handled.
x. Develop, display, and regularly update fire emergency and evacuation procedures, including roles, responsibilities, and muster points.
xi. Maintain updated emergency contact information (fire brigade, ambulance services, security response teams) at strategic and accessible locations within the site
xii. Provide adequate fire water storage tanks and booster pumps to ensure sufficient water pressure for firefighting.
xiii. Maintain on-site telephone contacts for the fire brigade, G4S fire brigade, and St. Johns ambulance service provider etc.

5.2.11 Security Risks

The plot under consideration is fenced with a masonry wall and a live fence with a gate. There is a potential risk of insecurity during both the construction and operational phases primarily

associated with unauthorized access to the project site. During construction, the absence of adequate security measures may expose the site to intruders, increasing the risk of theft of materials and equipment, vandalism, and pilferage. This may also compromise the safety of construction workers, including loss of personal belongings and exposure to possible violent incidents. During the operational phase, inadequate security provisions such as lack of perimeter fencing, controlled access, and surveillance systems may expose tenants to security threats including burglary, theft, break-ins, and vehicle-related crimes, thereby compromising the safety and security of residents and their property.

Potential Mitigation Measures

i. Engage licensed security personnel to safeguard the property and monitor the movement of people in and out of the site.
ii. Keep records of the movement of people and vehicles in and out of the site.
iii. Install security lights around the property and ensure they are switched on only during the night hours.
iv. Routine inspection and maintenance of the security lights within the site.
v. Construct boundary wall and gatehouse to enhance the site security.
vi. Install CCTV at strategic points within the site to monitor and enhance the security of the property.
vii. Install motion sensors and intrusion detection systems along the perimeter and critical zones.
viii. Provide access control measures within the development to keep out unauthorized people such as swipe cards, vehicle screening, biometric scans, security tokens, or presenting identification documents.

5.2.12 Storm Water Management

The proposed development is likely to affect stormwater drainage due to vegetation clearance, excavation works, and subsequent surface sealing through building and pavement construction. During the construction phase, disturbed soils may increase erosion and sediment transport, leading to siltation of drainage channels. The reduced ground cover may also exacerbate runoff generation during rainfall events. During the operational phase, the increase in impervious surfaces will reduce natural infiltration and increase the volume and velocity of surface runoff, potentially overloading existing drainage infrastructure and leading to localized flooding or drainage system failure. Furthermore, given that the property abuts the Kirichwa Ndogo River,

there is an elevated risk of sediment-laden runoff and pollutants being discharged into the river system, which may contribute to riverbank erosion, water quality degradation, and disturbance of the downstream aquatic environment.

Potential Mitigation Measures

i. Design and construct gently sloping drainage channels to convey runoff at non-erosive velocities and prevent scouring.
ii. Install erosion and sediment control measures including silt traps, sediment fences, and temporary bunds.
iii. Install appropriate stormwater management measures to regulate surface runoff and prevent uncontrolled discharge into adjacent drainage networks and water bodies.
iv. Install covered drainage systems within the site to prevent debris entry and ensure efficient flow of stormwater.
v. Utilize semi-permeable and permeable paving materials in the common areas to enhance infiltration and reduce surface runoff.
vi. Incorporate rainwater harvesting systems within building structures to reduce peak stormwater discharge.
vii. Undertake comprehensive landscaping and rehabilitation post-construction to enhance infiltration and stabilize soils.

5.2.13 Oil Pollution

The potential sources of oil and hydrocarbon pollution at the project site include leaks and spills of fuel, lubricants, and oils from construction machinery and vehicles, as well as improper handling or disposal of used oil, oily rags, and contaminated containers. During the operational phase, additional risks may arise from vehicle leaks within parking areas. If not properly managed, these pollutants may infiltrate the soil, leading to soil contamination and reduced soil quality, while also posing a risk of surface water pollution, particularly to the nearby Kirichwa Ndogo River through runoff and stormwater drainage. Volatile components may also contribute to localized air quality deterioration, and exposure to contaminated materials may pose health and safety risks to workers and maintenance personnel.

Potential Mitigation Measures

i. Install and maintain functional oil–water separators and silt traps within drainage systems to prevent discharge of hydrocarbons into the nearby water bodies.

ii. Designate a secure, bunded, and impermeable on-site fuel and oil storage area located away from drainage lines, excavations, and the riparian zone.
iii. Carry out all refuelling, lubrication, and maintenance activities in a designated area fitted with an impermeable surface and spill containment measures to prevent oil spillage.
iv. Ensure proper collection, storage, and disposal of used oil, oil filters, grease, and contaminated materials.
v. Develop and implement an Oil Spill Prevention and Emergency Response Plan (ERP) detailing containment procedures, reporting mechanisms, and cleanup actions.

5.2.14 Loss of Vegetation

The project site has a moderately diverse vegetation assemblage comprising 157 individual plants across 35 species including 128 trees and 29 shrubs & ornamental species. The vegetation is predominantly mature trees that provide important ecological functions, such as regulating microclimates, sequestering carbon, and supporting habitats. The trees will be cleared to pave the way for the proposed development, leading to the loss of a substantial number of trees and shrubs and a consequent reduction in vegetation cover and ecological value of the site. The site hosts *one critically endangered species (Hibiscus fragilis)* which may be adversely affected.

Potential Mitigation Measures

i. Develop and implement a Flora Management Plan (FMP) before site clearance to guide vegetation protection and management.
ii. Transplant the conservation-sensitive species such as *Hibiscus fragilis* to the riparian reserve and designated open spaces.
iii. Demarcate the riparian reserve by placing visible and permanent beacons.
iv. Retain all existing trees and shrubs within the demarcated riparian reserve.
v. Monitor construction activities to prevent encroachment into the riparian reserve.
vi. Apply for a tree-cutting clearance certificate from the Nairobi County Director of Forestry before cutting down the trees and adhere to the conditions.
vii. Undertake a comprehensive landscaping exercise after the construction phase by planting indigenous trees and grass within the open spaces.
viii. Sensitize the residents to practice apartment gardening within their residential units during the operation phase.
ix. Restrict vegetation clearing strictly to the project footprint to minimize ecological disturbance.

CHAPTER SIX: CLIMATE CHANGE RISK AND VULNERABILITY ASSESSMENT

6.1 Greenhouse Gas Assessment

A Greenhouse Gas (GHG) assessment was undertaken for the proposed development and applied GHG protocol Scope 1 (direct fuel combustion), Scope 2 (purchased grid electricity), and Scope 3 (embodied carbon/supply chain). The assessment was conducted in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Volumes 1–5) using the Tier 1 approach for construction activities and a Tier 1-2 approach for operational emissions. The Kenya national grid emission factor of 0.50 tCO_2/MWh was applied as reported in the Energy and Petroleum Regulatory Authority (EPRA) Bi-Annual Energy and Petroleum Statistics Report for the Financial Year 2023/24. Global Warming Potential (GWP100) values are sourced from the IPCC Sixth Assessment Report (AR6).

During the construction phase, emissions are expected from diesel-powered machinery, construction vehicles, material transport, and embodied carbon in construction materials. The estimated construction emissions are approximately **73,794 tCO_2eq** per year as detailed in table 6.1 below;

Table 6. 1: Construction Phase GHG Emissions Summary

Category	**Scope**	**Sub-total (tCO_2e)**	**% of Total**
Fossil Fuel Combustion (plant + generators + transport)	Scope 1	7,920	10.7%
Grid Electricity -Site Facilities	Scope 2	1,100	1.5%
Water Supply	Scope 3	41	0.1%
Embodied Carbon - Materials	Scope 3	63,431	86%
Upstream Transport	Scope 3	1,054	1.4%
Construction Waste to Landfill	Scope 3	248	0.3%
Total Construction Phase Emissions	**-**	**73,794 tCO_2eq**	**100%**

During the operational phase, emissions will arise mainly from electricity consumption, domestic energy use, cooking, water heating, facility operations *(convenience store, swimming pool, running & fitness area, kids play area, padel, study area, and coffee area),* and vehicle-related emissions from residents and visitors. The estimated operational emissions are approximately **4,715 tCO_2eq/year** as detailed in table 6.2 below;

Table 6. 2: Operational Phase GHG Emissions Summary (Annual)

Category	Scope	tCO_2e/yr	% of Annual Total
LPG Combustion	Scope 1	335	7%
Direct fuel combustion	Scope 1	35	0.7%
Refrigerant Leak	Scope 1	358	7.5%
Grid electricity	Scope 2	1,447	18.1%
Water Consumption	Scope 3	22.6	0.5%
Wastewater treatment	Scope 3	29	0.6%
Solid waste to landfill	Scope 3	193	4.1%
Resident transport	Scope 3	2,295	48.3%
Total Operational Emissions		**4,715**	**100%**

The proposed development will contribute to cumulative greenhouse gas emissions across its lifecycle, and although they are consistent with large-scale urban residential developments, the project represents a moderate to high contributor to local and indirect global GHG emissions, particularly during the operational phase due to sustained energy demand from high-density occupancy and associated amenities.

6.2 Climate Change Vulnerability Assessment

Climate Change Vulnerability Assessment evaluates the climate change threats of projects and explores potential interventions that can help to strengthen climate resilience. The assessment was carried out to determine how the design of the project is vulnerable to climate change and recommends some of the appropriate adaptation and mitigation measures to climate-proof the project in line with the provisions of the Climate Change Act 2016. Some of the anticipated risks and applicable adaptation and mitigation measures/methods that will be applied by the proponent to climate-proof the project in line with provisions of the Climate Change Act, 2016 are as tabulated below;

Table 6. 3: Anticipated Risks and Applicable Adaptation and Mitigation Measures

SN	Anticipated Risks	Applicable Adaptation and Mitigation Measures	Relevance
1.	**Increased Greenhouse Gas**	Use of Green Energy Technologies	▪ The incorporation of technologies such as energy-efficient lighting, solar power, and improved insulation will help reduce the

	Emissions		carbon footprint of the project thus promoting climate-smart development to lower emissions.
		a) Waste Management	▪ Proper solid waste management strategies such as recycling and reduction will minimize the generation of greenhouse gas emissions.
		b) Green infrastructure	▪ Comprehensive outdoor and indoor landscaping will help offset carbon emissions by acting as carbon sinks thus reducing greenhouse gas emissions and improving air quality.
2.	**Water Scarcity**	a) Rainwater Harvesting	▪ Harvesting rainwater for reuse will reduce dependence on the existing county supply, thus mitigating the risks associated with water scarcity thus limiting the over-extraction of groundwater sources.
		b) Alternative Sources of Water	▪ The proponent will drill a borehole subject to the acquisition of an authorization permit from WRA. This will reduce the overdependence on the existing county water.
		c) Efficient Water Use Technologies	▪ The installation of water-efficient fixtures and fittings within the project such as low-flow fixtures will help conserve water and thus reducing the overall water demand.
3.	**Flooding**	a) Rainwater Harvesting	▪ Installation of rainwater-harvesting facilities will reduce the amount of stormwater reaching the surface thus mitigating flood risks.
		b) Landscaping	▪ Planting indigenous trees within the open spaces will increase soil absorption and stability thus mitigating flood risks.
		c) Stormwater Management Systems	▪ The integration of effective stormwater management systems, including permeable paving, landscaping, and rainwater harvesting, will help alleviate flooding risks. This will enhance the capacity to absorb excess rainwater and diminish runoff within the proposed development.

4.	**Rising Temperatures**	a) Design Strategies and Technologies for Cooling	▪ Some of the passive cooling designs such as natural ventilation, indoor and outdoor landscaping, and energy-efficient cooling systems will be incorporated to help combat rising temperatures in line with the low-carbon development strategies. ▪ Implementation of energy-efficient building systems, such as LED lighting, high-efficiency HVAC systems, and energy-efficient appliances, will help minimize energy consumption and reduce greenhouse gas emissions
		b) Landscaping	▪ Planting trees within the riparian reserve, open spaces and incorporating green roofs will help reduce the urban heat island effect.
		c) Use of Renewable Energy	▪ The use of renewable sources of energy such as solar panels for lighting and heating water will reduce dependence on the main grid power supply thus reducing emissions.

The proposed development will integrate these adaptation and mitigation measures to address climate change risks and vulnerabilities in compliance with the Climate Change Act of 2016. *(Attached is the Greenhouse Gas (GHG) Emissions and Climate Change Vulnerability Assessment).*

CHAPTER SEVEN: OCCUPATIONAL HEALTH AND SAFETY

Worldwide, construction workers are three times more likely to be killed and twice as likely to be injured as workers in other occupations. In Kenya, though undocumented, it is reported on our dailies that workers are injured or die on construction sites. It is therefore essential that the proponent and contractor ensure the safety and well-being of the workers, the passersby and any other person who may be directly or indirectly associated with the project.

The main hazards and risks of accidents in the construction site can be categorized and described in the following ways:

i. **Physical Risks** such as falls from heights, slips, trips, and contact with moving machinery or equipment.
ii. **Chemical Risks** such as exposure to harmful substances such as asbestos, lead, solvents, or other hazardous chemicals used in construction materials and processes.
iii. **Electrical Risks** involves the danger of electrocution from exposed wiring, faulty equipment, or working near overhead or underground power lines.
iv. **Ergonomic Risks** such as strains from lifting heavy materials or repetitive motion injuries.
v. **Environmental and Health Risks** such as stress, fatigue, or heatstroke from prolonged physical work in harsh weather conditions.
vi. **Fire and Explosion Risks** The presence of flammable materials and faulty equipment can lead to fires or explosions.
vii. **Noise and Vibration Risks** Prolonged exposure to high noise levels and intense vibrations from tools and machinery can lead to hearing loss or Hand-Arm Vibration Syndrome (HAVS).

After the identification of these major risks and the stages when they are likely to occur, efforts should then be focused on how to alleviate these dangers before they happen.

7.1 Principles of Occupational Health and Safety

The principles of environmental health and safety involve three main actions:

i. **Risk Identification and Assessment**: This shall involve identifying the various hazards and risk at the site that have the potential to occur, all the people who may be at risk such as employees, cleaners, visitors, contractors, and the public, etc. as well as determine whether a control program is required for a particular hazard.

ii. **Risk Communication**: Risk communication refers to the exchange of real-time information, advice and opinions between workers and people facing threats to their health, economic or social well-being. The ultimate purpose of risk communication is to enable people at risk to take informed decisions to protect themselves and their loved ones. Risk communication uses many communications techniques ranging from media and social media communications, mass communications and community engagement.

iii. **Risk Management**: This involves actions undertaken for the implementation of risk evaluation decisions, monitoring, re-evaluation and prioritizing, and compliance with legal requirements that safeguard health and safety at construction sites The OHS personnel shall be required to determine if existing control measures are adequate or if more should be done.

7.2 Construction Safety, Emergency Procedures and Action Plan

The site will involve construction activities that are dynamic to the workers engaged in the activities resulting in their exposure to a variety of safety hazards such as falling objects, working from rooftops or scaffolding, exposure to heavy construction machinery, and electrocution while operating electrical equipment in moist areas. It is, therefore, a necessity to develop an Environmental Health and Safety Management Plan to regulate environmentally instigated diseases and occupational safety measures during the construction and operation phases of the proposed project. It is the obligation of the proponent and the contractor to ensure a safe and healthy environment at the workplace and within the neighborhood to prevent occupational diseases, avoid injuries, and property damage, control damage to equipment, and enhance environmental sustainability through the development of sound conservation measures.

The following recommendations to ensure the health and safety of the workers and the general public shall be taken into consideration:

i. Develop and Adapt an Emergency Response Plan (ERP) for the proposed project.

ii. Create a culture of safety within construction by planning, creating and supporting ongoing OHS awareness campaigns that promote the importance of workplace occupational health and safety with industry stakeholders as well as consumers.

iii. Increase safety knowledge in the construction site by promoting awareness of the top construction sector hazards (trips and falls from heights, motor vehicle incidents, being struck by objects, machinery) and how to control these hazards through new and improved information channels.

iv. Support the role of the supervisor in creating and maintaining a culture that fosters worker participation in identifying and mitigating workplace hazards.
v. Create a strategy for continuous health and safety learning for the construction workers e.g. conducting regular training sessions and drills on how to handle emergencies and accidents at the site.
vi. Identify, review and enhance the health and safety content of apprenticeship training standards to keep abreast with any new methods that are effective in promoting site safety.
vii. Provide suitable and well-maintained PPE to all the workers and visitors and ensure they are utilized at all times and in the right manner. These include safety boots, helmets, gas masks, gloves and goggles.
viii. Place visible and readable signs to control the movement of vehicles and notify motorists, pedestrians and workers within and around the site.
ix. Do not walk, stand, or work under suspended loads. If you raise a load, be sure to crib, block, or otherwise secure the load as soon as possible.
x. Enclose or isolate hazardous parts of machines or sites within the construction site to minimize exposure.
xi. Be prepared for unexpected hazards. BE ALERT ALWAYS.
xii. Prepare and maintain emergency response equipment such as fire extinguishers and first aid kits in readiness for use when needed.
xiii. Avoid placing unusual strain on equipment or materials.
xiv. Encourage reporting of safety incidents as soon as they occur at the site, to enable a quick action to alleviate the extent of the damage.
xv. The contractor and his agents shall use barriers and guards as necessary to protect employees from physical hazards.
xvi. A well-stocked First Aid kit shall be provided to take care of accidents that may arise during job executions. This shall be placed under the charge of a responsible person who shall readily be available during working hours.
xvii. Employees will be expected to take personal responsibility for their safety, the safety of their colleagues, and the general public's safety.
xviii. Comply with the provisions of the Occupational Safety and Health Act, 2007.

CHAPTER EIGHT: CONSULTATION AND PUBLIC PARTICIPATION

This chapter describes the process of the public consultation conducted to identify the key issues and impacts of the proposed project. The CPP process is a policy requirement by the Government of Kenya and a mandatory procedure as stipulated by Section 58 of EMCA 1999 on EIA for the purpose of achieving the fundamental principles of sustainable development. Regulation 17 of the Environmental (Impact Assessment and Audit) Regulations 2003 states that during the process of conducting an Environmental Impact Assessment Study, *the proponent shall seek the views of persons who may be affected by the project.* Views from the local residents, stakeholders, surrounding institutions and development partners who in one way or another would be affected or rather interested in the proposed project were sought through public meetings, discussions, and key informant interviews, and as stipulated in the act.

8.1 Objectives of the Consultation and Public Participation

The objective of the consultation and public participation was to:

i. Disseminate and inform the stakeholders about the project with special reference to its key components and location.
ii. Gather comments, suggestions and concerns of the interested and affected parties that may be useful in the decision-making process.
iii. Disclosure and a good understanding of the project to ensure the anticipated impacts are not overlooked and potential benefits are maximized.
iv. To facilitate consideration of alternatives and development of mitigation measures and management plans.
v. Incorporate the information collected in the EIA Study.

8.2 Stakeholders Identification

The process involves the identification of the stakeholders who are directly or indirectly affected by the project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. The different stakeholder groups identified include but are not limited to the following:

i. The local community includes the immediate neighbours at a radius of 250 meters from the site such as *St Joseph's Apartment – Kileleshwa, Luxehill Villas, and Samaritan Purse.*

ii. Institutions within the local area at a radius of 250 meters from the site such as *Erdemann Chinese School.*

iii. Government agencies include the *National Government Administration Officers (NGAO)and the Water Resources Authority (WRA)*.

iv. Development agencies that will include *NCWSC and KPLC.*

v. The project personnel including consultants and construction workers.

8.3 Consultation Methods and Techniques

In line with Regulation 17 of the Environmental (Impact Assessment and Audit) Regulations, 2003 on Public Participation, the following methods and techniques were employed to gather information, comments and concerns from the identified PAP;

i. Public meetings

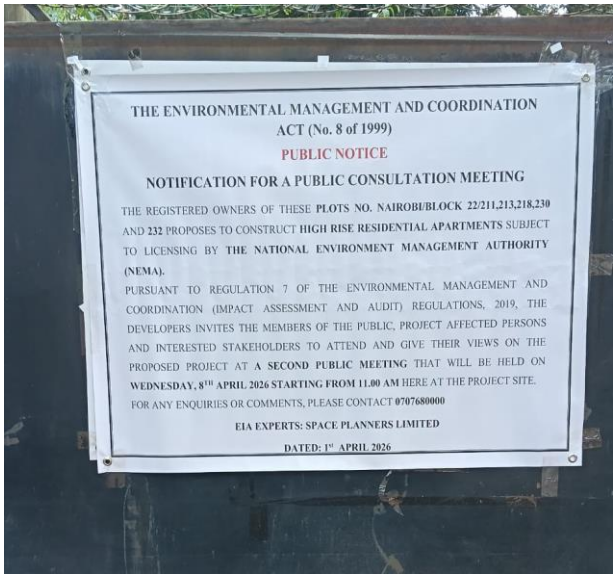
ii. One-on-one interviews with the PAP

iii. Field surveys and observations

8.4 Public Consultation Forums

Prior to the public consultation meetings, appropriate notices including the posters and invitation letters were sent out to the identified stakeholders at least one week indicating the venue and time of the meeting on 18th March 2026 and 1st April 2026. The public consultative meetings were held at the project site on 25th March 2026 and 8th April 2026 where the local community and relevant stakeholders including the government sector representatives participated.

Plate 8. 1: Onsite Notices



Source: Fieldwork, 18/03/2026 and 01/04/2026

8.5 Stakeholders Concerns

The table below summarizes the issues, concerns and recommendations raised by stakeholders during the public participation exercise, together with the corresponding responses provided by the developer and the project consultants:

SN.	Concern	Response
1.	The depth of the proposed borehole.	That the proposed borehole will be drilled to a depth of approximately 300 metres, and all shallow aquifers will be sealed off during drilling to prevent over-extraction and to safeguard groundwater resources.
2.	That Corporate Social Responsibility (CSR) initiatives.	That the project team will consider and implement appropriate CSR initiatives in consultation with the Area Chief's office to ensure alignment with local community needs.
3.	Liquid waste management from the proposed development	That the development will be connected to the existing NCWSC sewer system. In addition, a mini-treatment plant will be constructed for treatment before final discharge into the sewer system which will enhance the system's self-cleaning efficiency.
4.	Rehabilitation of the Laikipia Road.	That the developer will liaise with neighbouring property owners to rehabilitate and upgrade the access road, subject to obtaining the requisite permits from the Nairobi City County Government and the relevant road authority.
5.	Assurance of the developer's commitment to implementing the proposed mitigation measures throughout the project cycle.	That it is a legal requirement for the proponent to implement all proposed mitigation measures, and a Grievance Redress Mechanism (GRM) will be established to address any concerns that may emerge during the project cycle.
6.	The proposed development construction timelines.	That the overall construction period is expected to take approximately thirty-six (36) months with major construction activities likely to generate significant noise and dust completed within 18 months.

The EIA Study Report has thoroughly assessed the identified concerns and proposed appropriate mitigation measures and safeguards which if effectively implemented will ensure that the proposed project integrates harmoniously with the surrounding developments.

8.6 Grievance Redress System

The proponent will develop a Grievance Redress System (GRS) and make it accessible to all stakeholders internally and externally. The GRS will always seek to address grievances through legally acceptable methods and as fast as possible whilst not preventing any complainants from seeking other legally acceptable methods to justice. Such a GRS should be made available to staff on recruitment and to members of the general public either through government agencies/offices through grievance application forms, and internally by establishing procedures for investigation and quick redress that will be recorded and tracked. The GRS shall be monitored through indicators of its efficiency and effectiveness of solving the grievance and producing lessons learnt through which corrective actions can be undertaken to improve the project's health and safety strategies. Additionally, as part of monitoring and review all grievances should be reported to the relevant authorities and corrective actions taken, to ensure the system is credible and transparent. The process should also be culturally appropriate, transparent, and non-coercive.

The developer will set up a team that will oversee the implementation of continuous stakeholder engagement. This will comprise the Sociologist (Grievance Officer), EHS officer, Site supervisor, and a community representative. All information relating to the project will be posted on the information board at the site office as well as posters erected at the gate to inform the neighbors. Any issues arising from the stakeholders in the area will be received by the grievance officer, recorded and addressed accordingly in the shortest possible time. All relevant stakeholders will be informed in advance of the planned project activities. The development of the project will be based on the EIA procedures and EMP provided in this EIA Study Report.

CHAPTER NINE: ANALYSIS OF PROJECT ALTERNATIVES

In order to enable the proposed project to seek different ways of minimizing its impacts on the environment and at the same time achieve its objectives several alternatives were assessed through its architectural and engineering designs and environmental planning through this ESIA to come up with the most suitable options in implementing this project.

9.1 No Project Alternative

This alternative implies that the status quo is maintained with no development of the proposed development. This alternative will ensure there is no interference with the existing conditions and would prevent the realization of any negative impacts resulting from the construction of the residential apartments. However, it means the benefits associated with the proposed development will be foregone and the supply of housing will not be achieved resulting in pressure on the existing housing units. The neighborhood character and trends show that the area continues to grow with the predominant land uses now being high-rise residential developments as well as other land uses to support these developments such as schools, hospitals and religious institutions.

The "No Option alternative" is therefore the least preferred and is deemed inappropriate based on economic and environmental considerations.

9.2 Proposed Project Option

The proposed project complies with the areas development policy which allows for High-rise Residential Development. The proponent is proposing to construct 1,090 residential apartments to cater for the rising demand for housing units in the area. The proponent applied for a *Change of Use* from a *Single Dwelling Unit to Multiple Dwelling Units (Apartments)* and approvals were granted by NCC. The proposed project will have numerous benefits such as the provision of housing units, revenue generation to the government, provision of employment opportunities, and the market for goods and services among others. The EIA has proposed mitigation measures for the anticipated negative impacts and developed an EMP to ensure that the impacts are mitigated to a level of no significance. The proponent will comply with the environmental management practices throughout the project cycle in order to maintain harmonious co-existence with the neighboring developments.

Therefore, this is the best option and should be supported by the authority through the issuance of the EIA License.

9.3 Alternative Site

An alternative site could be considered for the proposed development if the project presents serious environmental challenges that cannot be managed effectively. However, the proposed mitigation measures considered are adequate to minimize the anticipated negative impacts to levels that do not warrant significant environmental damage. The proposed project complies with the area's development policy and is compatible with the existing land uses. Additionally, the search for an alternative site would imply an increase in expenditure, time, and additional costs to the proponent. *Hence, this alternative is not considered viable.*

9.4 Alternative Construction Materials and Technologies

The proposed project will be constructed using reinforced concrete, natural stones for the walling, cement for mortar and plaster works, structural steel, metal scaffolds and formwork. The concrete structure will be built using locally sourced materials that meet the KEBS requirements. The metal scaffolds will be advantageous than timber because they will reduce the wasting of trees, have a longer lifetime, provide a steady and firm standing, are easily assembled and dismantled and increases work efficiency. The technologies available include timber construction, prefabricated concrete panels, concrete frame construction, conventional brick and mortar style, steel and an aluminum frame, and Expanded Polystyrene Technology. The proponent has preferred the use of reinforced concrete construction as the technology is durable, offers outstanding resistance to explosion and/or impact, and performs well during both natural and manmade disasters. Reinforced concrete can also endure very high temperatures from fire for a long time without loss of structural integrity and the materials are locally available.

9.5 Alternative Sources of Water and Energy

The increased water and energy demand will place some amount of strain on the existing infrastructure in the area. The proponent has proposed to *drill a borehole and harvest rainwater* as alternative sources of water for the proposed development. The developer will also apply for an onsite transformer from KPLC for energy supply within the development and install *solar panels* as an alternative renewable source of energy for the proposed development.

CHAPTER TEN: ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Environmental monitoring involves the measurement of relevant parameters, at a level of details accurate enough to distinguish the anticipated changes. Monitoring aims to determine the effectiveness of actions to improve environmental quality. The EMP outlined in the tables 10.1, 10.2, and 10.3 below addresses the identified issues of concern (potential negative impacts) and mitigation measures as well as roles, estimated annual costs and monitorable indicators that can help to determine the effectiveness of actions to upgrade the quality of the environment. The key responsible parties to ensure strict implementation of this EMP will be the proponent, contractor, and authorities such NEMA, NCC, NCA and WRA. The proponent will employ a Project Manager who will oversee the implementation of this EMP to ensure adequate monitoring and evaluation by the contractor for no non-conformances. The contractor will also employ a full time Health and Safety officer to be responsible for the monitoring and implementation of this EMP for the pre-construction and construction phases. Some of the estimated annual costs for environmental management have been billed in the Bill of Quantities (BQ) and are indicated as BQ cost while other costs will be part of the Operations and Maintenance (O&M) costs during the operation phase of the project.

10.1 EMP FOR THE CONSTRUCTION PHASE

Table 10. 1: Environmental Management Plan during Construction Phase

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
Soil	Soil Erosion and Contamination	▪ Obtain an excavation permit from NCC before the excavation works begin	▪ Excavation permit	Before excavation	Proponent NCC	75,000
		▪ Use of standard equipment for the excavation work	▪ Type of machinery used	Excavation period	Proponent Contactor	0
		▪ Control excavation works, especially during rainy/wet conditions	▪ Excavation records	Excavation period	Contactor	0
		▪ Install adequate sediment and soil erosion control measures	▪ Soil erosion control measures	Continuous	Contractor	BQ Cost
		▪ Stabilize exposed surfaces to reduce susceptibility to erosion by wind and surface runoff	▪ Stabilized soils	Continuous	Contractor	BQ Cost
		▪ Install adequate sediment and erosion control measures to prevent sediment discharge into the watercourse	▪ Sediment and erosion control measures	Continuous	Contractor	BQ Cost
		▪ Control the stockpiles within the site	▪ Well-managed stockpiles	Continuous	Contractor	0

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Maintain equipment and vehicles away from the site to avoid soil contamination	▪ Soil analysis tests	Continuous	Proponent Contractor	20,000
		▪ Provide adequate sanitary conveniences connected to the existing conventional sewer line to prevent soil contamination by untreated effluent	▪ Monitoring records	Continuous	Proponent Contractor	0
		▪ Landscaping within the riparian reserve and open spaces by planting indigenous trees and grass	▪ Number of indigenous trees planted	Before operation	Proponent Contractor	BQ cost
Air Quality	Nuisance and adverse health due to fugitive dust and emissions from vehicle and machinery	▪ Screen the construction site to control and arrest construction-related dust	▪ Presence of dust screens	Continuous	Proponent Contractor	BQ Cost
		▪ Sprinkling of water in work areas to prevent fugitive dust violations	▪ Record of complaints	Continuous	Proponent Contractor	BQ cost
		▪ Utilize automated misting and dust suppression systems	▪ Record of complaints	Continuous	Proponent Contractor	BQ cost
		▪ Deploy wheel-washing systems at site exits to prevent tracking of dust and soil onto public roads.	▪ Record of complaints	Continuous	Proponent Contractor	BQ cost
		▪ Use low-emission construction machinery	▪ Record of complaints	Continuous	Proponent Contractor	BQ cost
		▪ Provide adequate and appropriate PPE such as nose masks and goggles to the workers	▪ Presence and usage of PPE	Continuous	Contractor Workers	50,000
		▪ Regular maintenance of machinery and vehicles	▪ Service records	Continuous	Contractor	BQ cost
		▪ Use of environmentally friendly fuels	▪ Fuel records	Continuous	Contractor	BQ cost
		▪ No burning of waste within the site	▪ Records of complaints	Continuous	Contractor Workers	0
		▪ Covering of stockpiles within the site	▪ Covered stockpiles	Continuous	Contractor	0
		▪ Cover the loaded vehicles with a clean impervious sheet	▪ Covered trucks	Continuous	Contractor	0
		▪ Sensitize the drivers on how to minimize unnecessary trips and idling of engines.	▪ Sensitization records	Continuous	Contractor Drivers	20,000
		▪ Use of low-emission machinery	▪ Type of machinery used	Continuous	Contractor	0
		▪ Training of workers on air quality management	▪ Training records	Continuous	Contractor Workers	20,000
		▪ Undertake ambient air quality monitoring within the site	▪ Air quality measurements	Annually	Contractor	40,000
Noise and Excessive	Nuisance and adverse health	▪ Construction activities will be carried out on weekdays between 0800hrs to 1800hrs and on	▪ Work schedule records	Continuous	Proponent Contractor	0

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
Vibrations	impacts from high noise and vibration levels from machinery and vehicles	Saturday only between 0800hrs to 1300hrs				
		▪ No construction work will be undertaken on Sundays	▪ Work schedule records	Continuous	Proponent Contractor	0
		▪ No blasting of rocks during the excavation period	▪ Records of complaints	Excavation period	Proponent Contactor	0
		▪ Provide adequate and appropriate PPE such as earmuffs and earplugs to the workers	▪ Presence and usage of PPE	Continuous	Contractor Workers	20,000
		▪ Training of workers on noise management	▪ Training records	Continuous	Contractor Workers	20,000
		▪ Schedule noisy activities concurrently to reduce the exposure period	▪ Work schedule records	Continuous	Contractor	0
		▪ Route trucks used at the site away from noise-sensitive areas where feasible.	▪ Truck Routes	Continuous	Contractor	0
		▪ Install noise shields and barriers in noisy areas	▪ Noise shields/barriers	Continuous	Contractor	BQ cost
		▪ Use of noise abatement machinery/devices	▪ Type of machinery used	Continuous	Contractor	0
		▪ Post warning signs in high-noise areas	▪ Availability of warning signs	Continuous	Contractor	5,000
		▪ Regular maintenance of the machinery and vehicles	▪ Service records	Continuous	Contractor	BQ cost
		▪ Install sound-absorbing materials such as an acoustic enclosure within the generator room	▪ Acoustic enclosure	Before operation	Proponent Contractor	BQ cost
		▪ Adopt low-noise and electric-powered construction equipment	▪ Records of complaints	Continuous	Proponent Contactor	0
		▪ Undertake regular maintenance and servicing of machinery	▪ Maintenance records	Continuous	Contractor	BQ cost
		▪ Ambient noise level monitoring within the site	▪ Noise level measurements	Annually	Proponent Contractor	40,000
Liquid Waste	Health and safety hazards and environmental pollution from poor management of wastes	▪ Obtain a site toilet permit from NCC	▪ Site toilet permit	Before construction	Proponent NCC	10,000
		▪ Construct an internal reticulation system and STP for liquid waste management within the property.	▪ Reticulation System and STP	Before Construction	Proponent Contractor	BQ cost
		▪ Extend the connection of the proposed development to the existing conventional sewer system	▪ Sewer connection permit	During Construction	Proponent Contractor NCWSC	BQ cost
		▪ Provide adequate sanitary conveniences to the workers	▪ Number of sanitary conveniences	Before construction	Proponent Contractor	BQ cost
		▪ Ensure the sanitary conveniences are kept clean	▪ Cleaning records	Continuous	Proponent	BQ cost

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		at all times			Contactor	
		▪ Proper decommissioning of the sanitary conveniences	▪ Decommissioning plan	Before operation	Contractor	BQ cost
		▪ Install hygiene awareness signs within the site	▪ Presence of hygiene signs	Continuous	Contractor	10,000
		▪ Train workers on hygiene during the toolbox meetings	▪ Training records	Continuous	Contractor Workers	20,000
Solid Waste	Health and safety hazards and environmental pollution from poor management of wastes	▪ Develop and implement a three-year Waste Management Plan	▪ Waste Management Plan	Before construction	Proponent, Contractor	10,000
		▪ Provide a centralized Waste Collection Centre (WCC) for waste management with appropriate waste receptacles	▪ Waste collection centre ▪ Colour-coded waste receptacles	Continuous	Contractor	20,000
		▪ Segregation of non-hazardous waste into organic and non-organic fractions	▪ Waste management records	Continuous	Contractor	0
		▪ Engage a NEMA-licensed transporter to collect and dispose of the segregated waste	▪ Contract with licensed waste transporter	Continuous	Contractor	50,000
		▪ Provide adequate and appropriate PPE such as gloves to the workers	▪ Presence and usage of PPE	Continuous	Contractor Workers	20,000
		▪ Monitor the type and volume of waste generated within the site	▪ Waste management records	Continuous	Contractor	0
		▪ Install warning signage within the riparian reserve such as “No Dumping’’.	▪ Presence and warning signs	Before Construction	Contractor	5,000
		▪ Train workers on solid waste management within the site	▪ Training records	Continuous	Contractor Workers	20,000
Water Use	Increased demand on local water resources	▪ Extend the connection of the main water supply to the proposed development	▪ Water Connection Permit	During Construction	Proponent NCWSC Contractor	BQ Cost
		▪ Drill a borehole as an alternative source of water for the development	▪ Authorization Permit ▪ Completion certificate	During Construction	Proponent Contractor WRA	BQ Cost
		▪ Install rainwater harvesting facilities to supplement the existing water supply	▪ Rainwater harvesting facilities	During Construction	Contractor	0
		▪ Use of water efficiently within the site	▪ Water use records	Continuous	Contractor	BQ cost
		▪ Provide adequate tanks for water storage purposes	▪ Presence of water tanks	During Construction	Contractor	BQ cost
		▪ Use of water-efficient fixtures and fittings	▪ Type of water components used	During Construction	Contractor	BQ cost
		▪ Regular maintenance of the water components	▪ Service records	Continuous	Contractor	10,000

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Install notices and information signs on water conservation measures	▪ Presence of notices and signs	Continuous	Contractor	10,000
		▪ Train workers on water conservation measures	▪ Training records	Continuous	Contractor Workers	10,000
		▪ Monitor water consumption within the site	▪ Water use records	Monthly	Contractor	0
Energy Use	Increased demand for local energy resources	▪ Extend the connection of the power supply from the main grid to the proposed development	▪ Electricity connection permit	Before construction	Proponent Contractor KPLC	BQ cost
		▪ Install solar panels as an alternative source of energy	▪ Presence of solar panels	Before Operation	Contractor	BQ cost
		▪ Install a standby generator as a backup source of energy	▪ Presence of a generator	Before Operation	Contractor	BQ cost
		▪ Install energy-efficient fixtures and fittings	▪ Type of energy components used	Before Operation	Contractor	BQ cost
		▪ Switch off machinery/equipment and lights when not in use	▪ Monitoring records	Continuous	Contractor	0
		▪ Utilize motion sensors and daylight sensors for automated lighting control in corridors, parking areas, and common spaces.	▪ Presence of motion sensors and daylight sensors	Before Operation	Contractor	BQ cost
		▪ Install sub-metering systems for different functional areas.	▪ Presence of sub-metering systems	Before Operation	Contractor	BQ cost
		▪ Provide notices and information signs on energy conservation measures	▪ Presence of notices and signs	Continuous	Contractor	10,000
		▪ Routine inspection and maintenance of electrical components by registered personnel	▪ Maintenance records	Continuous	Contractor	BQ cost
		▪ Monitoring of energy consumption within the site	▪ Energy use records	Continuous	Contractor	0
Traffic	Increased traffic causing a snarl-up along the access roads	▪ Develop and implement a Construction Traffic Management Plan	▪ Construction Traffic Management Plan	Before Construction	Contractor	BQ cost
		▪ Engage traffic marshals to control vehicular movement and ensure smooth entry and exit	▪ Presence of traffic marshals	Continuous	Contractor	BQ cost
		▪ Ferry building materials and construction waste during the off-peak period	▪ Delivery records	Continuous	Contractor	0
		▪ Provide a loading/offloading area for construction materials within the site	▪ Presence of a designated loading/offloading zone	Continuous	Contractor	0
		▪ Install traffic control signs to inform motorists and the public about the potential hazards and enforce the speed limit	▪ Presence of signage	Continuous	Contractor	10,000

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Provide a billboard at the site entrance notifying the public about the project	▪ Presence of a billboard	Before construction	Contractor	10,000
		▪ Train the drivers on traffic management practices such as adhering to the speed limit	▪ Record of complaints	Continous	Contractor	0
		▪ Provide temporary parking spaces for construction vehicles within the site	▪ Presence of parking spaces	During Construction	Contractor	BQ cost
		▪ Provide designated pick-up and drop-off zones within the proposed development to prevent vehicle queuing along the access road.	▪ Presence of designated pick-up and drop-off zones	Before construction	Proponent	BQ Cost
		▪ Install automated double-lane vehicle screening with appropriate security controls to minimize delays	▪ Presence of an automated double-lane vehicle screening	Before construction	Proponent	BQ Cost
Occupational Safety and Health	Safety and health hazards	▪ Register the site as a workplace with DOSHS	▪ Certificate of Registration	Before construction	Proponent DOSHS	10,000
		▪ Insure workers against accidents	▪ Insurance cover	Annually	Contractor	BQ cost
		▪ Provide adequate PPE to the workers	▪ Presence and usage of PPE	Continuous	Proponent	20,000
		▪ Provide first aid facilities within the site	▪ Presence of a well-equipped first aid box	Continuous	Contractor	10,000
		▪ Undertake a first aid audit for the development	▪ First aid audit report	Annually	Contractor	50,000
		▪ Sensitize the workers on social issues such as drug and substance abuse	▪ Sensitization records	Continuous	Contractor Workers	10,000
		▪ Post hazard warning signs at strategic points within the site	▪ Warning signs displayed	Continuous	Contractor	10,000
		▪ Develop an Emergency Response Plan to manage the occurrence of hazards	▪ Emergency Response Plan	Continuous	Contractor	10,000
		▪ Establish a safety and health committee within the site	▪ Presence of a safety and health committee	Before Construction	Contractor	0
		▪ Training the workers on safety and health best practices	▪ Training records	Continuous	Contractor Workers	20,000
		▪ Undertake a safety and health audit for the development	▪ Safety and health audit report	Annually	Contractor	50,000
		▪ Install physical barriers and controlled access systems around the swimming pool.	▪ Presence of physical barriers	During Construction	Contractor	BQ cost
		▪ Undertake a risk assessment of the workplace	▪ Risk assessment report	Annually	Contractor	50,000
		▪ Ensure that the workers are registered with SHIF / NSSF and remit appropriate fees	▪ SHIF/NSSF Covers	Continuous	Contractor Workers	0
		▪ Keep records of public emergency service telephone numbers	▪ Presence of the emergency telephone numbers	Continuous	Contractor	0

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Provide an adequate supply of wholesome drinking water to the workers	▪ Availability of drinking water	Continuous	Contractor Workers	BQ cost
	Fire risks within the site and neighbouring developments	▪ Provide firefighting equipment within the site	▪ Presence of firefighting equipment	Continuous	Contractor	30,000
		▪ Establish a firefighting team within the site	▪ Availability of a firefighting team	Continuous	Contractor	0
		▪ Training the workers on fire safety measures	▪ Training records	Continuous	Contractor Workers	20,000
		▪ Undertake a fire safety audit for the development	▪ Fire safety audit report	Annually	Contractor	50,000
		▪ Conduct fire drills within the site	▪ Fire drill records	Annually	Contractor	0
		▪ Post fire prevention signs and notices at strategic points within the site	▪ Presence of signs and notices	Continuous	Contractor	10,000
		▪ Post fire exit routes and fire assembly point within the site	▪ Availability of fire signs and assembly point	Continuous	Contractor	10,000
		▪ Post fire emergency and evacuation procedures at strategic points within the site	▪ Emergency and Evacuation Procedure	Continuous	Contractor	10,000
	Insecurity	▪ Engage licensed security personnel to guard the property and monitor the access points	▪ Presence of licensed security guards	Continuous	Contractor	BQ cost
		▪ Obtain a hoarding permit from NCC	▪ Hoarding permit	Annually	Proponent NCC	BQ cost
		▪ Hoard the site to enhance its security	▪ Availability of hoarding	Continuous	Contractor	BQ cost
		▪ Keep records of the movement of people and vehicles in and out of the site	▪ Entry/Exit records available	Continuous	Contractor	0
		▪ Install access control measures within the development	▪ Availability of access control measures	Continuous	Proponent Contractor	0
		▪ Install security lights and CCTV at strategic points within the site	▪ Presence of security lights and CCTV	Continuous	Contractor	BQ cost
Storm water	Flooding	▪ Construct gently sloping drainage channels covered with gratings for stormwater management	▪ Presence of drainage channels with gratings	During Construction	Contractor	BQ cost
		▪ Harvest rainwater to reduce the amount of runoff	▪ Presence of rainwater harvesting facilities	Continuous	Contractor	BQ cost
		▪ Use of semi-permeable materials during the construction of pavements	▪ Presence of semi-permeable pavements	After Construction	Contractor	BQ cost
		▪ Undertake comprehensive soft landscaping by planting indigenous trees and grass	▪ Number of trees planted	After Construction	Contractor	BQ cost

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
Loss of Vegetation	Vegetation loss which may cause soil erosion and air pollution	▪ Apply for a tree-cutting clearance certificate from the Nairobi County Director of Forestry before cutting down the trees.	▪ Tree-cutting clearance certificate	Before construction	Proponent	BQ Cost
		▪ Undertake a comprehensive landscaping exercise after the construction phase by planting indigenous trees within the riparian reserve and designated open spaces	▪ Number of trees planted	After Construction	Proponent Contractor	BQ cost
		▪ Develop and implement a Flora Management Plan (FMP) before site clearance to guide vegetation protection and management.	▪ Presence of a Flora Management Plan (FMP)	Before construction	Proponent	0
		▪ Transplant the conservation-sensitive species such as hibiscus fragilis to the riparian reserve.	▪ Number of transplanted *hibiscus fragilis* shrubs	Before Construction	Proponent Contractor	0
		▪ Demarcate the riparian reserve by placing visible and permanent beacons.	▪ Presence of permanent beacons	Before construction	Proponent	BQ Cost
		▪ Retain all existing trees and shrubs within the demarcated riparian reserve.	▪ Number of conserved trees and shrubs	Continuous	Proponent	0
		▪ Restrict vegetation clearing strictly to the project footprint to minimize ecological disturbance	▪ Number of maintained trees	During Construction	Proponent Contractor	0
Oil	Oil pollution	▪ Fit all drainage facilities with adequate functional oil-water separators and silt traps	▪ Presence of oil-water separators and silt traps	During Construction	Contractor	BQ cost
		▪ Store oil or grease in a container at the designated place before final disposal	▪ Monitoring records	Continuous	Contractor	BQ cost
		▪ Routine maintenance of machinery away from the site to avoid oil pollution	▪ Maintenance records	Continuous	Contractor	BQ cost
		▪ Develop and implement an Oil Spill Prevention and Emergency Response Plan (ERP) detailing containment procedures, reporting mechanisms, and cleanup actions.	▪ Availability of an Emergency Response Plan	Before construction	Contractor	BQ Cost
		▪ Engage licensed waste transporters to dispose of oily containers at designated disposal sites	▪ Contract with licensed waste transporter	Continuous	Contractor	BQ cost

10.2 EMP FOR THE OPERATION PHASE

Table 10. 2: Environmental Management Plan during Operation Phase

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
Storm Water Management	Flooding	▪ Regular maintenance of drainage channels and rainwater harvesting facilities	▪ Maintenance Records	Continuous	Proponent	O&M Costs
		▪ Routine inspection and maintenance of the landscaped areas	▪ Maintenance records	Continuous	Proponent Workers	20,000
Air Quality	Nuisance and adverse health due to dust emission and vehicle fumes	▪ Routine cleaning of the WCC, sanitary facilities and common areas	▪ Cleaning records	Continuous	Proponent Workers	O&M Costs
		▪ Regular maintenance of the machinery such as the generator to minimize the generation of hazardous gases.	▪ Maintenance records	Continuous	Proponent	O&M Costs
		▪ Provide adequate and appropriate PPE such as masks to the workers	▪ Presence and usage of PPE	Continuous	Proponent Workers	10,000
		▪ No burning of waste within the site	▪ Record of Complaints	Continuous	Proponent	0
		▪ Regular collection and disposal of solid waste to avoid foul smell	▪ Waste management records	Continuous	Management	0
		▪ Ambient air quality monitoring within the site	▪ Air quality measurements	Annually	Proponent	20,000
Noise and Vibration	Nuisance and adverse health impacts from high noise and vibration levels	▪ Sensitize the residents on the minimal permissible noise levels within the development.	▪ Sensitization Records	Continuous	Proponent Residents	10,000
		▪ Regular maintenance of the generator to minimize frictional noise	▪ Maintenance Records	Continuous	Proponent Management	5,000
		▪ Undertake ambient noise level measurements and adhere to the recommendations therein.	▪ Noise level measurements	Annually	Proponent	20,000
Liquid Waste	Health and safety hazards and environmental pollution from poor management of wastes	▪ Regular inspection and maintenance of foul water drainage system at the premises to prevent clogging and forestall breakdowns	▪ Maintenance records	Continuous	Proponent Management	O&M Costs
		▪ Use automated irrigation systems with soil moisture sensors to prevent overwatering of landscaped areas.	▪ Presence of automated irrigation systems	Before Operation	Proponent Management	O&M Costs
		▪ Fix any damages to the foul water drainage system expeditiously	▪ Record of complaints	Continuous	Proponent Management	O&M Costs
		▪ Regular maintenance of foul water and the STP at the premises to prevent clogging & forestall breakdowns and ensure continued efficiency.	▪ Maintenance records	Continuous	Proponent Management	O&M Costs
		▪ Engage licensed waste transporters to remove	▪ Contract with licensed waste	Biennial	Proponent	O&M Costs

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		and dispose of the sludge from the STP periodically	transporter		Management	
		▪ Regular cleaning of the sanitary conveniences	▪ Cleaning records	Daily	Proponent	0
		▪ Provide adequate and appropriate PPEs such as gloves to the cleaners	▪ Presence and usage of PPES	Continuous	Proponent Management	10,000
Solid Waste	Health and safety hazards and environmental pollution from poor management of wastes	▪ Develop and implement a three-year Waste Management Plan	▪ Waste Management Plan	Before Operation	Proponent Management	10,000
		▪ Engage a NEMA-licensed transporter to collect and dispose of the segregated waste	▪ Contract with licensed waste transporter	Continuous	Proponent Management	O&M Costs
		▪ Provide appropriate waste receptacles for segregation of waste	▪ Color-coded waste receptacles	Before operation	Proponent	50,000
		▪ Segregation of non-hazardous waste into organic and non-organic fractions	▪ Waste management records	Continuous	Proponent Management	0
		▪ Monitor the type and volume of waste generated within the site	▪ Waste management records	Continuous	Proponent Management	0
		▪ Provide adequate and appropriate PPE such as gloves and masks to all the workers handling the solid waste within the site	▪ Presence and usage of PPE	Continuous	Proponent Management	10,000
		▪ Manage hazardous waste separately, ensuring storage in sealed, labelled containers and disposal through licensed hazardous waste handlers.	▪ Presence of sealed hazardous waste receptables	Continuous	Proponent Management	O&M Costs
		▪ Keep records of waste tracking documents for the solid waste generated within the development.	▪ Waste tracking documents	Continuous	Proponent Management	O&M Costs
		▪ Sensitize the residents on solid waste management within the site	▪ Sensitization records	Continuous	Proponent Residents	0
Water Use	Increased demand on local water resources	▪ Use of water efficiently within the development	▪ Water Use records	Continuous	Residents	0
		▪ Regular maintenance of all the water components by licensed personnel.	▪ Maintenance Records	Continuous	Management	O&M Costs
		▪ Use of water-efficient fixtures and fittings	▪ Types of fittings used	Continuous	Proponent	O&M Costs
		▪ Monitor the water consumption within the development	▪ Water Use records	Monthly	Proponent	0
		▪ Use borehole water and harvested rainwater to supplement the existing water supply	▪ Extraction records ▪ Quantity of water harvested	Continuous	Proponent Management	0
Energy Use	Increased use of energy and	▪ Switch off machinery/equipment and lights when not in use	▪ Monitoring records	Continuous	Management	0

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
	indoor air pollution	▪ Use of energy-efficient fixtures and fittings	▪ Type of energy fittings	Continuous	Proponent	0
		▪ Routine inspection and maintenance of electrical components by registered personnel	▪ Maintenance records	Continuous	Proponent	O&M Costs
		▪ Monitor energy consumption within the site	▪ Energy use records	Continuous	Proponent	0
Occupational Safety and Health	Safety and health hazards	▪ Formulate an Internal Environmental Policy to guide the best practices within the development	▪ Internal environmental policy	Before Operation	Proponent	10,000
		▪ Adapt a suitable ERP to manage the occurrence of anticipated hazards	▪ Availability of ERP	Before Operation	Proponent	30,000
		▪ Post hazard warning signs at strategic points within the site	▪ Availability of warning signs	Continuous	Management	5,000
		▪ Sensitize the residents on occupational Health and safety.	▪ Sensitization records	Continuous	Proponent Residents	0
		▪ Undertake a health and safety audit of the premises by a registered health and safety adviser.	▪ Health and safety audit	Annually	Proponent	50,000
		▪ Monitor any accidents/incidents within the development and keep records	▪ Presence of accident register	Continuous	Proponent	20,000
		▪ Provide adequate and appropriate PPE to the workers within the development such as safety boots and overalls.	▪ Presence and usage of PPE	Continuous	Management Workers	10,000
		▪ Keep a record of the public emergency service telephone numbers including Police, Fire brigade, and Ambulance at strategic points within the site	▪ Presence of service telephone numbers	Continuous	Proponent	0
	Fire risks within the site and neighbouring developments	▪ Provide firefighting equipment within the development.	▪ Firefighting equipment	Before operation	Proponent	50,000
		▪ Regular inspection and maintenance of firefighting equipment by licensed personnel	▪ Maintenance records	Bi-annually	Proponent Management	O&M Costs
		▪ Post-fire exit routes and fire assembly point within the site	▪ Availability of fire exit route signs and assembly points	Before Operation	Proponent Management	20,000
		▪ Conduct fire drills within the development to sensitize the residents.	▪ Fire drill records	Annually	Proponent Residents	O&M Costs
	Security Risks	▪ Engage licensed security personnel to guard the property and monitor the access points	▪ Contract with licensed security guards	Continuous	Proponent	O&M Costs
		▪ Keep records of visitors accessing the development	▪ Entry/Exit Records	Continuous	Proponent Workers	0
		▪ Routine inspection and maintenance of access control measures, security lights and CCTV	▪ Maintenance records	Continuous	Proponent	O&M Costs

10.3 EMP FOR THE DECOMMISSIONING PHASE

Note: A due diligence environmental audit will be undertaken and submitted to NEMA at least three months prior to decommissioning and in line with the Environmental Management and Coordination Act No. 8 of 1999.

Table 10. 3: Environmental Management Plan during Decommissioning Phase

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
Air Quality	Nuisance and adverse health due to dust emission and vehicle fumes	▪ Prepare a Decommissioning Plan before the demolition exercise	▪ Decommissioning Plan	Before Demolition	Proponent NEMA	50,000
		▪ Issue notices of at least three (3) months to the tenants	▪ Vacation Notices	Before Demolition	Proponent Contractor	0
		▪ Obtain a demolition permit from NCC	▪ Demolition permit	Before Demolition	Proponent NCC	30,000
		▪ Use of low-emission demolition machinery	▪ Type of machinery used	Continuous	Proponent Contractor	0
		▪ Provide adequate and appropriate PPE such as nose masks and goggles to the workers	▪ Presence and usage of PPE	Continuous	Proponent Contractor	20,000
		▪ Screen the construction site to control and arrest dust	▪ Dust screens	Before demolition	Proponent Contractor	300,000
		▪ Sprinkling of water in work areas to prevent fugitive dust violations	▪ Water use records	Continuous	Proponent Contractor	100,000
		▪ Ambient air quality monitoring within the site	▪ Air quality measurements report	Annually	Proponent Contractor	20,000
Noise and Vibration	Nuisance and adverse health impacts from high noise and vibration levels	▪ Provide adequate and appropriate PPE such as earmuffs and ear plugs to the workers	▪ Presence and usage of PPE	Continuous	Proponent Contractor	20,000
		▪ Demolition activities to be undertaken on weekday and on Saturday only	▪ Record of Complaints	Continuous	Proponent Contractor	0
		▪ No demolition work will be undertaken on Sundays	▪ Record of Complaints	Continuous	Proponent Contractor	0
		▪ Use of noise shields/suppressors on the demolition machinery	▪ Availability of Noise shields	Continuous	Proponent Contractor	20,000
		▪ Ambient noise level monitoring within the site	▪ Noise level measurements report	Continuous	Proponent Contractor	20,000
Solid waste management	Health and safety hazards and environmental pollution from poor management	▪ Engage a NEMA-licensed transporter to collect and dispose of the segregated waste	▪ Contract with licensed waste transporter	Continuous	Contractor	50,000
		▪ Segregate hazardous and non-hazardous waste before final disposal	▪ Segregated waste	Continuous	Contractor	0
		▪ Provide adequate and appropriate PPE to the	▪ Presence and usage of PPE	Continuous	Contractor	20,000

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
	of solid wastes	refuse collection workers				
		▪ Ensure refuse collection vehicles are covered to prevent scattering of waste	▪ Covered vehicles	Continuous	Contractor	0
		▪ Reuse of demolition debris in other construction projects	▪ Quantity of debris reused	Continuous	Contractor	0
Liquid waste management	Health and safety hazards and environmental pollution from poor management of liquid wastes	▪ Proper decommissioning of the sanitary facilities	▪ Decommissioning plan	Continuous	Proponent	0
		▪ Reuse of all the mechanical fittings (WC, WHB) in other projects	▪ Number of fittings reused	Continuous	Proponent	0
		▪ Provide adequate and appropriate PPE to the refuse collection workers	▪ Presence and usage of PPE	Continuous	Contractor	0
Energy Use	Increased use of energy and indoor/outdoor air pollution	▪ Switch off machinery/equipment when not in use	▪ Energy use records	Continuous	Proponent Contractor	0
		▪ Monitor energy consumption within the site	▪ Energy use records	Continuous	Proponent Contractor	0
Occupational Safety and Health	Safety and health hazards	▪ Insure demolition workers against accidents	▪ Insurance available	Continuous	Proponent Contractor	200,000
		▪ Provide adequate and appropriate PPE to the workers	▪ Presence and usage of PPE	Continuous	Proponent Contractor	50,000
		▪ Provide first aid facilities	▪ Well-stocked first aid box	Continuous	Proponent Contractor	10,000
		▪ Training the workers on safety and health best practices before the demolition exercise	▪ Training records	Continuous	Proponent Contractor	30,000
		▪ Ensure that the workers are registered with SHIF / NSSF and remit appropriate fees	▪ SHIF/NSSF Covers	Continuous	Contractor	BQ Cost
		▪ Provide an adequate supply of wholesome drinking water	▪ Availability of Drinking water	Continuous	Proponent Contractor	100,000
	Insecurity	▪ Engage licensed security personnel to guard the property and monitor the access points	▪ Contract with licensed security guards	Continuous	Proponent Contractor	BQ costs
Vegetation	Disturbance of fauna and flora species during the demolition exercise	▪ Implement an appropriate re-vegetation program to restore the site	▪ Re-vegetation program	Continuous	Proponent Contractor	10,000
		▪ Undertake comprehensive soft landscaping by planting indigenous trees	▪ Landscaped area ▪ Vegetation Cover	After demolition	Proponent Contractor	100,000
		▪ Fence the site to minimize disturbance of the newly vegetated area	▪ Fence available	After demolition	Proponent Contractor	50,000

CHAPTER ELEVEN: CONCLUSION AND RECOMMENDATIONS

The proposed development will provide numerous benefits to the housing sector and the country at large. Some of the benefits include the provision of residential apartments in the area, creation of employment opportunities, revenue generation to the National Government through taxes, revenue generation to the County Government through permits, income generation to the proponent through the sale and/or lease of the residential apartments, and market for goods and services. However, the proposed project will also have negative impacts, which include increased traffic along the access road, air and noise pollution, increased solid and liquid waste generation, increased energy and water demand, oil pollution, and increased health and safety hazards during the project cycle among others can be sufficiently mitigated.

The proponent has committed to putting in place various mitigation measures to mitigate the negative environmental, safety, health, and social impacts associated with 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 environmental, health and safety standards, policies and regulations that govern the establishment and operation of such projects. It is also recommended that the positive impacts that emanate from such activities shall be maximized as much as possible. It is expected that these measures will go a long way in ensuring the best possible environmental compliance and performance standards.

In light of the EIA findings and the mitigation measures outlined in the EMP, it is our recommendation that the proposed project be allowed to proceed subject to the following conditions:

i. That the proponent shall transplant the conservation-sensitive species such as hibiscus fragilis to the riparian reserve before the construction begins.
ii. That the proponent shall ensure periodic quantification and verification of GHG emissions for the proposed development as well as implementation of corrective and preventive actions to address performance gaps.
iii. The proponent ensures that none of the proscribed activities are carried out within the riparian reserve to a minimum of 10 meters from the highest water mark as pegged by WRA.

iv. That the proponent will drill a borehole to supplement the existing NCWSC water supply subject to the acquisition of an authorization permit from WRA and a separate EIA license from NEMA.

v. That the proponent shall obtain all the requisite permits/certificates and licenses before the construction begins and adhere to the conditions therein.

vi. That the proponent shall ensure full and strict implementation of the EMP developed in this report.

vii. That the proponent shall adhere to all relevant environmental, health, and safety standards, policies, and regulations that govern the establishment of the proposed project.

viii. That the proponent shall carry out an annual environmental audit within the first year of operation to confirm the efficacy and adequacy of the EMP developed to improve the environmental performance of the development.

ix. That the proponent shall adhere to all other conditions that the Authority may find necessary.

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APPENDICES

1. Copy of ownership documents
2. Copy of KRA PIN Certificate
3. Copy of Company Registration (CR12)
4. Copy of TOR Approval letter
5. Copy of expert practicing licenses
6. Copy of the Change of Use Approvals
7. Copy of the Land Amalgamation Approval
8. Copy of Approval Letter
9. Copy of the Approved Architectural Drawings
10. Copy of Traffic Impact Assessment Report
11. Copy of Ambient Air Quality Report
12. Copy of the Environmental Noise Level Measurement Report
13. Copy of the Hydrogeological and Geophysical Investigation Report
14. Copy of the Greenhouse Gas (GHG) Emissions and Climate Change Vulnerability Assessment Report
15. Copy of the Flora Biodiversity Assessment Report
16. Copy of Minutes, Attendance Sheets, and Photographs of the Public Meetings
17. Copy of Invitation Letters and Onsite Notices of the Public Meetings
18. Copy of the Bill of Quantities