ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT

FOR

THE PROPOSED RESIDENTIAL APARTMENTS DEVELOPMENT ON PLOT NO. NAIROBI/BLOCK 5/267 LOCATED ALONG BROOKSIDE LANE IN WESTLANDS 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:

The Brick Whisperers Limited,

P.O. Box 24187-00100,

Nairobi.

22nd October 2026

Declaration

This Environmental Impact Assessment (EIA) Study Report for the **Proposed Residential Apartments Development on Plot No. Nairobi/Block 5/267** located along Brookside Lane in Westlands area of Nairobi City County has been prepared by **Space Planners Limited, EIA 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).

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

SPACE PLANNERS LTD
P. O. Box 157 - 00800,
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Date: 22/10/2026

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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:

The Brick Whisperers Limited,
P.O. Box 24187-00100,
Nairobi.

THE BRICK WHISPERERS LIMITED
22 OCT 2026
P.O. Box 24187 - 00100, NAIROBI

Signed: _____ Date: Oct. 22nd, 2026

Name: Terry Guo

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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:	The Proposed Residential Apartments Development on Plot No. Nairobi/Block 5/267 located along Brookside Lane in Westlands area of Nairobi City County
Proponent:	The Brick Whisperers Limited, P.O. Box 24187-00100, Nairobi.

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

EIA Team

Name	Designation	NEMA Reg. No.	Signature	Date
Solomon Kyeni	Lead Expert	3,081		22/10/26
Aaron Mumo	Lead Expert	9,047		22-10-26
Lilian Mbogo	Associate Expert	13,273		22.10.2026

SPACE PLANNERS LTD
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NAIROBI
Date: 22/10/2026

Project Data Sheet

Project Title	Proposed Residential Apartments Development
Project Proponent	The Brick Whisperers Limited
KRA Pin	P052473299R
Postal Address	P.O. Box 24187-00100, Nairobi
Project Location	Plot No. Nairobi/Block 5/267 located along Brookside Lane in Westlands area of Nairobi City County
GPS Coordinates	Latitude - 1.2566° and Longitude 36.7947°
Plot Size	0.2023 Hectares
Project Scope	3 basements levels: Parking purposes Ground Floor: Recreational/Amenities Typical 1st to 28th floor: Residential Apartments
Housing Units	266 residential duplex apartments (182No. one-bedroom units, 70No. two-bedroom units, 14No. three-bedroom units),
Auxiliary Amenities	Convenience store, café, management office, swimming pool, gym, residents lounge, children's activity room, yoga area, and outdoor pickleball court
Parking	148 parking bays
Project Budget	KES 1,371,591,207.40
Energy Supply	On-site KPLC Transformer Solar panels Standby Generator
Water Supply	NCWSC Water Supply On-site Borehole Water Harvested Rainwater
Liquid Waste Management	Mini–Sewage Treatment Plant (STP) NCWSC conventional sewer system
Solid Waste Management	Licensed Private Waste Collectors Onsite Waste Collection Centre

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Acronyms

CCTV	Closed-circuit Television
CECM	County Executive Committee Member
CPP	Consultations and Public Participation
DOSHS	Directorate of Occupational Safety and Health Services
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EMP	Environmental Management Plan
ERP	Emergency Response Plan
GRM	Grievance Redress Mechanism
IUCN	International Union for Conservation of Nature
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
NCCG	Nairobi City County Government
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	Sewage Treatment Plant
TIA	Traffic Impact Assessment
TMP	Traffic Management Plan
TOR	Terms of Reference
VAT	Value Added Tax
WIBA	Work Injury Benefits Act
SHIF	Social Health Insurance Fund
WRA	Water Resources Authority

Executive Summary

The proponent, **The Brick Whisperers Limited,** has proposed to construct a 28-storey residential building on Plot No. Nairobi/Block 5/267 located along Brookside Lane in Westlands area of Nairobi City County. 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. At the time of our site visit, the subject property was characterized by residential maisonette with a servant quarter which will be demolished to pave the way for the proposed development upon acquisition of a demolition permit from Nairobi City County Government (NCCG).

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 a **28-storey residential building comprising 266 residential duplex apartments (182No. one-bedroom units, 70No. two-bedroom units, 14No. three-bedroom units), 148 parking bays, convenience store, café, management office, a swimming pool, gym, residents lounge, children's activity room, yoga area, and outdoor pickleball court with associated amenities** in Westlands area.

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.

The Environmental team 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 preparation and 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 a copy of TOR Approval (License No.: NEMA/ENVIS/EIA/TOR/Approval_0345)).*

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 public meeting(s), administration of questionnaires, discussions 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.

Potential Positive Impacts

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

i. Provision of 266 residential duplex apartments in Westlands area which 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, café, management office, a swimming pool, gym, residents lounge, children's activity room, yoga area, and outdoor pickleball court.

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

iv. Provision of fiscal revenue to the National Government 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 revenue to the County Government through fees from building plans, 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 as well as the commercial spaces (café and convenience store) 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. ▪ Install adequate sediment and erosion control measures such as silt traps and sediment fencing to prevent sediment discharge into the drainage system. ▪ 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 Personal Protective Equipment (PPE) such as masks to the workers in dusty areas. ▪ Cover the loaded vehicles with clean impervious sheeting to prevent the dispersion of particulate matter. ▪ Sensitize workers and drivers on air quality management.

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. ▪ 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. ▪ Install automated vehicle screening with appropriate security controls. ▪ Provide designated internal areas for pick-up and drop-off activities. ▪ 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–Sewage Treatment Plant (STP) for pre-treatment of liquid waste before final discharge into the existing conventional sewer line. ▪ Extend 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 permit from NCCG before the construction begins. ▪ Provide sufficient and suitable sanitary conveniences for the workers during the construction phase. ▪ Ensure 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 connection of the proposed development to the main water supply 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. ▪ Provide tanks for water storage purposes within the development. ▪ 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 a standby generator as a backup source of energy for the 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 to reduce the amount of stormwater reaching the surface. ▪ Use semi-permeable materials during the construction of pavements. ▪ Install sediment control measures such as silt traps. ▪ Routine inspection and maintenance of the existing 6-meter-wide drainage wayleave.
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 for the workers and third-party liability to compensate for any injury, loss, or damage to neighbouring properties that may arise from construction activities. ▪ 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. ▪ Keep records of the movement of people and vehicles in and out of the site. ▪ Install security lights around the property and ensure they are switched on only during the night hours. ▪ Install CCTV at strategic points for monitoring and enhancing the security of the property ▪ Construct a boundary wall and gatehouse to enhance security within the site.
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, **The Brick Whisperers Limited,** has proposed to construct **266 residential duplex apartments with associated amenities** on Plot No. Nairobi/Block 5/267 located along Brookside Lane in Westlands area of Nairobi City County. The proposed development will contribute to bridging the housing shortage in the area while adhering to the best environmental 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 Environmental Impact Assessment (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 regard 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 a **28-storey residential building comprising 266 residential duplex apartments (182No. one-bedroom units, 70No. two-bedroom units, 14No. three-bedroom units), 148 parking bays, convenience store, café, management office, a swimming pool, gym, residents lounge, children's activity room, yoga area, and outdoor pickleball court with associated amenities** in Westlands 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, 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 preparation and 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 a copy of TOR Approval (License No.: NEMA/ENVIS/EIA/TOR/Approval_0345)).*

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), administration of questionnaires, 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 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 socio-economic benefits;

i. Provision of Residential Apartments

The proposed project will provide 266 residential duplex apartments in Westlands 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, café, management office, a swimming pool, gym, residents lounge, children's activity room, yoga area, and outdoor pickleball court.

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 stewards, security personnel, shop attendants, waitstaff, chefs, 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 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 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 as well as the commercial spaces (café and convenience store) 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 **266 residential duplex apartments** in Westlands area. The project aims to provide housing infrastructure as well as maximizing the utilization of the property. At the time of our site visit, the subject property was characterized by residential maisonette with a servant quarter which will be demolished to pave the way for the proposed development upon acquisition of a demolition permit from Nairobi City County (NCC).

Plate 1: The Site

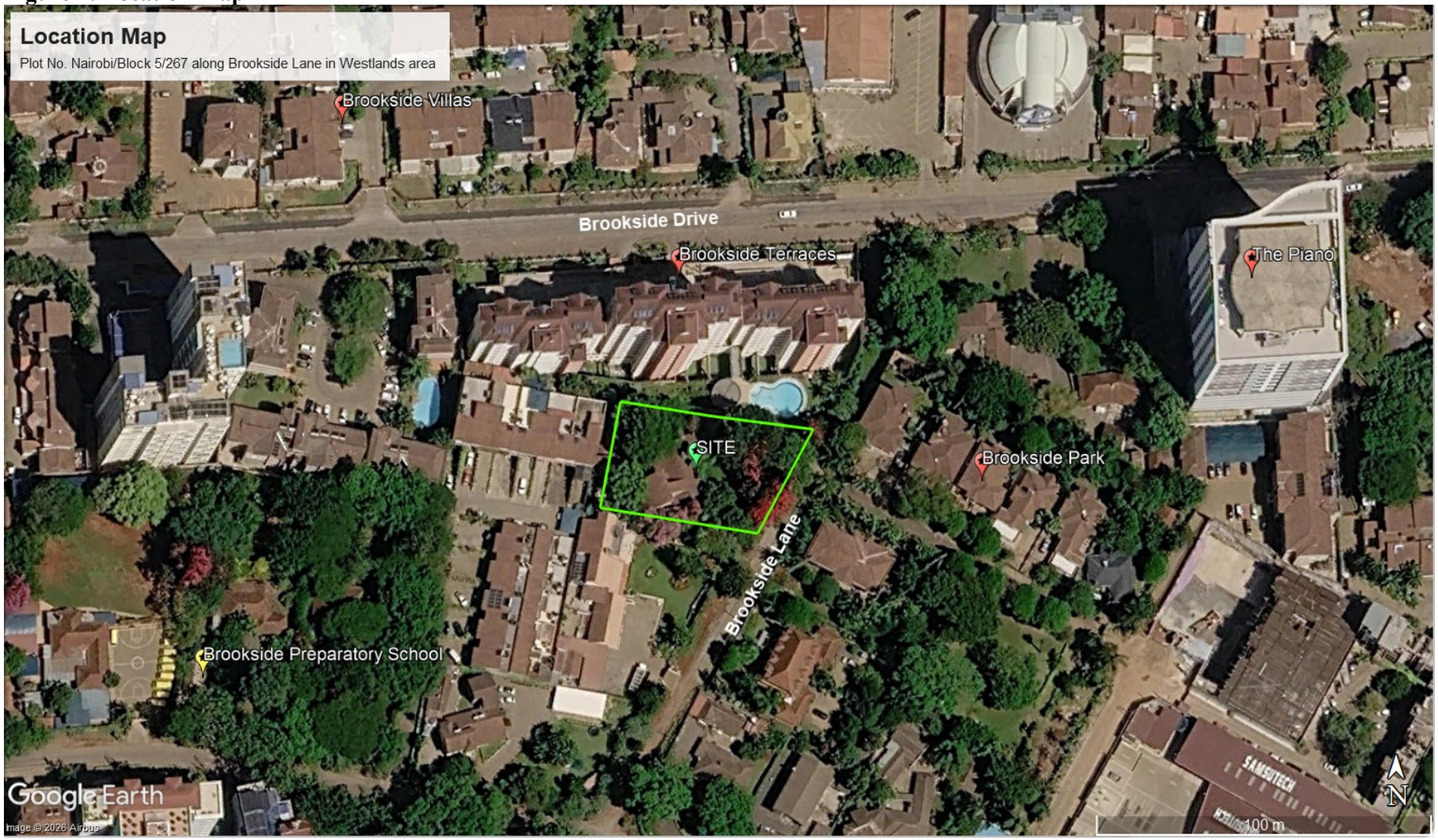


Source: Fieldwork, 26/08/2026

2.2 Project Location

The subject property is located along *Brookside Lane* and lies on latitude -1.2566° and longitude 36.7947° in Westlands area of Westlands Sub-County, Nairobi City County. It abuts *Brookside Terraces* to the north and is approximately 10 meters west of *Brookside Park* as shown in figure 1 below.

Figure 1: Location Map



Source: Google Earth, 2026

2.3 Land Tenure, Size, and Ownership

The subject property is registered as **Plot No. Nairobi/Block 5/267 (Original No. 1870/III/195)** under the Land Registration Act and the Land Registration (General) Regulations 2017 on **leasehold interest** for 99 years from 1st May 2018. It measures approximately **0.2023 hectares** and the registered proprietor is **The Brick Whisperers Limited** of P.O. Box 24187-00100, Nairobi who is seeking the EIA License from the Authority (*Attached is a copy of the ownership documents).*

2.4 Zoning of the Area

According to the **Nairobi City County Development Control Policy of 2026,** the site is located in **Westlands Zone (Commercial Core Sub-zone)** which allows for **Mixed Use Developments** with a skyline of 30 levels on a minimum plot size of 0.2 hectares. The proponent applied for a Change of Use from *Single Dwelling Unit to Commercial cum Residential Apartments* and approval was granted by NCC *(Ref. No. PLUPA-COU-004547-N).* Notable residential developments at a radius of 500 meters from the project site include: *Gemini - Ongoing (G+30), The Piano (G+17), and Brookside Terraces (G+10).* Other land uses within a radius of 500 meters from the project site include: *Educational, Commercial, and Public Purpose.* 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.

Plate 2: Atreus Brookside (L) and The Piano (R)



Source: Fieldwork, 26/08/2026

Figure 2: Land Use Analysis Map



Source: Google Earth, 2026

2.5 Project Description

The proponent proposes to construct a **28-storey residential building comprising 266 residential duplex apartments (182No. one-bedroom units, 70No. two-bedroom units, 14No. three-bedroom units), 148 parking bays, convenience store, café, management office, a swimming pool, gym, residents lounge, children's activity room, yoga area, and outdoor pickleball court with associated amenities** with the following features:

i. **Basement 1** comprising 49 parking bays and service room.
ii. **Basement 2** comprising 49 parking bays and service room.
iii. **Basement 3** comprising 46 parking bays, service room, underground water tank and a pump room.
iv. **Ground floor** comprising 4 parking bays, management office, coaching classroom, gym, outdoor pickleball court, reception area, café, convenience store, generator room with oil storage room, power room, and a garbage room.
v. **Typical 1st to 28th floor** comprising 19 units of residential duplex apartments (13No. of one-bedroom duplex units, 5No. of two-bedroom duplex units, and a three-bedroom duplex unit).

   Each duplex unit extends over two interconnected levels and comprises lounge, dining, kitchen, utility area, study area, internal staircase, washrooms, and terraces.
vi. **Roof level** comprising residents lounge, media room, children's activity room, swimming pool with two changing rooms, machine room, rooftop park, and terraces.

Other salient features include 2 staircases, 3 lift shafts, 3 service rooms, preamble hall, drop-off area, gate house (ensuite), refuse room, vehicle entry and exit points, pedestrian entry and exit points, machine room, service ducts, driveway, ramps, and passages.

Table 1: Total Number of Duplex Units

Description	1 Bedroom Duplex Units	2 Bedroom Duplex Units	3 Bedroom Duplex Units	Total Units
Typical 1st to 28th floor	182 (13 units x 14 floors)	70 (5 units x 14 floors)	14 (1 unit x 14 floors)	266
Sub Total	**182**	**70**	**14**	**266 Units**

Table 2: Total Number of Parking Bays

Description	Parking Bays
Ground floor	4
Basement 1	49
Basement 2	49
Basement 3	46
Total	**148 Bays**

More fine details, specifications, and features of the proposed project can be obtained from the architectural plans annexed to the report.

2.6 Existing Infrastructure and Services

2.6.1 Roads and Accessibility

The property is accessed via a *12-meter-wide Brookside Lane* in Westlands area of Nairobi City County. The access road is tarmacked, in need of rehabilitation, has streetlights but lacks walkways. It connects to *School Lane, Brookside Grove, Waiyaki way and Nairobi Expressway* which link the area nodes such as the Sarit Center, Westlands Square, and Nairobi 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 undertaken using the widely accepted Level of Service (LOS) concept based on the Highway Capacity Manual and the findings were as follows;

i. That motorized traffic counts were undertaken for three (3) nearby critical intersections namely Brookside Lane/School Lane, Brookside Grove/School Lane, and School Lane/Karuna Close.
ii. That the Brookside Lane/School Lane intersection currently operates at LOS B during both the AM and PM peak periods while the Brookside Grove/School Lane and School Lane/ Karuna Close intersections operate at LOS C during both the AM and PM peak periods.
iii. That the Brookside Lane/School Lane intersection is projected to deteriorate to LOS C while the Brookside Grove/School Lane and the School Lane/Karuna Close intersections are projected to deteriorate to LOS D with or without the development by the year 2034 reflecting increased pressure from traffic growth.
iv. The proposed 148 parking spaces exceed the adopted minimum requirement of 134 spaces under the Physical and Land Use Planning Handbook, 2025 but is below the 152 spaces estimated using the ITE Parking Generation Manual, 5th Edition (2019).
v. That the proposed development's contribution to overall traffic volumes is marginal relative to the anticipated background traffic growth.

To mitigate potential disruptions during the project cycle, a Traffic Management Plan (TMP) has been developed outlining measures such as incorporating separate entry and exit lanes; automated vehicle screening with appropriate security control; and designated pick-up/drop-off zones to ensure the smooth flow of traffic along the access roads. *(Attached is the Traffic Impact Assessment Report).*

Plate 3: Brookside Lane



Source: Fieldwork, 26/08/2026

2.6.2 Water Supply

The general area is served by the Nairobi City Water and Sewerage Company (NCWSC) through an existing water supply network comprising 100 mm, 75 mm, and 25 mm diameter water lines. During the construction period, water will be required for construction activities such as *cement mixing, curing 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* among others. The estimated water demand during the operation phase will be approximately *72 m³ 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 connect the proposed development to the main water supply upon the acquisition of a connection permit from the NCWSC water supply line. The developer will also *drill a borehole* as an alternative source of water subject to undertaking a hydrogeological assessment and the acquisition of an authorization permit from the 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 360m³ able to serve the residents for at least five (5) days. (Attached is the NCWSC Area Water Supply Network Map).*

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 energy demand during the operation phase will be approximately *5,060 kWh per day.* 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 4: Electricity Lines along Brookside Lane



Source: Fieldwork, 26/08/2026

2.3.4 Liquid Waste Management

The project area is served by an existing 225 mm diameter conventional sewer network that conveys the wastewater to the main trunk sewer located along the Kibarage River corridor. The estimated liquid waste that will be generated during the operation phase will be approximately *65 m³ 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 sewer system upon acquisition of a connection permit from NCWSC for liquid waste management.

The STP will reduce pollutant load, improve effluent quality, and enhance the hydraulic and operational efficiency of the downstream sewer network. All sanitary works will be done to the entire satisfaction of the County Public Health Department.

Plate 5: Sewer Manhole along Brookside Lane



Source: Fieldwork, 26/08/2026

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 soils and rock debris, 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 *300 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 Stormwater 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 *Kibarage River*. The subject property drains its stormwater through natural infiltration while the excess flows towards the existing 6-meter-wide drainage wayleave that channels stormwater into the open drains along Brookside Drive.

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 designated open spaces to increase the infiltration rate.

Plate 6: Open Drains along Brookside Drive (L) and Drainage Wayleave (R)



Source: Field Work, 26/08/2026

2.6.7 Security

The subject plot is currently secured by a combination of a shared masonry wall and a live fence complemented by a gated entrance with a guardhouse manned by licensed security personnel at all times. There are also streetlights 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 *Spring Valley Police Station* which is located approximately 1,500 meters northwest 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 7: Plot Fencing



Source: Field Work, 26/08/2026

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 NCCG for approval.
iii. Preparation of an EIA Study Report and submission to NEMA for licensing.
iv. Obtaining a tree-cutting clearance certificate, demolition, hoarding, and excavation permits from NCCG before the construction begins.
v. Obtaining a Compliance Certificate from the National Construction Authority (NCA) before the construction begins.
vi. Site preparation through demolition of the existing residential 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 natural and machine-cut 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 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 clay soils underlain by weathered breccia that transitions into weathered trachyte. Excavation of soils and the weathered rock will be undertaken to pave the 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 due to the nature of the rocks, thus reducing 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 excavation will be carried out in sections with continuous monitoring of the loose soil for any shifting and support where appropriate under continuous monitoring of underground water and dewatering where necessary. Suitable structural support measures will be implemented to ensure geotechnical stability and safety throughout the excavation period as well as safeguard neighboring properties. The support system that will be used includes *temporary retaining systems and slope stabilization techniques such as use of anchor grouts, walling, slope mesh and shotcreting.* The excavated sub-surface materials will be reused for backfilling and landscaping purposes within the site and in other construction sites.

ii. Structural Steelworks

The structural elements which include the strip footings, retaining walls, 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 will 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 mechanical and electrical 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 indigenous trees and grass within the 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 *266 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, children's play area, residents lounge, and a swimming pool.

iii. **Social Amenities:** The development will feature a range of community engagement spaces including a café that will provide opportunities for social interaction, casual dining, relaxation, and community events, thus enhancing the overall living experience for the residents.

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

   a) Obtain an Occupation Certificate from NCCG 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, a swimming pool, gym, café, children's play area, residents lounge, staircases, lobbies, 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 notice 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 before 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 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 **266 residential duplex apartments.**

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

a) The excavated soils and rock debris 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. **Waste:** 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 **One billion three hundred seventy-one million five hundred ninety-one thousand two hundred seven and forty cents Kenyan Shillings only (KES 1,371,591,207.40)**. The project implementation works are estimated to take approximately 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 to 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 so as not to pollute the surface and subsurface water.

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 additional residential apartments in Westlands 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 generated from the proposed project will be channeled into the STP for pre-treatment before final disposal into the existing conventional sewer system so as not to pollute the surface and subsurface water. This shall improve water quality and sanitation by ensuring that zero proportion of untreated wastewater is discharged into the environment.

Goal 7: Affordable and Clean Energy

The proposed development will enhance energy efficiency through the implementation of 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. The design will also incorporate setbacks 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 aspects of existence and development of interest to the people of Kenya, and along which all national and sectoral legislative documents are drawn. In relation to the environment, it provides the overarching constitutional framework for environmental protection and sustainable development in Kenya. Article 42 guarantees every person the right to a clean and healthy environment and provides for its protection for the benefit of present and future generations. Article 69 requires the State to ensure sustainable management and conservation of the environment and natural resources, encourage public participation in environmental management, protect biological diversity, and establish systems of environmental impact assessment, environmental audit and environmental monitoring. Article 69(2) further places a duty on every person to cooperate in the protection and conservation of the environment and to ensure ecologically sustainable development. Article 70 provides for enforcement of the environmental rights guaranteed under Article 42.

The proponent engaged the services of a licensed firm of experts to undertake this EIA and 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 any proponent of 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. Public consultation meetings, administration of questionnaires, 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 every six months or as the Authority may prescribe.

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 so as not to pollute the surface and subsurface water.

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 of 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 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 from causing excessive vibrations which exceed 0.5 centimeters per second beyond the property boundary which annoys, disturbs, injures, or endanger 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 and 1800hrs and on Saturdays only between 0800hrs and 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 Environmental Management and Co-Ordination (Access to Biological Resources and Benefit Sharing) (No. 2) Regulations, 2025

These regulations legally bind the state to eliminate activities likely to endanger the environment, protect genetic resources, and establish systems for environmental impact assessments. Regulation 4 states that a person shall not engage in any activity that relates to access to biological resources and biodiversity that may have any adverse impact on any ecosystem, lead to the introduction of any exotic species, lead to the unsustainable use of natural resources or operate a facility for the conservation of any species outside its natural habitat, without a valid Environmental Impact Assessment License issued by the Authority.

The proponent has undertaken a Floral Biodiversity Assessment and shall ensure planting of indigenous trees and grass is planted within the designated spaces to enhance the biodiversity value of the site.

3.3.9 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 non-organic 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.

3.3.10 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 proposed incorporating climate change adaptation and mitigation measures such as use of solar energy, rainwater harvesting, use of water & energy-efficient fixtures, and proper waste management through reuse & disposal by a licensed waste transporter.

3.3.11 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 obtain an authorization permit from WRA before drilling the borehole.

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 architectural plans for the proposed project have been submitted to NCCG for approval before construction begins.

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 architectural plans for the proposed project have been submitted to NCCG for approval before construction begins.

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 mosquitoes, 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 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 (NCCG)

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 obtain all requisite permits and approvals including architectural/ structural drawings approvals and and notify NCCG prior to commencement of construction works.

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 certification of 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 monitors workers' health through examinations to identify potential work-related health risks.
v. Advisory and Training on Occupational Safety and Health to employers and employees.

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 shall 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.

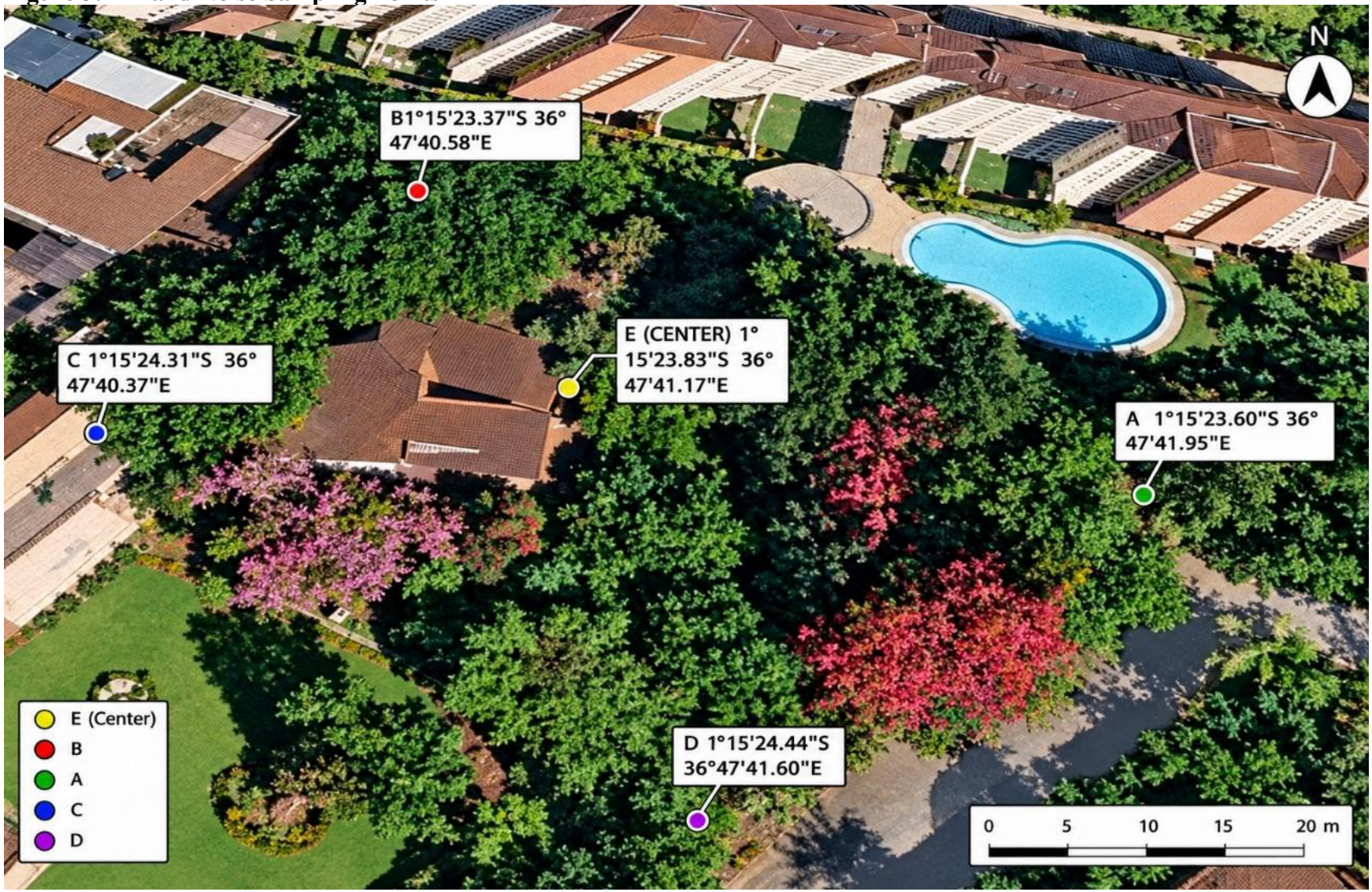
4.1.2 Ambient Air Quality

The site was evaluated for ambient air pollutants and suspended particulate matter on 2nd October 2026. The weather conditions were predominantly cloudy and sunny which were generally suitable for daytime 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 five (5) sampling locations as tabulated in Table 3 and as shown in Figure 3.

Table 3: Air and Noise Sampling Locations

Sample Code	Longitude	Latitude	Media
A	1°15'23.60"S	36°47'41.93"E	Air and Noise
B	1°15'23.37"S	36°47'40.58"E	Air and Noise
C	1°15'24.31"S	36°47'40.37"E	Air and Noise
D	1°15'24.44"S	36°47'41.60"E	Air and Noise
E	1°15'23.83"S	36°47'41.17"E	

Figure 3: Air and Noise Sampling Points



Source: Ambient Air Quality and Noise Measurement Report , 2026

The results of the ambient air quality within the property boundary are presented in Table 4 below:

Table 4: 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	0.027	23	1	506	0.014
AQ/N2	0.017	26	0	401	0.033
AQ/N3	0.018	20	0	402	0.016
AQ/N4	0.003	21	0	401	0.000
AQ/N5	0.003	23	1	402	0.000
TWA OELs/ Guidelines: (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, 2026

The survey shows low pollutant levels across all sampling points except for PM 2.5. The parameters are as detailed below;

i. Formaldehyde (HCHO)

The HCHO levels ranged from 0.003 to 0.027 mg/m^3 all well below the NIOSH ceiling of 0.1 mg/m^3. The results indicate that formaldehyde was not a significant ambient air quality concern during the monitoring period. The relatively higher concentration of 0.027 mg/m^3 may reflect localized conditions around the site entrance and surrounding activities. Nevertheless, the measured concentration remained well below the NIOSH ceiling reference value of 0.1 mg/m^3.

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

The concentrations for $PM_{2.5}$ ranged from 20 to 26 $\mu g/m^3$ which were above the WHO 24-hour guideline of 15 $\mu g/m^3$. The elevated $PM_{2.5}$ readings are relevant to the existing and proposed activities at the site. The presence of an old building planned for demolition, drilling machines and associated activities may contribute to localized particulate matter. Other factors including localized site activities, air movement, exposed or disturbed surfaces, nearby urban activities and background particulate matter may contribute to the observed variation between monitoring points.

iii. Carbon Monoxide (CO)

The concentrations for CO ranged from 0 to 1 ppm which are substantially below the OSHA 8-hour reference value of 35 ppm. The relatively low CO concentrations indicate that carbon

monoxide was not a significant ambient air quality concern during the monitoring period. The measurable concentrations may reflect localized background combustion sources, including vehicular activity and other surrounding urban activities.

iv. Carbon Dioxide (CO_2)

The levels of CO_2 were found to be between 401 to 506 ppm which are within the ASHRAE's 1,000 ppm recommendation indicating good air exchange. The higher concentration at Point A may reflect localized conditions around the site entrance and surrounding activities. 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 0.000 to 0.033 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 or paints. These levels comply with occupational health guidelines and minimize the risk of headaches, respiratory irritation, and other health issues commonly associated with VOC exposure.

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 results of the noise level measurements within the site are presented in table 5 below:

Table 5: Noise Quality Measurements

Sampling Points	Measured Noise Level Leq dB(A)	TLV dB(A)	Remarks
A	49.7	55	**Within limits**
B	47.8	55	**Within limits**
C	47.5	55	**Within limits**
D	44.9	55	**Within limits**
E	54.7	55	**Within limits**

Source: Noise Quality Measurement Report, 2026

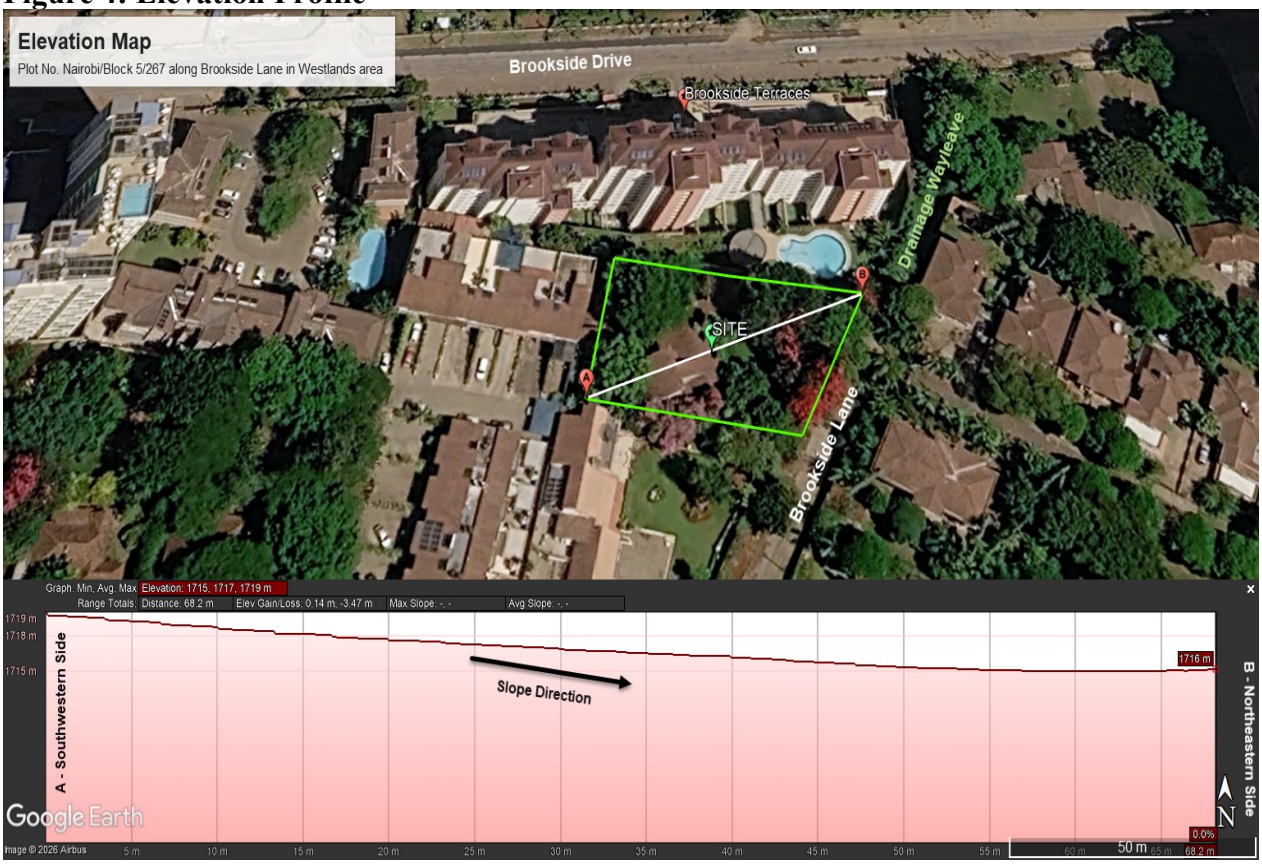
The noise levels obtained were compared with the guidelines provided by the First Schedule of the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations 2009. The measurements taken at the sampled points indicate that the noise levels at all locations were within the recommended threshold limit values (TLV) of 55dBA during the daytime.

The noise levels were found to be within the recommended threshold levels 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 general project area gently slopes eastwards directing surface runoff toward the *Kibarage River* with elevations ranging between *1730 and 1700 meters above sea level*. The site is characterized by gently undulating terrain and lies at an altitude of approximately *1,717 meters above sea level*. The highest point is located on the south-western side at 1719 meters above sea level while the lowest point is situated on the north-eastern side (Brookside Lane) at 1715 meters above sea level resulting in a differential height of 4 meters.

Figure 4: Elevation Profile



Source: Google Earth, 2026

4.1.5 Geology and Soils

A geotechnical survey was undertaken and the subsurface profile of the site indicates that the property is characterized by clay soils up to a depth of 3.8 meters below the Original Ground Level (OGL) followed by a transitional layer of completed and highly weathered trachyte to about 12 meters underlain by trachyte rock to a depth of 30 meters below ground level. 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 NCCG. The estimated volume of excavation will be approximately *16,700 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 site **does not** border any river or stream. The closest surface water body is *Kibarage River* at a distance of approximately 200 meters north of the project site. The proponent proposes to drill a borehole to abstract groundwater to supplement the county water supply line. The area is located in an area with medium to high groundwater potential. The proponent shall obtain an *authorization permit* from the WRA and a *separate EIA License* from NEMA before drilling works begin.

4.2 BIOLOGICAL ENVIRONMENT

4.2.1 Flora

The floral assessment was undertaken on 2nd October 2026 and recorded 68 individual plants comprising 29 species including 42 trees (18 species) and 26 shrubs (11 species). The assessment was conducted through a site walk-through and visual identification with species identified using morphological characteristics and their conservation status referenced against the IUCN Red List of Threatened Species. The vegetation is predominantly composed of mature trees and exotic ornamental shrubs, characteristic of a managed residential landscape. Indigenous vegetation accounts for 10 individuals (14.7%) representing five species (17.2% of the recorded species richness). No species classified as *Vulnerable, Endangered or Critically Endangered* were recorded. However, the predominance of exotic species and the limited representation of young trees highlight opportunities to enhance indigenous vegetation and improve habitat value.

Tables 6 and 7 list the trees and shrubs/ornamental species recorded within the site.

Table 6: Tree Species Inventory

SN	Common Name	Scientific Name	Total	% of trees	Origin	IUCN
1	Queensland umbrella tree	*Heptapleurum actinophyllum (syn. Schefflera actinophylla)*	6	14.3	Exotic	LC
2	Illawarra flame tree	*Brachychiton acerifolius*	4	9.5	Exotic	LC
3	East African sandalwood	*Osyris lanceolata*	4	9.5	Indigenous	LC
4	Cook's pine	*Araucaria columnaris*	4	9.5	Exotic	LC
5	Mango	*Mangifera indica*	4	9.5	Exotic	DD
6	Umbrella tree	*Terminalia mantaly*	3	7.1	Exotic	LC
7	Woolly nightshade	*Solanum mauritianum*	2	4.8	Exotic (invasive)	LC
8	Bangalow palm	*Archontophoenix cunninghamiana*	2	4.8	Exotic	LC
9	Llora sangre	*Bocconia frutescens*	2	4.8	Exotic	LC
10	Avocado	*Persea americana*	2	4.8	Exotic	LC
11	African fern pine	*Afrocarpus gracilior*	2	4.8	Indigenous	LC
12	Loquat	*Eriobotrya japonica*	1	2.4	Exotic	LC
13	Spineless yucca	*Yucca gigantea*	1	2.4	Exotic	NE
14	African pencil cedar	*Juniperus procera*	1	2.4	Indigenous	LC
15	Corn plant	*Dracaena fragrans*	1	2.4	Indigenous	LC
16	Guava	*Psidium guajava*	1	2.4	Exotic	LC
17	Silky oak	*Grevillea robusta*	1	2.4	Exotic	LC
18	Thika palm	*Filicium decipiens*	1	2.4	Exotic	LC
		Total	**42**	**100.0**		

IUCN: LC = Least Concern; DD = Data Deficient; NE = Not Evaluated.

Table 7: Shrub and Ornamental Species Inventory

SN	Common name	Scientific name	Total	% of shrubs	Origin	IUCN
1	Keji beling	Strobilanthes crispa	7	26.9	Exotic	NE
2	Copper leaf	Acalypha wilkesiana	4	15.4	Exotic	LC
3	Palm lily	Cordyline fruticosa	3	11.5	Exotic	LC
4	Yesterday-today-and-tomorrow	Brunfelsia pauciflora	2	7.7	Exotic	LC

5	Hibiscus	Hibiscus articulatus	2	7.7	Indigenous	LC
6	Golden dewdrop	Duranta erecta	2	7.7	Exotic	LC
7	Kei apple	Dovyalis caffra	2	7.7	Exotic	LC
8	Zebra plant	Aphelandra squarrosa	1	3.8	Exotic	NE
9	Bougainvillea	Bougainvillea spinosa	1	3.8	Exotic	LC
10	Garden croton	Codiaeum variegatum	1	3.8	Exotic	LC
11	Shell ginger	Alpinia zerumbet	1	3.8	Exotic	DD
		Total	**26**	**100.0**		

Plate 8: Vegetation within the Site



Source: Floral Biodiversity Assessment Report, 2026

4.2.2 Fauna

Fauna Assessment was undertaken to document animal species within the project site and its immediate environs. 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. The faunal species observed within the project site include small invertebrates such as *earthworms, ants, grasshoppers, butterflies and spiders; vertebrates such as monkeys, lizards and birds; and domestic animals such as cats and dogs*. 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 setbacks and designated open spaces, 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 Upper Parklands Sub-Location, Parklands Location, Westlands Sub-County, 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 Westlands had a population of 308,854. Westland's population is projected to rise to 354,695 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 500 meters from the site include *Sarit Centre Mall and Westgate Shopping Mall* which houses supermarkets, bar & restaurant, leisure and recreation areas, merchandise, services, and financial institutions.

Some of the facilities located within the shopping malls include *Carrefour Sarit Center, Text Book Centre, Hotpoint Appliances – Sarit, Java House - Sarit Centre, Artcaffé Restaurant, The Library Restaurant, Acacia Pharmacy, and LC Waikiki Sarit Centre* among others. Other socioeconomic facilities include financial institutions such as *KCB Sarit Centre, Stanbic Bank Westgate, and ABSA Bank Prestige Centre* as well as light industrial facilities such as *Shell Select - Waiyaki Way and Ola Energy Westlands 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 educational facilities found in the area within a radius of 1,000 meters from the project site include; *Westlands Primary School, Brookside Preparatory School, Muguga Green Primary School, MLC Schools, My School (Montessori) Ltd*, *The Aga Khan High School - Nairobi*. 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 within a radius of 1,000 meters from the project site include churches, temples and mosques. Some of the institutions include *Westlands Mosque, Sri Balaji Temple, Nairobi International Christian Church, AIC Westlands, ACK St. Marks Westlands.* 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 within a radius of approximately 1,000 meters from the project site and include; *Westlands Hospital (Level 4) The Mater Hospital (Westlands), and Meridian Medical Centre-Westlands.* 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 for any potential negative impacts. The potential receptors of the anticipated impacts will include the following:

i. The local community including the immediate neighbours within a radius of 250 meters from the site including *high & low-density residential developments and commercial developments.*
ii. The National Government Administration Officers *(NGAO).*
iii. Government agencies and development institutions *(Nairobi City Water and Sewerage Company, Kenya Power and Lighting Company, and Water Resources Authority).*
iv. Institutions within the local area at a radius of 250 meters from the site such as *Brookside Preparatory 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 8: 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.

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

Table 9: 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.	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.	Stormwater 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 the way for the construction of the substructure. 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 NCCG before the excavation works begins.
ii. Control excavation works especially during rainy/wet conditions.
iii. Use standard equipment for the excavation works to minimize excessive ground disturbance, soil loosening, and vibration.
iv. Stabilize exposed surfaces promptly through compaction, grading, and levelling to reduce susceptibility to erosion by wind and surface runoff.
v. Install adequate sediment and erosion control measures such as silt traps and sediment fencing to prevent sediment discharge into the drainage system.
vi. Manage the stockpiles of excavated soils within the site before final disposal.
vii. Avoid unnecessary movement of soil materials from the site.
viii. Maintain 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 by planting indigenous trees and grass within the designated open spaces.

5.2.2 Air Pollution

The proposed project is located in a *Residential and Commercial 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 showed elevated levels of $PM_{2.5}$ concentrations as a result of localized site activities, air movement, exposed or disturbed surfaces, nearby urban activities, and background particulate matter.

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, café, convenience store, generator room, 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 exit points to prevent tracking of dirt onto the access roads.
vi. Use low-emission or hybrid construction machinery 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, corridors, and sanitary facilities to arrest fugitive dust and avoid foul smell.

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

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

5.2.3 Noise and Excessive Vibrations

The baseline study on ambient noise levels within the property revealed that all 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 construction equipment; transportation of materials; and operation of the generator among others. 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, commercial spaces, 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 base scenario of the project area road network indicates stable traffic flow with minimal restrictions and disruptions to the drivers while the 2034 future scenario reflects increased pressure from traffic growth. The construction of the proposed development will have a marginal impact on the existing road network conditions as the abutting network is expected to deteriorate with or without the proposed development. The project site is located in an area that is largely occupied by residential and commercial 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 development.

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 to prevent obstruction along the access road.
v. Install traffic control/warning signs to inform the motorists and public about the potential hazards.
vi. Provide separate dedicated entry and exit lanes with sufficient throat length to accommodate at least three vehicles, reducing queue formation at the access point.
vii. Provide designated internal areas for pick-up and drop-off activities to prevent roadside stopping and circulation conflicts within the development.
viii. Install automated double-lane vehicle screening with appropriate security controls to minimise delays and improve throughput at the entry.

ix. Provide a dedicated pedestrian gate at the development frontage to promote safe and convenient pedestrian access
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.

5.2.5 Solid Waste

Solid waste generation during the construction and operational phases of the project is anticipated to have a negative impact. The waste streams including construction waste 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. 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.
x. 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. 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–Sewage Treatment Plant (STP) for pre-treatment of liquid waste before final discharge into the existing conventional sewer system.
ii. Extend 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 NCCG 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. 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 connection of the proposed development to the main water supply 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 to supplement the surface and subsurface water sources.
iv. Provide water tanks for 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. Incorporate a greywater reuse system for non-potable use such as 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 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 from NCCG before commissioning the development.
iii. Ensure all workers are covered under statutory insurance schemes (SHIF) and provided with adequate Work Injury Benefits Act (WIBA) insurance cover and remit appropriate fees.
iv. Obtain a third-party liability insurance before commencement of construction works, covering injuries, losses or property damage that may arise from construction activities.
v. Provide adequate and appropriate Personal Protective Equipment (PPE) (safety boots, helmets, gloves, goggles, earmuffs, masks, reflective jackets) and enforce mandatory use.
vi. Maintain fully equipped first aid kits on-site and ensure availability of trained first aiders at all times.
vii. Install clear health and safety signage (warning, mandatory, and emergency signs) at strategic locations across the site.
viii. Undertake the health and safety audit for the proposed development by a registered safety advisor every twelve months.
ix. Adopt a suitable Emergency Response Plan (ERP) to manage the occurrence of anticipated hazards during the project cycle.
x. Engage a full-time Health and Safety Officer (HSO) throughout the construction phase.
xi. Establish and operationalize a Health and Safety Committee in accordance with OSHA requirements.
xii. Conduct site induction training for all workers before engagement and refresher trainings periodically.

xiii. Ensure safe excavation practices including shoring, benching, and slope stabilization to prevent collapse.

xiv. Hold daily toolbox talks to address task-specific risks and reinforce safe work practices.

xv. Provide adequate sanitation facilities, clean and potable drinking water, and maintain high standards of hygiene for all workers.

xvi. Ensure any food vendors on-site comply with public health and hygiene standards.

xvii. Undertake weekly safety inspections and monitoring by the HSO with documented reports and follow-up actions.

xviii. Sensitize workers on occupational health and social issues including HIV/AIDS, communicable diseases, and substance abuse.

xix. Display and maintain updated emergency contact information (police, fire, ambulance) at accessible locations.

xx. Ensure compliance with the Occupational Safety and Health Act (OSHA), 2007 and all relevant subsidiary legislation.

xxi. Obtain and maintain valid food handler certificates for the cafe from the NCCG Public Health Department.

xxii. Install physical barriers and controlled access systems around the swimming pool to prevent unauthorized access, especially by children.

xxiii. Develop and display a Swimming Pool Safety Plan at the pool entrance, including rules, emergency procedures, and supervision requirements.

xxiv. 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 subject plot is currently secured by a combination of a shared masonry wall and a live fence complemented by a gated entrance with a guardhouse manned by licensed security personnel at all times. There is a potential risk of security concerns 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 a 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. Engage food vendors to provide lunch within the site to minimise loitering of workers which may pose security threat to the neighbours.
viii. Install motion sensors and intrusion detection systems along the perimeter and critical zones.
ix. 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 Stormwater Drainage

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.

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.
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. Routine inspection and maintenance of the existing 6-meter-wide drainage wayleave.
viii. Undertake a comprehensive landscaping exercise after the construction phase by planting indigenous trees and grass within the designated open spaces to enhance infiltration and stabilise 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 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.

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 68 individual plants across 29 species consisting of 42 trees and 26 shrubs & ornamental species. During the construction, there will be clearing of vegetation and removal of topsoil to pave the way for the development. The project site is located in an area where there is high human disturbance. The floral assessment against the International Union for Conservation of Nature (IUCN) Red List of Threatened Species indicates that there were no species classified as *Vulnerable, Endangered or Critically Endangered* recorded. However, the predominance of exotic species and the limited representation of young trees highlight opportunities to enhance indigenous vegetation and improve habitat value.

Potential Mitigation Measures

i. Prepare and implement a landscape plan that integrates indigenous species, supports pollinators and excludes invasive species.
ii. Obtain a tree-cutting clearance certificate from the Nairobi County Director of Forestry before cutting down the trees.
iii. Remove *Solanum mauritianum* and monitor other potentially invasive species following the Invasive Species Management protocol.
iv. Restrict vegetation clearance and soil disturbance strictly to the project footprint to minimize ecological disturbance.
v. Undertake a comprehensive landscaping exercise after the construction phase by planting indigenous trees and grass within the designated open spaces as a tree replacement and compensation programme with a minimum 1:3 ratio for mature trees removed.
vi. Monitor and audit survival of retained and planted vegetation, invasive species control and landscape restoration.
vii. Train site staff and contractors on tree protection, invasive species and waste handling.
viii. Sensitize the residents to practice apartment gardening within their residential units.

CHAPTER SIX: GREENHOUSE GAS AND 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).

6.1.1 Construction Phase GHG Emissions

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 **16,050 tCO_2eq** per year as detailed in table 10 below;

Table 10: Construction Phase GHG Emissions Summary

Category	**Scope**	**tCO_2e**	**% of Total**
Diesel Combustion	Scope 1	1,667	10.4%
Grid Electricity - Site Facilities	Scope 2	240	1.5%
Water consumption	Scope 3	9	0.1%
Embodied Carbon - Materials	Scope 3	13,708	85.4%
Upstream Transport	Scope 3	373	2.3%
Construction Waste to Landfill	Scope 3	53	0.3%
Total Construction Phase Emissions		**16,050**	**100%**
Per m^2 GFA ($kgCO_2e/m^2$)		**503 $kgCO_2e/m^2$**	Benchmark: **800 to 1,400** $kgCO_2e/m^2$ for RC high-rise

6.1.2 Operation Phase GHG Emissions

During the operational phase, emissions will arise mainly from electricity consumption, domestic energy use, cooking, water heating, facility operations *(a swimming pool, gym, café, children's play area, residents lounge, and yoga room),* and vehicle-related emissions from residents and visitors. The estimated operational emissions are approximately **1,020 $tCO_2eq/year$** as detailed in table 11 below;

Table 11: Operational Phase GHG Emissions Summary (Annual)

Category	**Scope**	**tCO_2e/yr**	**% of Annual Total**
LPG Combustion	Scope 1	78	7.7%
Direct fuel combustion	Scope 1	27	2.6%
Refrigerant Leak	Scope 1	87	8.5%
Grid electricity	Scope 2	328	32.2%
Water Consumption	Scope 3	5	0.5%
Wastewater treatment	Scope 3	7	0.7%
Solid waste to landfill	Scope 3	44	4.3%
Resident transport	Scope 3	444	43.5%
Total Annual Operational Emissions		**1,020**	**100%**
Per m^2 GFA		**32 $kgCO_2e/m^2/yr$**	Benchmark: **40 to 90** $kgCO_2e/m^2/yr$ for tropical residential
Per unit (266 units)		**3.8 $tCO_2e/unit/yr$**	
Per capita (630 occupants)		**1.6 $tCO_2e/person/yr$**	Kenya avg: ~2.1 tCO_2e/person (excl. transport & waste)

The proposed development will contribute to cumulative GHG 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 the provisions of the Climate Change Act, 2016.

6.2.1 Specific Climate Risk Drivers

The principal climate risks identified for the project and the wider Westlands area include intense rainfall and surface flooding, basement water ingress, water scarcity, rising temperatures, wind loading and lightning. Rapid urbanization, increased impervious surfaces and pressure on existing municipal drainage infrastructure may exacerbate surface runoff and flooding. Although the site is not directly adjacent to a river and is considered to have low direct riverine flood exposure, the development's extensive paved surfaces and three-level basement, extending approximately 12 meters below ground level, present potential risks from stormwater accumulation, groundwater infiltration and water ingress into critical infrastructure.

6.2.2 Vulnerability and Quantitative Risk Assessment

The principal receptors and their sensitivity to climate-related hazards are tabulated below:

Table 12: Sensitivity Rating

Receptor	Key Sensitivity Factors	Sensitivity Rating
Residents (266 households)	High occupancy across 28 residential floors; presence of potentially vulnerable occupants; dependence on reliable water, electricity, access and thermal comfort	Moderate
Basement plant and parking	Below-grade critical infrastructure (fire pumps & switchgear) exposed to water ingress and groundwater	Moderate–High
Water supply and storage systems	High daily demand and potential interruption of municipal supply	Moderate–High
Stormwater drainage	High proportion of impervious surfaces and increased runoff generation	Moderate–High
Building structure	Approximately 102 meters high; exposure to wind and lightning	Low–Moderate

Landscaping and permeable area	Limited ground-level area available for infiltration and green infrastructure	Moderate

6.2.3 Adaptive Capacity

The adaptive capacity of the proposed development is assessed as Moderate. The development will have an established management structure and a service-charge base capable of supporting routine maintenance of drainage, water-storage, pumping and other resilience infrastructure. Standard engineering solutions are also available for basement waterproofing, stormwater attenuation, passive cooling and water-efficiency measures. However, the project's adaptive capacity is constrained by its dependence on external infrastructure particularly municipal drainage and water-supply systems.

6.2.4 Climate Change Adaptation and Mitigation Measures

The appropriate adaptation and mitigation measures proposed for the development are as tabulated below:

Table 13: Climate Change Adaptation and Mitigation Measures

Anticipated Risks	Applicable Adaptation and Mitigation Measures	Relevance
Increased Greenhouse Gas Emissions	a) Use of Green Energy Technologies	▪ The incorporation of technologies such as energy-efficient lighting, solar power, and improved insulation will help reduce the carbon footprint of the project thus promoting climate-smart development to lower emissions.
	b) Waste Management	▪ Proper solid waste management strategies such as recycling and reduction will minimize the generation of greenhouse gas emissions.
	c) Green infrastructure	▪ Comprehensive outdoor and indoor landscaping will help offset carbon emissions by acting as carbon sinks thus reducing greenhouse gas emissions.
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.
	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 of 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.
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 building line increase soil absorption and stability thus mitigating flood risks.
	c) Stormwater Management Systems	▪ The incorporation of effective stormwater management systems, including permeable pavement, landscaping and harvesting rainwater will help mitigate flooding risks.
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 promoted by the

		Act.
	b) 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. Overall, implementation of the recommended adaptation and mitigation measures, supported by routine inspection, maintenance and monitoring of stormwater systems, water consumption, storage facilities and critical building services, is expected to improve the development's resilience to climate-related hazards and reduce residual risks during its operational life.

(Attached is the 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. Directly affected persons including the landowners, tenants, project-affected persons (PAPs), adjacent residents and affected businesses within a radius of 250 meters from the site such as *Brookside Terraces and Brookside Park.*
ii. Public institutions who include the lead agencies and local administration *such as NGAO and Nairobi City County.*

iii. Social institutions including schools, hospitals, religious institutions, and community halls such as *Brookside Preparatory School.*

iv. Private sector comprising businesses, utilities, contractors, suppliers, developers, service providers and infrastructure operators such as *and NCWSC, KPLC, and Nubly Technologies.*

v. Special interest groups who included women, youth, residents' associations and sector-specific associations such as *Westlands Association.*

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 PAPs;

i. Public Meetings

Two public consultative meetings were held at the project site on Tuesday, 6th October 2026 and Thursday, 15th October 2026 where the local community and relevant stakeholders including the government sector representatives participated. The meeting provided the surrounding community, Project Affected Persons (PAPs), and other identified stakeholders with information on the proposed development and an opportunity to raise their views, concerns, questions and recommendations.

ii. One-on-One Interviews and Consultations

One-on-one consultations were undertaken with relevant institutions and project stakeholders including the Nairobi City Water and Sewerage Company (NCWSC) and Kenya Power and Lighting Company (KPLC) to obtain relevant information and technical data concerning existing infrastructure and services in the project area. Consultations were also undertaken with other project consultants to obtain technical inputs relevant to the assessment of the proposed development.

iii. Invitations, Notices, and Follow-up Reminders

Onsite public notices were placed within the vicinity of the project site on 29th September 2026 and 7th October 2026 while invitations were circulated to households, lead agencies, and interested parties on the same dates. The public notices were also published in the Standard Newspaper on the same dates to notify the wider public of the proposed development and public participation meeting venue, date and time. Follow-up reminders were issued to encourage

attendance and participation with some residents providing preliminary views and concerns during the household outreach.

Plate 9: On-site Public Notices



Source: Fieldwork, 29/09/2026 and 07/10/2026

iv. Administration of Questionnaires

Questionnaires were administered to the PAPs and stakeholders to obtain site-specific views, concerns and recommendations regarding the proposed development. Where individuals were unavailable during the consultation exercise, they were provided with an alternative opportunity to submit written comments and feedback. The stakeholders were informed of the designated location/method for submission of the written comments to facilitate their participation even where they could not attend the meetings or complete the questionnaires at the time of engagement.

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:

Table 14: Stakeholders' Concerns and Responses

SN.	Concern	Response
1.	Provision of Setbacks	▪ The development will observe 3-meter-wide setbacks on upper floors and 1.5-meter-wide setbacks for the basement levels.
2.	Potential damage to the neighbouring properties during excavation	▪ Adopt non-intrusive excavation methodology to minimize potential damage to adjoining properties. ▪ Monitoring of loose soil and any ground movement will be undertaken.

		▪ Walling, anchor grouts, mesh and shotcrete will be used as excavation support system ▪ Monitoring of underground water consistently will be undertaken and dewatering where necessary. ▪ No blasting of rocks will be carried out within the site.
3.	Proposed depth of excavation from the existing natural ground level	▪ Approximately nine (9) to twelve (12) meters below the existing ground level measured from the access road level.
4.	Adequacy of the existing road network to accommodate the anticipated traffic	▪ The existing 12-meter-wide access road is adequate to accommodate 5.4-meter-wide carriageway, storm drains, and a 1.5-meter-wide pedestrian walkway. ▪ Traffic Management Plan (TMP) had been developed to guide traffic flow throughout the project cycle. ▪ Materials will be transported during off-peak hours ▪ Developer to stagger delivery of materials
5.	Adequacy and capacity of the existing water supply as well as the sewerage infrastructure	▪ Developer will construct a mini-STP for pre-treatment before final discharge into the sewer system ▪ Developer to harvest rainwater and drill a borehole as alternative sources of water
6.	Potential loss of biodiversity, particularly birds and monkeys inhabiting trees on the property	▪ The site is characterized by 42 trees which will be cleared subject to acquisition of permit from County ▪ The developer will plant at least sixty (60) trees within the designated open spaces ▪ The developer to donate the young trees and plants to the local community/institutions as part of the greening strategy
7.	Stormwater	▪ Developer will harvest rainwater and engineer the site to drain excess stormwater into the existing 6-meter-wide drainage wayleave.
8.	Location of the generator room to prevent fumes to the neighbors	▪ Generator will be located on the ground floor near the access road
9.	Employment opportunities to the local community	▪ Developer will provide job opportunities to locals in line with the regulations in liaison with the office of the chief.

The EIA Study Report has 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 **266 residential duplex apartments** to cater for the rising demand for housing units in the area. The proponent has obtained a Change of Use approval from *Single Dwelling Unit to Commercial cum Residential Apartments* from 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 more 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 15, 16, and 17 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, NCCG, 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 15: 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 NCCG before the excavation works begin	▪ Excavation permit	Before excavation	Proponent NCCG	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
		▪ Use suitable structural support measures including temporary retaining systems and slope stabilization techniques	▪ Monitoring records	Excavation period	Contactor	BQ Cost
		▪ 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

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Install adequate sediment and erosion control measures to prevent sediment discharge into the drainage system	▪ Sediment and erosion control measures	Continuous	Contractor	BQ Cost
		▪ Control the stockpiles within the site	▪ Well-managed stockpiles	Continuous	Contractor	0
		▪ Maintain equipment and vehicles away from the site to avoid soil contamination	▪ Soil analysis tests	Continuous	Proponent Contractor	20,000
		▪ Provide adequate sanitary conveniences and connect to the existing conventional sewer line to prevent soil contamination by untreated effluent	▪ Monitoring records	Continuous	Proponent Contractor	0
		▪ Landscaping within the designated 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 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

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Undertake ambient air quality monitoring within the site	▪ Air quality measurements	Annually	Contractor	40,000
Noise and Excessive Vibrations	Nuisance and adverse health impacts from high noise and vibration levels from machinery and vehicles	▪ Construction activities will be carried out on weekdays between 0800hrs to 1800hrs and on Saturday only between 0800hrs to 1300hrs	▪ Work schedule records	Continuous	Proponent Contractor	0
		▪ 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 NCCG	▪ Site toilet permit	Before construction	Proponent NCCG	10,000
		▪ Construct an internal reticulation system and mini-STP for liquid waste management within the property.	▪ Reticulation System and STP	Before Construction	Proponent Contractor	BQ cost
		▪ Extend connection of the proposed development to the existing conventional sewer system	▪ Sewer connection permit	During Construction	Proponent Contractor NCWSC	BQ cost

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Provide adequate sanitary conveniences to the workers	▪ Number of sanitary conveniences	Before construction	Proponent Contractor	BQ cost
		▪ Ensure the sanitary conveniences are kept clean at all times	▪ Cleaning records	Continuous	Proponent Contactor	BQ cost
		▪ 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	▪ A 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
		▪ 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 connection of the proposed development to the main water supply	▪ Water Connection Permit	During Construction	Proponent NCWSC	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 Workers	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	▪ Install an on-site transformer to supply energy to the proposed development	▪ Electricity connection permit	Before construction	Proponent 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 Density	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	Continuous	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
		▪ 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
		▪ Obtain insurance coverage for all workers and third-party liability insurance covering accidents, injuries, losses or property damage	▪ Availability of insurance covers (SHIF and WIBA etc	Annually	Contractor	BQ cost
		▪ 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

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Keep records of public emergency service telephone numbers	▪ Presence of the emergency telephone numbers	Continuous	Contractor	0
		▪ 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
	Security Risks	▪ 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 NCCG	▪ Hoarding permit	Annually	Proponent NCCG	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

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Undertake comprehensive soft landscaping by planting indigenous trees and grass	▪ Number of trees planted	After Construction	Contractor	BQ cost
Vegetation	Loss of Vegetation	▪ Prepare and implement a landscape plan s before site clearance	▪ Landscape Plan	Before construction	Proponent Contractor	10,000
		▪ Remove *Solanum mauritianum* following the Invasive Species Management protocol	▪ Species management records	Continuous	Proponent Contractor	BQ cost
		▪ Transplant the conservation-sensitive species such as *hibiscus fragilis* to the riparian buffer zone	▪ Number of species transplanted	Before construction	Proponent Contractor	BQ cost
		▪ Restrict vegetation clearance strictly to the project footprint to minimize ecological disturbance	▪ Vegetation clearance records	Before construction	Proponent Contractor	0
		▪ Obtain a tree-cutting clearance certificate before cutting down the trees	▪ Tree-cutting clearance certificate	Before construction	Proponent NCC	BQ cost
		▪ Train the workers on tree protection, invasive species and waste handling.	▪ Training records	Continuous	Proponent Contractor	BQ cost
		▪ Undertake comprehensive landscaping by planting indigenous trees and grass within the open spaces	▪ Number of trees planted	Before operation	Contractor	BQ cost
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 16: Environmental Management Plan during Operation Phase

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
Stormwater drainage	Flooding	▪ Regular maintenance of drainage channels, wayleave, 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
		▪ 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
		▪ Regular maintenance of the foul water system at the premises to prevent clogging & forestall breakdowns and ensure continued efficiency.	▪ Maintenance records	Continuous	Proponent Management	O&M Costs
		▪ Regular cleaning of the sanitary conveniences	▪ Cleaning records	Daily	Proponent	0

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ 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 a 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
		▪ 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
		▪ Use automated irrigation systems with soil moisture sensors to prevent overwatering landscaped areas.	▪ Presence of automated irrigation systems	Before Operation	Proponent Management	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 indoor air pollution	▪ Switch off machinery/equipment and lights when not in use	▪ Monitoring records	Continuous	Management	0
		▪ 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

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
Vegetation	Loss of biodiversity value within the site over time	▪ Monitor and audit survival of planted vegetation and landscape restoration.	▪ Monitoring records	Continuous	Proponent	O&M Costs
		▪ Train workers and residents on tree protection, invasive species, and waste handling.	▪ Training records	Continuous	Proponent	O&M Costs
		▪ Sensitize the residents to practice apartment gardening within their residential units	▪ Sensitization Records	Annually	Proponent Residents	0
Health and Safety	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
		▪ Obtain and maintain valid food handler certificates for the restaurant	▪ Valid food handler certificates	Annually	Management	O&M Costs
		▪ Develop and display a Swimming Pool Safety Plan at the strategic place	▪ A Swimming Pool Safety Plan	Before operation	Proponent	O&M Costs
		▪ Maintain pool water quality through regular disinfection, filtration, and pH control, in line with public health standards to prevent waterborne diseases.	▪ Pool Maintenance Records	Before operation	Proponent	O&M Costs
		▪ 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	▪ 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

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
	developments	▪ 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 17: 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 NCCG	▪ Demolition permit	Before Demolition	Proponent NCCG	30,000
		▪ Use of low-emission demolition machinery	▪ Type of machinery used	Continuous	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	▪ Provide adequate and appropriate PPE such as earmuffs and ear plugs to the workers	▪ Presence and usage of PPE	Continuous	Proponent Contractor Workers	20,000

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
	noise and vibration levels	▪ 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 of solid wastes	▪ 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 refuse collection workers	▪ Presence and usage of PPE	Continuous	Contractor	20,000
		▪ 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

Aspect	Potential Impact	Mitigation Measure(s)	Monitoring Indicators	Timeframe	Responsibility	Estimated Cost (KShs)
		▪ Provide an adequate supply of wholesome drinking water	▪ Availability of Drinking water	Continuous	Proponent Contractor	100,000
	Security Risks	▪ 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 Westlands 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 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.
ii. 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.
iii. That the proponent shall obtain all the requisite permits/certificates and licenses before the construction begins and adhere to the conditions therein.

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

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

vi. 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.

vii. 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 TOR Approval letter
4. Copy of expert practicing licenses
5. Copy of Architectural Drawings
6. Copy of Ambient Air Quality Report
7. Copy of the Environmental Noise Level Measurement Report
8. Copy of Traffic Impact Assessment Report
9. Copy of the Geotechnical Investigation Report
10. Copy of the Greenhouse Gas (GHG) Emissions and Climate Change Vulnerability Assessment Report
11. Copy of the Floral Biodiversity Assessment Report
12. Copy of NCWSC Area Water Supply and Sewerage Network Map
13. Copy of Minutes, Attendance Sheets, and Photographs of the Public Meetings
14. Copy of Invitation Letter and Onsite Notice of the Public Meetings
15. Copy of the Standard Newspaper Adverts
16. Copy of the Bill of Quantities