

ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT FOR THE PROPOSED
APARTMENTS DEVELOPMENT ON PLOT L.R. No NAIROBI BLOCK 3/249 ALONG
CHURCH ROAD, OFF RAPHTA ROAD, NAIROBI COUNTY



VOLUME I: FINAL EIA STUDY REPORT

PROJECT PROPONENT
ZAIN PROPERTIES LTD
P.O. BOX 22403 - 00505
NAIROBI

SEPTEMBER 2026

FACT SHEET

PROJECT NAME	PROPOSED APARTMENTS DEVELOPMENT
PROJECT PROPONENT	ZAIN PROPERTIES LTD P.O. BOX 22403 - 00505 NAIROBI
REPORT	ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT Volume I: Environmental Impact Assessment Study Report Volume II: Annexes /attachments
PROJECT COMPONENTS	● Building Configuration: 2 Basement Parking Levels + Ground Level Retail/Parking + 2 Mezzanine Parking Levels + 12 Typical Apartment Floors + 4 Typical Duplex Apartment Floors (Lower & Upper Levels) + Rooftop Amenities & Padel Court. ● Ground Floor Uses: Mini Mart, Pharmacy, Co-working space, Cafe, Outdoor Eating Area, Reception/Lift Lobby, Washrooms, Entrance Drop-off, Sentry, Landscaping, and Water Features. ● Residential Unit Breakdown: ❖ Typical Apartment Floors (12 Floors): ❖ 16 units per floor (Total = 192 units): ❖ Unit 01 & 03: 2 Bedroom Premium (125 sq.m) ❖ Unit 02: 1 Bedroom Premium (60 sq.m) ❖ Unit 04 & 05: 1 Bedroom (54 sq.m & 56 sq.m) ❖ Unit 06: 1 Bedroom (64 sq.m) ❖ Unit 07 & 09: 2 Bedroom (95 sq.m) ❖ Unit 08 & 10: 1 Bedroom Premium (60 sq.m & 56 sq.m) ❖ Unit 11, 12, 13, 14: Studio (36 sq.m each) ❖ Unit 15 & 16: Mini 1 Bedroom (40 sq.m each) ● Duplex Apartment Floors (4 Lower + 4 Upper Levels): Multi-bedroom Loft Duplex Apartments. ● Rooftop Amenities: Landscaped Garden, Infinity Pool, Deck, Steam Room, Sauna, Pilates Room, Recovery Room, Lift Lobby, and a Padel Court. Total = 272 Units

PROJECT COST AND PROJECT DURATION	KSH. 1,136,724,238.65 Project to take 18 months to complete.
PROJECT SITE LOCATION & FOOTPRINT	Plot L.R. No NAIROBI BLOCK 3/249 along Church Road, off Raphtha Road, Nairobi County GPS Coordinates: 1°15'54.1"S 36°47'15.7"E or -1.265017, 36.787688 PLOT SIZE: 0.1931 Ha (1,931 sq.m)
TERMS OF REFERENCE NEMA APPROVAL REFERENCE NUMBER	REF NO.: NEMA/ENVIS/EIA/TOR/00707 License No: NEMA/ENVIS/EIA/TOR/Approval_0310

DOCUMENT CERTIFICATION

Assignment: Environmental Impact Assessment Study of the Proposed Apartments Developments on Plot L.R. No. NAIROBI BLOCK 3/249 along Church Road, Off Raphtha Road, Nairobi County.

We, the undersigned, certify that the particulars in this report are correct and righteous to the best of our knowledge.

Signed by EIA Experts

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Signature



Date 17th September, 2026

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Signature



Date 17th September, 2026

PROJECT PROPONENT

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NAIROBI

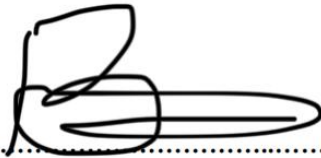
Signature..........Date.....

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ACRONYMS AND ABBREVIATIONS

CCTV	Closed Circuit Television
CBD	Convention on Biological Diversity
EA	Environmental Audit
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EMMP	Environmental Management and Monitoring Plan
EHS	Environmental Health and Safety
IUCN	International Union for Conservation of Nature
GIS	Geographical Information System
GHG	Green House Gases
GOK	Government of Kenya
GPS	Global Positioning System
HIV/AIDs	Human Immunodeficiency Virus/Acquired Immune Deficiency
HVAC	Heating, Ventilation and Air Conditioning
HSE	Health Safety and Environment
IFC	International Finance Corporation
INL	International Narcotics And Law Enforcement Affairs
KMD	Kenya Meteorological Department
KPLC	Kenya Power and Lighting Company
KRA	Kenya Revenue Authority
KSHS	Kenya shilling
KFS	Kenya Forest Service
MSDS	Material Safety Datasheets
NCA	National Construction Authority
NET	National Environmental Tribunal
NEMA	National Environment Management Authority
NEAP	National Environmental Action Plan
NEP	National Environment Policy
NGO	Non-Governmental Organization

NPEP	National Poverty Eradication Plan
NCWSC	Nairobi City Water and Sewerage Company (NCWSC)
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
SWM	Solid Waste Management
INLUG	Integrated National Land-use Guidelines
TOR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
WRA	Water Resources Authority
WSP	Water Service Provider
WIBA	Work Injury Benefits Act
WWTP	Waste Water Treatment Plant
mm	Millimeter
m	Meter
km	Kilometer
m³	Cubic metre
m³/hr-	Cubic metre per hour
m/hr-	Metre per hour
M³/day	Cubic meter per day
Sq.M	Square Meter

EXECUTIVE SUMMARY

Project Overview

The proposed project comprises a high-rise residential and ancillary commercial apartment development on L.R. No. NAIROBI BLOCK 3/249, located along Church Road, off Raphta Road, within Nairobi City County. The site measures approximately 0.1931 hectares (1,931 m²) and is located at approximately 1°13'34.2"S, 36°43'33.4"E (-1.2262, 36.7259). The project site is within an established urban area characterised by residential apartments, commercial premises, roads and supporting urban infrastructure.

Project Configuration

The development will comprise two basement parking levels, a ground floor with retail/resident-service uses and parking, two mezzanine parking levels, twelve typical apartment floors, four duplex apartment levels and rooftop amenities. The ground floor will accommodate a mini mart, pharmacy, co-working space, cafe, outdoor eating area, reception/lift lobby, washrooms, entrance drop-off, security/sentry facilities, landscaping and water features.

The residential component will comprise **272 units**, including studio apartments, one-bedroom units, premium one-bedroom units, two-bedroom units, premium two-bedroom units and multi-bedroom duplex loft apartments. Rooftop amenities will include a landscaped garden, infinity pool, deck, steam room, sauna, Pilates room, recovery room, lift lobby and padel court.

Parking will be provided within the basements, ground level and mezzanine levels. The development will incorporate lifts, accessible ramps and designated accessible parking spaces. The main project access is as indicated in the approved project documentation, with access from the Raphta Road network.

Water Supply

Water will be supplied through the Nairobi City Water and Sewerage Company (NCWSC) network, supplemented by a proposed borehole. The proponent intends to undertake borehole development and abstraction only after obtaining the necessary approvals, authorizations and water-use permit from the Water Resources Authority (WRA). The project will also incorporate rainwater harvesting and adequate storage facilities. Borehole water quality shall be tested and monitored, and abstraction shall remain within the quantity authorized by WRA.

Wastewater and Stormwater

Operational wastewater will be discharged to the available public sewer network subject to approval and connection requirements of NCWSC. No septic system is proposed where the public sewer connection is available and approved. Construction wastewater and sanitary waste will be managed through appropriate temporary facilities and licensed service providers. The project will provide an internal storm water drainage system, rainwater harvesting and controlled discharge to the approved drainage system without causing flooding, erosion or nuisance to neighbouring properties.

EIA Methodology

The EIA study involved document review, site reconnaissance, assessment of the physical, biological and socioeconomic environment, review of applicable legislation and institutional requirements, stakeholder engagement, identification and evaluation of potential impacts, assessment of project alternatives and preparation of an Environmental and Social Management Plan (ESMP). The approved Terms of Reference (Reference No. NEMA/ENVIS/EIA/TOR/00707) form the basis of the assessment and were approved by NEMA on 1 September 2026.

Regulatory Context

The project is subject to the Constitution of Kenya, the Environmental Management and Co-ordination Act (EMCA), 1999 as amended, the Environmental Management and Co-ordination (Strategic and Integrated Environmental Assessments and Environmental Audits) Regulations, 2025, the Physical and Land Use Planning Act, 2019, the National Building Code, 2024, the Water Act, 2016 as amended, the Water (Resources) Regulations, 2025, the Water (Services) Regulations, 2025, the Sustainable Waste Management Act, 2022 and applicable environmental, occupational safety, public health, energy and county legislation.

Anticipated Positive Impacts

Expected positive impacts include provision of additional residential accommodation, employment creation during construction and operation, increased demand for local goods and services, enhancement of the local property and services economy, government revenue generation, improved site security and efficient utilisation of urban land.

Anticipated Negative Impacts

Potential adverse impacts include dust and air emissions, noise and vibration, excavation and soil disturbance, construction traffic, increased water and energy demand, generation of solid and liquid waste, stormwater management challenges, occupational and public safety risks, fire risks,

accidental oil and chemical spills, pressure on local infrastructure and social amenities, privacy and visual impacts on neighbouring properties, and social risks associated with a large construction workforce.

Key Mitigation Measures

Mitigation will include controlled site access and traffic management, dust suppression, covered transportation of loose materials, appropriate construction-hour controls, equipment maintenance, noise monitoring, proper waste segregation and disposal through licensed service providers, efficient water use, rainwater harvesting, WRA-compliant borehole development and abstraction, sewer connection, stormwater controls, fire safety systems, emergency preparedness, occupational health and safety management, public grievance management, landscaping and protection of neighbouring properties.

Public Participation

Stakeholder engagement and public participation have been undertaken in accordance with the applicable EIA requirements and the approved Terms of Reference. Concerns raised during consultation are addressed through the mitigation measures and stakeholder engagement commitments contained in this report. The consultation records, minutes, attendance registers, questionnaires and photographs are provided in the relevant annexures.

Environmental and Social Management Plan

The ESMP provides responsibilities, mitigation measures, monitoring indicators and implementation timeframes for construction, operation and decommissioning. The proponent and contractors will be responsible for implementing the approved ESMP and all conditions attached to the NEMA environmental licence and other statutory approvals.

Conclusion

Subject to implementation of the mitigation measures, compliance with the approved project design, acquisition and maintenance of all applicable approvals and licences, and continuous environmental and social monitoring, the proposed apartment development can be implemented within the established urban setting while managing the identified environmental and social risks. Particular attention shall be given to water availability, WRA requirements for groundwater abstraction, sewer capacity, traffic, construction safety, stormwater management and protection of neighbouring properties.

CHAPTER ONE: INTRODUCTION

1.1 Project's Objectives

- To put up residential apartments.
- To provide adequate, functional, safe and pleasant living space;
- To maximally utilize the prime piece of land;
- To generate income both for proponent and the government,

1.2 Project Justification

Nairobi and its metropolitan area continue to experience strong demand for residential accommodation due to population growth, employment concentration and ongoing urbanization. The proposed development responds to this demand by providing additional residential units within an established urban area, while incorporating parking, resident services and shared amenities. The development will be implemented subject to applicable planning, infrastructure, environmental, health and safety requirements.

The proponent therefore proposes to develop the residential apartment block along Church Road, off Raphta Road, Nairobi City County, in accordance with the approved project design and applicable development-control requirements.

1.3 Objectives of the EIA Study

1.3.1 General Objective

The general objective of the EIA study is to carry out a systematic examination of the present environmental situation within the project area to determine likely impacts of the proposed Project along Church road, off Raphta road with a view of improving the sustainability of the project.

1.3.2 Specific Objectives of the EIA Study

- a) To highlight environmental issues of the proposed project with a view to guiding policy makers, planners, stakeholders and government agencies to help them in understanding the implications of the proposed project on environmental elements within the proposed project area;
- b) To review existing legal institutional, and policy framework relevant to the proposed project;
- c) To find out impacts – both environmental and social - associated with implementation of the proposed project. with a view to suggesting mitigation measures for the negative impacts;
- d) To asses and give recommendations on the various mitigation measures to be taken to reduce possible negative impacts on the proposed piece of land for development;
- e) Analyze occupational health and safety issues associated with the proposed project;
- f) To determine the compatibility of the proposed facility with the neighboring land uses and evaluate local environmental conditions.
- g) Facilitating public meetings for the stakeholders to air their views.
- h) Identifying and contacting the project stakeholders to seek their views on the proposed project.
- i) To assess the relative importance of the impacts of alternative plans, design and sites;
- j) To generate baseline data for monitoring and evaluation of how well the proposed mitigation measures are being implemented during the project operation period;
- k) To develop an Environmental Management Plan (EMP) to guide in decision making and for future auditing;
- l) To raise stakeholder awareness on potential impacts of the project on the environment with a view to making them understand the implication of the project in their environment;
- m) To develop an EIA study report in conformity with the EMCA 1999, Environmental Management and Co-ordination (Strategic and Integrated Environmental Assessments and Environmental Audits) Regulations, 2003 and EMCA (amendment) 2015 and legislation under it; and
- n) Submission of the final EIA study report to NEMA and subsequent follow up to obtain

relevant authorization/permit in order for the project to commence.

1.4 EIA Study Methodology

The methodology used in the EIA Study included the following.

- a) A site reconnaissance and visual survey to determine the baseline information of the project area.
- b) Comparative study of the project with existing land uses in the neighborhood.
- c) Reviewing and analysis of the project documents
- d) Discussion with the proponent and the other consultants
- e) Assessment of the site to detail the various existing and likely impacts.
- f) Assessment of health and safety issues
- g) Seeking public views through interviews, public meeting and questionnaire administration
- h) Proposal of mitigation measures to minimize any negative impacts.
- i) Preparation and submission of study report to NEMA

1.4.1 Screening

Screening of the project has been undertaken in accordance with EMCA and the current Environmental Management and Co-ordination (Strategic and Integrated Environmental Assessments and Environmental Audits) Regulations, 2025. The proposed development is being assessed as a high-risk project requiring an environmental impact assessment study. A scoping study and Terms of Reference were prepared and submitted to NEMA, and the approved Terms of Reference (Ref. No. NEMA/ENVIS/EIA/TOR/00707) form the basis of this EIA Study Report.

1.4.2 Approaches to undertaking the EIA Study Process

The study methodology also comprised the following activities:

1.4.2.1 Desktop Study

The desktop study involved:

- a) Initial meetings with project architects and engineers to discuss the proposed project, including activity options under consideration;
- b) Preparation of a checklist that consisted of a simple catalogue of environmental factors, which were compared with the activities to be performed;
- c) Collection and review of baseline data, maps, reports and other relevant information on the existing environmental and social conditions of the project area;
- d) Review of existing legislation, regulation and policies relevant to the proposed project;
- e) Review of proposed project engineering designs and construction inputs, including anticipated technical processes.

1.4.2.2 Field investigations

Field investigations involved:

- a) Site walks within the project area and the neighboring areas that are within the zone influenced by the project;
- b) Taking photographs of significant aspects to assist in describing the baseline environmental and social conditions of the project area and its influence zone;
- c) Taking of the site coordinates and the area elevation;
- d) Conducting public barazas and interviews with representatives of relevant key regulatory authorities within the project area and interested and affected parties mainly within the project influence zone;
- e) Obtaining relevant documents from the authorities such as the County Government, and key authorities within the project influence zone.
- f) Filling in of the questionnaires to facilitate environmental impact data collection
- g) The aim of the field investigations was to verify information and data collected during the desktop study and to collect any new information that may have been important in the assessment of impacts and design of mitigation measures.

1.5 Terms of Reference for the EIA Study

The terms of reference for this EIA study were prepared based on the findings of screening and scoping study, field visits, and information collected from both primary and secondary sources including the information provided by the Project Proponent. The TOR (Reference Number: NEMA/ENVIS/EIA/TOR/00707) were submitted to National Environment Management Authority and approved on 1st September, 2026. *A copy of the terms of reference approval letter is attached in annex 6*

1.6 EIA Study Team

Find attached in *annex 5*.

1.7 Reporting and Documentation

This EIA study report was prepared in accordance with the Environmental Management and Coordination (Strategic and Integrated Environmental Assessments and Environmental Audits) Regulations, 2025 and Environmental Management and Coordination Act of 1999 (Amendment 2015). This EIA study report is prepared for purposes of presenting to NEMA for review, approval and licensing of the proposed project.

CHAPTER TWO: DESCRIPTION OF THE PROPOSED PROJECT

2.1 Site Location, Description and Ownership

The proposed project is located on plot L.R. No NAIROBI BLOCK 3/249 Along Church Road, Off Raphta Road, Nairobi County. The proposed site is on GPS Coordinates: 1°13'34.2"S 36°43'33.4"E or -1.2262, 36.7259. *A copy of the site location map is attached in annex 7.* The proposed site is approximately 0.2 Ha rectangular-shaped plot, with a relatively flat gradient and wholly owned by the project proponent. The site access road is tarmacked. Electricity, water and sewer lines are available along Church road, off Raphta road. Currently, the proposed site is a developed with a bungalow that will be demolished to pave way for the development. *Copies of the land ownership documents are attached in annex 3.*



Plate 1(a): Proposed Site



Plate 1 (b): Access Road (Church Road)

Plate (1a-b): The current status of the proposed site. *See more site photos attached in annex 8.*
Source: Field Survey

2.2 The Proposed Project Design

The proposed project is located on L.R. No. Nairobi/Block 3/249 along Church Road, off Raphta Road, Nairobi County.

The site measures approximately 0.1931 hectares, equivalent to approximately 1,931 square metres. The project coordinates are approximately 1°13'34.2"S, 36°43'33.4"E, equivalent to approximately -1.2262, 36.7259.

The site is situated within an established urban/residential environment characterised by residential apartment developments, commercial premises, roads and associated urban infrastructure. The architectural site plan identifies Raphta Road, Church Road, and surrounding developments and commercial facilities within the locality.

The project area is served by the wider urban infrastructure network, including roads, electricity, telecommunications and sewerage infrastructure. This facility has a swimming pool area at the roof level.

2.2.1 Project Proposal Data

I. Site Size: - 0.1931 Ha

II. Current Development: -

III. Project Proposal

- **Building Structure:** 2 Basement Levels + Ground Floor + 2 Mezzanine Levels + 12 Typical Apartment Floors + 4 Duplex Apartment Floors + Rooftop Amenities & Padel Court
- **Ground Floor:** Reserved for commercial retail and resident services, including a Mini Mart, Pharmacy, Co-working space, Cafe, Outdoor Eating Area, Reception/Lift Lobby, Washrooms, Entrance Drop-off, Sentry, Landscaping, and Water Features, alongside parking and driveways
- **Parking Provision:** Multi-level parking provided across Basement 2, Basement 1, Ground Level, Mezzanine 1, and Mezzanine 2 (Total Parking Area: 5,396 sq.m)
- **Rooftop Amenities:** Landscaped Garden, Infinity Pool, Deck, Steam Room, Sauna, Pilates Room, Recovery Room, Lift Lobby, and a Padel Court.

IV. Typical Units

UNIT TYPOLOGY	GROSS AREA SqM	NUMBER OF UNITS
1 Bed Room + Duplex lofts		132

Studio Apartments		48
2 Bedroom + Duplex Lofts		56
TOTAL		272
Parking Space	As designed on the basement, mezzanine and ground floors.	

Table 1: Residential unit typologies: Source: Development Plans

2.2.2 Project Planning and Development

- a) **Access road point:** The Residential Development will be accessed from the Rhapta road as the Main Entrance
- b) **Control / gates:** The Project will establish a main entrance for security screening, control and overall record keeping of the movements into/out of the estate.
- c) **Parking at basement:** There's need to provide for adequate parking and this is achieved through basement, Mezzanine and ground surface parking.
- d) **Power/Generator Room location:** The power supply room with generators will be located at the ground floor to ensure these are away from the human operations/ movements.
- e) **Garbage handling area:** A section of the site near main entrance has been designed for waste holding bay before it is collected by the Garbage Company or Nairobi County
- f) Management offices, day to day operations shall be located on ground floor.
- g) **Firefighting;** fire hydrants strategic The Mechanical Engineer will design multiple fire hydrants at strategic points which can easily be accessed in-case of an emergency.
- h) **Design for the disabled:** The design has made provision for the physically challenged by providing ramps along the walkways where there's change of levels. Also, a number of parkings will be marked and reserved for the disabled. A lift shall serve all floors.
- i) **Roof and Utility Areas:** The rooftop shall accommodate the designated amenities, landscaping, pool and padel court, together with appropriate utility and safety installations.
- j) **Materials, low maintenance/ durable floor/wall:** The material specifications has picked durable, low maintenance materials e.g. wall master masonry as well as minimal painting on the external surfaces. This will reduce the maintenance cost over the life of the project.
- k) **Day Lighting:** The designs provide large windows to all the rooms to ensure that day lighting is getting into all spaces and therefore minimize the need for artificial lighting.
- l) **Solar water heating:** The solar water heating will be provided for bathrooms and kitchen to save on power related costs for heating water.
- m) **Solar power security lighting:** The Security lights will be solar powered; which is an integral part of sustainable development and also low cost for maintenance.
- n) **Water Resources**
 - Rain water harvesting: The design provides for rainwater harvesting, which will be channeled into storage water tanks for cleaning the premises.
 - Storm water drainage system: The structural Engineer will design the storm water management systems to ensure all the surface run-off is drained off and stored for reuse and excess directed into a suitable drainage system in the area.
 - Nairobi water and sewerage company shall provide clean water and sewer line to serve the development

2.3.5 Waste Management

- **Recycling:** The users will be provided with separate bins for various types of waste so that

recyclable waste can be isolated for reuse.

- **Proper Waste Disposal:** The facility manager will coordinate the waste handling systems and will contract relevant service providers for collection and disposal of the waste.
- An existing sewer line owned by Nairobi Water and Sewerage Company in the area to handle the wastewater from the development.

2.3 Construction Inputs and Major Project Activities

Various construction inputs will be involved in the project. The following provides a summary of key apparent inputs and activities.

2.3.1 Construction Materials

- Ordinary Portland cement – bagged
- Ordinary Portland cement – bulk
- Fine aggregate
- Coarse aggregate
- Concrete mix at central batch plant characteristic strength 20 MPa, slump 80mm and maximum aggregate size 20mm
- Reinforcing steel
- Structural steel
- Machine cut stones/sand/rock sand
- Paint, varnish, anti-termite chemicals, mazeras,
- Timber, MDF boards,
- Granite tiles, boarded tiles, sanitary fittings

2.3.2 Construction Equipment and Machinery

Equipment and rating	
Bulldozers Hydraulic excavators, 10-24t Mobile cranes, 30t to 50t max Air compressors, 5m ³ /min Generator, 365kw	Concrete mixer, Concrete vibrator, 35-63 mm diameter Self-propelled water tanker 6,000l Water pump centrifugal 50 mm diameter Tipper trucks, 0-25t

Table 2: Construction equipment and machinery

2.3.3 Labor

Both skilled and unskilled labor will have input of substantial man hours in providing technical supervision and mechanical operation.

2.3.4 Major Construction Activities

- a) Site clearance and preparation
- b) Excavation and appropriate disposal of excavated soil
- c) Laying of foundation slab and walling
- d) Construction of the proposed building, masonry and concrete work, structural steel, work, electrical works, mechanical work, plastering and painting and fitting necessary fixtures and fittings
- e) Storm water and drainage construction
- f) Connection to utilities electricity, water and sewer line
- g) Cleaning and removal of construction waste and Landscaping
- h) County Government inspection/occupation certificate and completion of works certificate issued.

2.4 Project Cost and Duration

The project is expected to cost approximately KES 1,136,724,238.65. The construction duration is estimated to take 18 months. A copy of the bills of quantities are attached in appendix 10.

2.5 Description of the Project's Operational Activities

2.5.1 Facility

Once complete the facility shall be used as a residential premise.

2.5.2 Solid Waste Management

The proponent will provide facilities for handling solid waste generated within the facility. These will include dust bins/skips for temporarily holding waste within the premises before final disposal at the designated dumping site. The solid wastes from each unit will be assembled in the garbage collection point ready for disposal by a NEMA licensed waste disposal company.

2.5.3 Waste Water and Storm Water Management

Sewage generated from building will be discharged into the existing sewer line. Storm water will be properly channelled to the existing main drainage channel in the area.

2.5.4 Cleaning

The proponent will be responsible for regular cleaning of the buildings and common areas. Cleaning operations will involve the use of substantial amounts of water, disinfectants and detergents.

2.5.5 General Repairs and Maintenance

The housing units and auxiliary facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include repair of building walls and floors, repairs and maintenance of electrical gadgets and equipment, repairs of refrigeration

equipment, repairs of leaking water pipes, re-painting, and replacement of worn-out materials among others.

2.6 Description of the Project's Decommissioning Activities

Decommissioning is an important phase in the project cycle and comes last in 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 from the site. The following should be undertaken to restore the environment:

- Demolition of the building, any; reusable material or equipment should be secured
- The site should be well landscaped by flattening the mounds of soil;
- Planting indigenous trees and flowers;
- All the equipment should be removed from the site;
- Fence and signpost unsafe areas until natural stabilization occurs;

2.6.1 Dismantling of Equipment and Fixtures

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

2.6.2 Site Restoration

Once all the waste resulting from demolition and dismantling works is removed from the site, the site will be restored through replenishment of the topsoil and re-vegetation using indigenous plant species.

2.7 Construction materials, activities and waste generated during construction phase

The table below gives a summary of construction materials, activities and waste generated during construction phase of the proposed project.

Table 3: Construction Materials, Activities and Waste Generated During Construction Phase

Element	Building equipment/materials/ products	Waste generated/ by products.
Basement	Excavators, tipper trucks	Excavated soil
Foundation	Concrete, high tensile steel	Steel bars and concrete waste
	Natural stone chiseled on both sides	Stone chippings
	Excavators, back hoes	Excavated soils and vegetation
	Hard core, chemicals for anti-termite treatment, damp proof membrane, plinth treatment materials.	Hard core, membrane cuttings
floor construction	Concrete, fabric mesh	Solid waste composed of concrete and metallic waste from steel and wires.
Structural frame	Concrete, high tensile steel	

External façade	Stone or concrete blocks, cement, sand, hoop irons, damp proof course	Solid waste composed of concrete and metallic waste, broken glasses, dry paint, packing materials, empty paint containers, wood chippings etc.
	Timber overlays, timber and m a s e r cladding materials	
	Aluminum window f r a m e s , window p a n e s ,	

	glazing materials, paint, ironmongery Metal casement & timber paneled doors, paint Timber and paint Rain water harvesting system/gutters Load bearing stone and water proof materials	
Internal divisions	Concrete blocks, sand, cement Wooden doors	Solid waste including concrete, broken stones, sand, wood, broken tiles, granite waste, broken timber, MDF waste, sand, plaster, granite, electrical wires, broken electrical socks, pipes, insulating materials etc
Floor and internal wall finish	Timber, granite tiles, cement, sand creed, skirting, ceramic tiles Quality paint, ceramic wall tiles, plaster, sand screed, cement, boarder tiles	
Ceiling and soffits	Slab and soffits finishes, Plaster, Paint, gypsum,	
Fittings	Wardrobes made of wood, varnish, paint MDF boards for cupboards, granite for worktop, paint.	
Internal plumbing	Pipes, sanitary facilities and drainage pipes	
Electrical installation	Wires, insulating materials, sockets, circuit breakers, flood and garden light, bulbs including builders work	Solid waste including concrete, broken stones, sand, wood, broken tiles, granite waste, broken timber, MDF waste, sand, plaster, granite, electrical wires, broken electrical socks, pipes, insulating materials, effluent and storm water
Soil Drainage	Construction to civil engineer specifications	
Storm water drainage	Ogee pipes, sand, concrete, natural stone	
Water supply	Pipes, tanks and water meters	
Civil works	Cabro paving blocks and kerbs Concrete, sand, cement	
Garden works	Red soil, manure,	Excavated soil, packaging materials. Organic matter, dead plant

2.8 Waste Management

Solid waste management will incorporate the segregation of waste at source, transportation of the waste to the central transfer station and final disposal through a contracted NEMA licensed waste handlers and recyclers. During construction phase;

- Express condition shall be put in the contract that before the contractor is issued with a completion certificate; the site should be clear of all debris and restore it to a state acceptable by the supervising architect/ project engineer and environmental consultant.

- Excess soil from excavation and foundation works shall be reused for earthworks and landscaping within the site. Excess waste shall be disposed by licensed waste haulers.

When in operation, the proponent shall provide solid waste collection bins strategically across the buildings. The proponent will contract a licensed waste handler who will collect all solid wastes at agreed intervals and dispose them at licensed dumping sites. Recyclable waste shall be held at temporary collection points awaiting collection by a licensed recycler who shall be contracted to collect at regular intervals. Skips shall also be provided which will temporarily hold the waste before collection.

During construction stage, portable toilets should be provided. Contaminated wastewater shall be channeled into a conservancy tank for storage before disposal. Effluent during operational phase shall be managed through connection to an existing sewer line.

CHAPTER THREE: BASELINE CONDITIONS OF THE STUDY AREA

3.1 Introduction

Nairobi City County is Kenya's principal urban and commercial centre and has experienced substantial population growth and urban development over the years. The growth has been driven by natural population increase, migration, expansion of commercial activities and increasing demand for residential accommodation. This growth has resulted in significant development of residential apartments, commercial premises and mixed-use developments, particularly within the established urban neighbourhood.

The proposed project site is located along Church Road, off Raphta Road, within an established urban residential and commercial environment in Nairobi City County. The surrounding area is characterized by residential apartment developments, commercial premises, access roads and associated urban infrastructure and services. The continued development of the area has increased demand for appropriately planned residential accommodation, water supply, sewerage, roads, electricity and solid waste management services.

The proposed project entails the development of a multi-storey apartment complex comprising residential apartments, commercial facilities, parking areas and rooftop recreational amenities. The development is proposed on L.R. No. NAIROBI BLOCK 3/249, measuring approximately 0.1931 hectares (1,931 m²). The development will comprise 272 residential units together with associated parking, commercial, recreational and utility facilities. A detailed description of the proposed development is provided in Chapter Two of this report.

The baseline environmental conditions described in this chapter provide the basis for assessing the potential environmental and socioeconomic impacts associated with the proposed development and for identifying appropriate mitigation and management measures.

3.2 General Overview of the Study Area

Nairobi City County is located in south-central Kenya and constitutes the country's principal metropolitan and administrative centre. The proposed project site is situated within the built-up urban area of Nairobi City County, along Church Road, off Raphta Road.

The immediate project surroundings comprise predominantly developed residential and mixed-use properties, including multi-storey apartment buildings and commercial establishments. The area is served by an established road network and urban infrastructure, including electricity, telecommunications, water supply and sewerage services.

The project site and its surroundings have therefore undergone considerable modification as a result of urban development. The baseline conditions are consequently predominantly characteristic of an established urban environment rather than a natural or agricultural setting.

3.3 Physical Environmental Setting

3.3.1 Topography

The proposed project site is situated within the generally undulating terrain of Nairobi City. The

wider Nairobi area comprises gently undulating to moderately sloping terrain, with local variations influenced by the underlying volcanic geology and drainage patterns.

The project site and its immediate surroundings are already developed and have been substantially modified through construction, paving, landscaping and other urban activities. The site is therefore not expected to present significant natural topographical constraints to the proposed development, subject to detailed engineering, structural and geotechnical investigations.

The final building foundation design, basement construction and associated earthworks should be guided by the findings of the detailed geotechnical investigation undertaken as part of the project design and construction process.

3.3.2 Drainage and Hydrology

The proposed development is located within the Nairobi River drainage system and forms part of the wider Athi River drainage basin. The surrounding area is highly urbanized, and natural surface drainage patterns have been modified by roads, buildings, paved surfaces, storm water drains and other infrastructure.

Storm water generated within the project site will therefore need to be managed through a properly designed drainage system to prevent uncontrolled runoff, erosion, localized flooding and discharge of sediment or pollutants onto neighbouring properties and public roads.

The project design provides for appropriate storm water management measures, including collection and controlled discharge of storm water. Rainwater harvesting and storage should also be incorporated where practicable to supplement water resources and reduce storm water runoff.

During construction, temporary drainage and erosion-control measures shall be provided, particularly during excavation and other earthworks, to prevent sediment-laden runoff from leaving the site.

3.3.3 Geology and Soils

The geology of Nairobi is predominantly associated with volcanic rocks and associated deposits resulting from past volcanic activity. The nature and depth of geological materials vary across the city and may include volcanic rocks, tuffs, lava flows, weathered volcanic materials and associated soils.

The soils within developed areas of Nairobi have in many locations been disturbed or modified by previous construction and urban activities. The project site is already situated within an established urban environment and therefore the natural soil profile may have been affected by previous site use and development.

A detailed geotechnical investigation should be undertaken to establish the soil profile, bearing capacity, groundwater conditions and other parameters necessary for the safe design of the proposed basement and multi-storey building. Excavated soils and other materials generated during construction shall be appropriately managed and, where suitable, reused or disposed of at approved locations.

3.3.4 Climatic Conditions

Nairobi generally experiences a subtropical highland climate characterized by moderate temperatures and distinct wet and relatively dry seasons. Rainfall is generally received during two principal seasons, with the long rains occurring approximately between March and May and the short rains occurring approximately between October and December.

Climatic conditions are relevant to the proposed development because rainfall may influence construction activities, storm water runoff, soil erosion and the management of excavated materials. Dry and windy conditions may also contribute to dust generation during excavation, material handling and construction activities.

The design and implementation of the project should therefore take account of seasonal rainfall patterns, particularly during basement excavation, foundation works, material storage and temporary drainage management.

3.4 Biological Environmental Setting

3.4.1 Flora

The proposed project site is located within an established urban environment where natural vegetation has largely been modified by human activities and previous development.

Vegetation within the immediate surroundings generally consists of planted trees, ornamental plants, grass and other landscaping vegetation associated with residential and commercial properties. Vegetation may also occur along road reserves, plot boundaries and other landscaped areas.

The project site contains existing planted vegetation, including garden vegetation and trees. Any vegetation that may require removal to facilitate construction should be identified during site preparation and managed appropriately. Where feasible, existing mature vegetation should be retained and supplemented through landscaping and tree planting as part of the proposed development.

The proposed landscaping should incorporate suitable ornamental and indigenous or locally appropriate plant species to improve the visual quality of the development, reduce dust and contribute to urban greening.



Plate 3: Existing vegetation within the project site

Source: Field Survey

3.4.2 Fauna

The project site is situated within a highly modified urban environment. Natural wildlife habitats within the immediate project area have been substantially altered by buildings, roads, human settlement and other urban activities.

The fauna likely to occur within and around the site is therefore primarily composed of common urban-adapted species, including birds, insects and small mammals such as rodents. No significant wildlife habitat or major wild animal population was identified within the project site based on the site setting described in the field assessment.

Construction activities may temporarily disturb common urban fauna through noise, vibration, vegetation clearance and increased human activity. Such effects are expected to be localized and can be minimized through good construction-site management and retention of suitable landscaping where practicable.

3.5 Socio-Economic Setting

3.5.1 Population

Nairobi City County is one of the most densely developed and economically active areas in Kenya and supports a large urban population. Population growth and continued urbanization have contributed to increased demand for housing, commercial premises, transportation, water, sanitation and other urban services.

The project is located within an established urban neighbourhood characterized by residential and commercial developments. The proposed provision of additional residential accommodation will contribute to the housing stock within the area while also increasing demand for supporting services and infrastructure.

The potential increase in demand for water, electricity, sewerage, waste management, transport and other services has been considered in the impact assessment and Environmental and Social Management Plan provided in subsequent chapters.

3.5.2 Land Use and Local Economy

The project area is predominantly characterized by established residential and mixed-use urban development. The immediate neighbourhood contains multi-storey residential apartments, commercial premises and associated urban infrastructure.

The wider area has experienced substantial real estate development in response to demand for residential accommodation within Nairobi. Commercial activities have developed alongside residential areas, providing goods and services to residents, workers and visitors.

The local economy is therefore supported by a combination of residential, commercial, professional, service and construction-related activities. The proposed development is consistent with the prevailing urban character of the immediate project surroundings, subject to compliance with applicable Nairobi City County planning, zoning, development-control and building approval requirements.



Plate 4: Typical residential and mixed-use developments within the surrounding area
Source: Field Survey

3.5.3 Infrastructure and Access

Road Network

The proposed project site is accessed through the existing urban road network serving the Church Road and Raphtha Road area. Church Road provides direct access to the site and connects to the wider Raphtha Road network and other roads serving the surrounding residential and commercial developments.

The existing roads provide access for residents, businesses, service providers and emergency response vehicles. During construction, additional traffic is expected to arise from delivery of construction materials, movement of construction equipment and transportation of excavated material and waste.

A traffic-management approach should therefore be implemented during construction to minimize obstruction of public roads, conflicts with pedestrians and inconvenience to neighbouring properties.



Plate 5: Access road serving the proposed project site

Source: Field Survey

3.5.4 Posts and Telecommunications

The project area is within an established urban telecommunications network and is expected to have access to mobile telephone and internet services provided by licensed telecommunications operators.

Telecommunication services are important to the operation of the proposed apartment development, particularly for residential communication, internet connectivity, security systems, emergency communication and commercial activities.

The proposed development should provide appropriate infrastructure for telecommunication and data connectivity while ensuring that installation of associated equipment complies with applicable requirements.

3.5.5 Education Institutions

The wider Nairobi urban area is served by numerous educational institutions, including public and private primary and secondary schools, colleges, universities and professional training institutions.

Residents and occupants of the proposed development will have access to educational institutions within the wider Nairobi urban area. The presence of educational facilities within the wider neighbourhood also reflects the established urban character of the project area.

The development is not expected to directly affect educational institutions, although construction traffic, noise and other temporary activities should be managed to minimize disturbance to surrounding land users.

3.5.6 Energy Access

The project area is served by the national electricity distribution network operated by Kenya Power. Electricity will be the principal source of energy for the operation of the proposed apartment development, including lighting, lifts, water pumping, security systems, commercial facilities and other building services.

The development should incorporate energy-efficiency measures, including energy-efficient lighting and equipment, appropriate building controls and efficient water-pumping systems. Renewable energy technologies, including solar energy, may also be incorporated where appropriate to supplement the main electricity supply.

A standby generator may be provided for essential services where required. Where a generator is installed, it shall be appropriately located and operated in accordance with applicable environmental, occupational health and safety and noise-control requirements.

3.5.7 Wastewater Management

The project is located within an established urban area where sewerage infrastructure is available. The proposed development is expected to connect to the available public sewer system, subject to approval and connection requirements of the relevant water service provider.

Wastewater generated during operation will mainly comprise domestic sewage from residential units, commercial facilities, kitchens, washrooms and other associated uses.

The development shall provide appropriate internal wastewater collection and plumbing systems designed to prevent leakage and cross-contamination. No untreated wastewater shall be discharged onto the ground, into stormwater drainage systems or into the surrounding environment.

During construction, sanitary facilities shall be provided for workers and wastewater generated from construction activities shall be appropriately managed.

3.5.8 Housing and Water Supply

The project area is characterized by a high concentration of residential developments, including multi-storey apartment buildings. Continued urbanization has increased demand for additional housing within Nairobi City County.

The proposed apartment development will contribute to the available housing stock by providing 272 residential units of different typologies. The development will also incorporate associated commercial and recreational facilities intended to support the needs of residents and users.

Water for the development is expected to be obtained primarily from the public water supply network. A borehole is proposed as a supplementary source, subject to completion of the necessary hydrogeological assessment and obtaining the requisite approvals and authorization from the Water Resources Authority.

The proposed borehole shall not be developed or abstract water without compliance with applicable water-resource requirements. Water abstraction, storage and use shall be undertaken in accordance with the requirements of the relevant water-resource and water-service authorities.

Rainwater harvesting and storage should also be incorporated into the development where practicable to supplement water supply and promote efficient use of water resources.

3.5.9 Solid Waste Management

The surrounding area generates solid waste primarily from residential, commercial and institutional activities. Waste streams are expected to include domestic waste, packaging materials, food waste, paper, plastics and other general municipal waste.

During construction, additional waste streams will arise from excavation, construction materials, packaging, timber, metals, plastics and other construction-related activities.

The project shall provide designated waste storage areas and implement source separation, reuse and recycling where practicable. Waste shall be collected and transported by appropriately licensed waste service providers to approved disposal, treatment or recovery facilities.

Hazardous waste, where generated, shall be separately handled and managed in accordance with applicable environmental and waste-management requirements.

3.5.10 Water Resources and Conservation

Water conservation will be an important consideration during both construction and operation because of the relatively high number of residential units proposed.

The development should incorporate water-efficient plumbing fixtures, metering and monitoring systems, leak detection and repair procedures, rainwater harvesting and appropriate storage facilities.

During construction, water use should be controlled to prevent unnecessary wastage. Construction water should be obtained from authorized sources, while any proposed groundwater abstraction shall be subject to the relevant assessment, authorization and permitting requirements.

3.5.11 Health and Emergency Services

The project is located within Nairobi's established urban service network and occupants are expected to have access to health facilities, police services, fire and emergency response services within the wider city.

The proposed development should nevertheless provide appropriate on-site emergency preparedness and response measures. These should include fire detection and firefighting systems, clearly marked emergency exits, emergency lighting, fire assembly points, first-aid provisions, appropriate signage and an emergency response plan.

The development should also ensure that emergency access routes remain unobstructed throughout both construction and operation.

3.5.12 Existing Environmental Conditions and Project Relevance

The baseline assessment indicates that the proposed project is situated within a highly modified urban environment. The key environmental characteristics relevant to the project include:

- ❖ An established residential and mixed-use urban land-use pattern;
- ❖ Existing road access through Church Road and the surrounding Raphta Road network;
- ❖ Existing urban water, electricity, telecommunications and sewerage infrastructure;
- ❖ Modified vegetation largely comprising planted trees, ornamental vegetation and landscaped areas;
- ❖ Limited wildlife habitat, with fauna primarily comprising common urban-adapted species;
- ❖ Potential stormwater-management requirements associated with increased impervious surfaces;
- ❖ Potential demand for additional water and sewerage services arising from the proposed residential population;
- ❖ Potential construction-phase effects including dust, noise, vibration, traffic, waste generation, soil disturbance and occupational health and safety risks; and
- ❖ Potential operational-phase effects associated with water consumption, wastewater generation, solid waste, traffic, energy use, fire safety and increased occupancy.

These baseline conditions form the reference against which the potential environmental and socio-economic impacts of the proposed development have been assessed. The mitigation and management measures presented in subsequent chapters have been developed to address the identified risks and to promote environmentally sound implementation and operation of the proposed development.

CHAPTER FOUR: POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

4.1 National Environmental Policies

4.1.1 National Environmental Action Plan (NEAP)

The National Environmental Action Plan (NEAP) provides a framework for integrating environmental considerations into Kenya's social and economic development planning. It promotes coordinated measures for the protection, conservation and sustainable management of the environment and natural resources.

Relevance to the Project

The proposed apartment development shall be implemented in a manner that promotes environmental sustainability and minimizes adverse environmental and social impacts. Environmental considerations shall be integrated into project design, construction and operation through implementation of the Environmental and Social Management Plan (ESMP), environmental monitoring, pollution prevention, resource efficiency and compliance with applicable environmental legislation.

4.1.2 National Environment Policy, 2013

The National Environment Policy provides a framework for an integrated approach to the planning and sustainable management of Kenya's environment and natural resources. It promotes sustainable development, environmental governance, pollution prevention, conservation of natural resources and integration of environmental considerations into development planning.

Relevance to the Project

The proposed development shall incorporate environmental management measures throughout its life cycle. Particular attention shall be given to efficient use of water and energy, stormwater management, wastewater management, solid waste management, air and noise pollution control, occupational health and safety, landscaping and protection of the surrounding urban environment.

4.1.3 Kenya Vision 2030

Kenya Vision 2030 is the country's long-term development blueprint and seeks to transform Kenya into a globally competitive and prosperous country with a high quality of life. The Vision is implemented through successive Medium-Term Plans and sectoral programmes.

Relevance to the Project

The proposed apartment development contributes to urban development and housing provision within Nairobi City County. The project shall, however, be implemented in a manner that balances economic and social development objectives with environmental sustainability, efficient resource use and protection of public health and safety.

4.1.4 Sustainable Development Goals (SDGs)

The proposed development is relevant to a number of Sustainable Development Goals, particularly:

SDG 6: Clean Water and Sanitation;
SDG 7: Affordable and Clean Energy;
SDG 8: Decent Work and Economic Growth;
SDG 9: Industry, Innovation and Infrastructure;
SDG 11: Sustainable Cities and Communities;
SDG 12: Responsible Consumption and Production; and
SDG 13: Climate Action.

Relevance to the Project

The project shall promote responsible use of water and energy, safe working conditions, appropriate waste management, sustainable urban development, climate resilience and efficient use of land and infrastructure.

4.2 National and Local Legislative and Regulatory Framework

4.2.1 Constitution of Kenya, 2010

The Constitution of Kenya provides the overarching framework for environmental protection and sustainable development.

Article 42 provides that every person has the right to a clean and healthy environment, including the right to have the environment protected for the benefit of present and future generations through legislative and other measures.

Article 69 sets out obligations of the State relating to the environment, including ensuring sustainable exploitation, utilization, management and conservation of the environment and natural resources.

Article 70 provides for enforcement of the right to a clean and healthy environment.

Article 43 provides for economic and social rights, including the right to accessible and adequate housing and reasonable standards of sanitation.

Relevance and Compliance

The proposed development shall be planned, constructed and operated in a manner that protects the right to a clean and healthy environment and promotes safe and adequate residential accommodation. The mitigation measures contained in this EIA Study Report and the ESMP shall be implemented throughout the project life cycle.

4.2.2 Environmental Management and Co-ordination Act, 1999 (EMCA), Cap. 387

The Environmental Management and Co-ordination Act (EMCA), Cap. 387, is the principal framework legislation for environmental management in Kenya. It establishes the National Environment Management Authority (NEMA) and provides for the coordination, supervision and

implementation of environmental management policies.

The Act provides for environmental impact assessment, environmental audit, environmental quality standards, environmental restoration and enforcement mechanisms.

The EIA process for the proposed development is undertaken pursuant to EMCA and the current regulations made under the Act.

Environmental Impact Assessment

The proposed development is subject to environmental assessment requirements. No project requiring environmental assessment should commence implementation without the requisite environmental assessment and approval/licensing by NEMA.

Environmental Audit

The proponent shall undertake environmental audits and other compliance assessments as required under EMCA and the applicable Environmental Impact Assessment and Audit Regulations.

Compliance

The proponent shall:

- a) Obtain the requisite NEMA environmental approval/licence before commencement of activities requiring such approval;
- b) Implement all conditions attached to the environmental licence;
- c) Implement the approved Environmental and Social Management Plan;
- d) Maintain environmental monitoring and compliance records;
- e) Undertake environmental audits as required by NEMA and applicable legislation; and
- f) Comply with all applicable environmental quality standards and subsidiary legislation.

4.2.3 Environmental Management and Co-ordination (Strategic and Integrated Environmental Assessments and Environmental Audits) Regulations, 2025

The Environmental Management and Co-ordination (Strategic and Integrated Environmental Assessments and Environmental Audits) Regulations, 2025 provide the current regulatory framework governing environmental impact assessments and environmental audits in Kenya. They replaced the former Environmental (Impact Assessment and Audit) Regulations framework. The 2025 Regulations require proponents of projects requiring environmental assessment to undertake the applicable assessment before implementation and provide for environmental impact assessment licensing, public participation, environmental assessment reports, monitoring and environmental audits.

The Regulations require that a proponent should not implement a project likely to have a negative environmental impact, or for which environmental assessment is required, unless the required

integrated environmental impact assessment has been undertaken and the Authority has granted the appropriate licence.

Relevance and Compliance

The proposed development has been subjected to an EIA study in accordance with the applicable requirements. The approved Terms of Reference, Ref. No. NEMA/ENVIS/EIA/TOR/00707, approved on 1 September 2026, form the basis of this EIA Study Report.

The proponent shall:

- ❖ Obtain and maintain the requisite NEMA environmental licence before commencement of regulated project activities;
- ❖ Implement the approved ESMP and licence conditions;
- ❖ Undertake statutory environmental monitoring and audits;
- ❖ Maintain records of environmental performance;
- ❖ Facilitate public participation and stakeholder engagement as required; and
- ❖ Submit environmental reports to NEMA as required.

NEMA's current published materials confirm the 2025 Strategic and Integrated Environmental Assessments and Environmental Audits Regulations as the applicable updated EIA/EA regulatory framework.

4.2.4 Physical and Land Use Planning Act, 2019

The Physical and Land Use Planning Act, 2019 provides the legal framework for physical and land-use planning, development control and development permission in Kenya.

The Act requires development within a county to obtain the applicable development permission from the relevant county government. Development applications are required to be supported by plans and documents prepared by appropriately qualified professionals.

Relevance and Compliance

The proposed apartment development shall comply with applicable Nairobi City County planning and development-control requirements.

The proponent shall:

- a) Obtain the required development permission from Nairobi City County;
- b) Ensure that architectural, structural and engineering designs are prepared and certified by appropriately qualified professionals;
- c) Comply with applicable zoning, plot-ratio, building-height, setback, parking, access, drainage and other development-control requirements;
- d) Comply with any conditions imposed by Nairobi City County and other competent authorities; and
- e) Ensure that construction is undertaken in accordance with the approved plans.

4.2.5 Physical and Land Use Planning (General Development Permission and Control)

Regulations, 2021

The Physical and Land Use Planning (General Development Permission and Control) Regulations, 2021 provide procedures and requirements relating to development permission and development control.

Relevance and Compliance

The proposed development shall comply with applicable development-control requirements, including matters relating to site planning, access, building layout, parking, setbacks, drainage, public safety and other requirements imposed during the approval process.

Any changes to the approved development configuration shall be subjected to the applicable approval process before implementation.

4.2.6 County Governments Act, 2012

The County Governments Act provides for the establishment, functions and powers of county governments under the Constitution.

County governments are responsible for a range of functions relevant to the proposed development, including county planning and development, county roads, storm water management, public health, trade development and other local services.

Relevance and Compliance

The proponent shall obtain and maintain all applicable approvals, permits and consents from Nairobi City County Government and shall comply with county planning, public health, building, trade, waste management and other applicable requirements.

4.2.7 Public Health Act, Cap. 242

The Public Health Act provides for the protection and preservation of public health and addresses conditions that may constitute nuisances or pose risks to human health.

The Act is relevant to the project because construction and operation may generate dust, noise, wastewater, solid waste, occupational hazards and other conditions that could affect public health if not properly controlled.

Relevance and Compliance

The proponent shall:

- ❖ Maintain the premises in a clean and sanitary condition;
- ❖ Provide adequate sanitary facilities;
- ❖ Ensure appropriate wastewater and drainage management;
- ❖ Prevent accumulation of waste;

- ❖ Control dust, smoke, odours and other potential public nuisances;
- ❖ Maintain appropriate hygiene standards in commercial and residential facilities; and
- ❖ Comply with requirements of the relevant public health authorities.

4.2.8 Occupational Safety and Health Act, 2007, Cap. 236A

The Occupational Safety and Health Act, 2007 provides for the safety, health and welfare of persons at work and protection of persons other than workers from risks arising from workplace activities.

The Act is particularly relevant during construction because of excavation, work at height, lifting operations, electrical works, machinery operation, material handling, traffic movement and other construction hazards.

Relevance and Compliance

The proponent and contractor shall:

- a) Register the workplace with the Directorate of Occupational Safety and Health Services (DOSHS), where required;
- b) Conduct appropriate risk assessments;
- c) Develop and implement safe systems of work;
- d) Provide suitable personal protective equipment;
- e) Provide adequate welfare and sanitary facilities;
- f) Provide appropriate fire safety and emergency arrangements;
- g) Ensure safe use and maintenance of plant and equipment;
- h) Provide appropriate occupational health surveillance where required;
- i) Report occupational accidents and dangerous occurrences in accordance with the law; and
- j) Ensure that workers receive appropriate induction, training and supervision.

4.2.9 Occupational Safety and Health (First Aid in the Workplace) Regulations, 2024

The Occupational Safety and Health (First Aid in the Workplace) Regulations, 2024, Legal Notice No. 79 of 2024, apply to workplaces during working hours. They require appropriate first-aid arrangements, including first-aid facilities, trained first-aiders, emergency procedures and annual first-aid audits.

Relevance and Compliance

The construction site shall:

- ❖ Provide appropriate first-aid boxes/cupboards and supplies;
- ❖ Appoint an adequate number of trained first-aiders;
- ❖ Display names and contacts of appointed first-aiders;
- ❖ Establish emergency procedures for transferring injured persons to appropriate health facilities; and
- ❖ Undertake the required first-aid audits.

4.2.10 Work Injury Benefits Act, 2007

The Work Injury Benefits Act (WIBA) provides for compensation to employees for work-related injuries and occupational diseases arising out of employment.

Relevance and Compliance

The proponent and contractor shall comply with WIBA requirements and ensure that workers are appropriately covered against work-related injuries and occupational diseases. Work-related accidents shall be reported and managed in accordance with applicable statutory requirements.

4.2.11 Employment Act, 2007

The Employment Act provides for fundamental rights of employees and establishes minimum terms and conditions of employment.

Relevance and Compliance

The proponent and contractor shall:

- ❖ Comply with applicable employment standards;
- ❖ Prohibit child labour;
- ❖ Provide appropriate employment terms and conditions;
- ❖ Ensure non-discrimination and fair treatment of workers;
- ❖ Maintain appropriate employment records; and
- ❖ Comply with requirements concerning working hours, wages, leave and termination.

The contractor shall not employ persons below the legally permissible working age on the project.

4.2.12 National Building Code, 2024

The National Building Code, 2024, issued under Legal Notice No. 47 of 2024, provides the current national requirements governing building design, construction, siting, access, structural safety, fire safety, building services and other aspects of building development. It replaced reliance on the former building-code framework.

The Code includes requirements relating to siting of buildings, access to construction sites, spaces around buildings, means of access, construction safety and other building-control matters.

Relevance and Compliance

The proponent shall:

- a) Ensure the building is designed and constructed in accordance with the National Building Code, 2024;
- b) Obtain all applicable development and building approvals;
- c) Ensure structural designs are prepared and certified by appropriately qualified professionals;
- d) Provide adequate access, circulation and emergency access;
- e) Provide appropriate means of escape and fire-safety installations;
- f) Ensure construction works are supervised by competent professionals;
- g) Maintain appropriate site safety and protection measures during construction; and
- h) Obtain the applicable completion and occupation approvals before occupation of the completed development.

4.2.13 National Construction Authority Act, 2011

The National Construction Authority Act establishes the National Construction Authority (NCA) and provides for regulation of the construction industry, including registration of contractors and other requirements relating to construction works.

Relevance and Compliance

The proponent shall ensure that:

- ❖ The project is registered with NCA where applicable;
- ❖ The appointed contractor is appropriately registered and licensed by NCA;
- ❖ Construction works are undertaken by qualified personnel;
- ❖ Relevant construction standards and safety requirements are observed; and
- ❖ Required NCA approvals and inspections are obtained.

4.2.14 Energy Act, 2019

The Energy Act, 2019 provides the legal framework for electricity, renewable energy and other energy-related activities in Kenya and establishes responsibilities for energy regulation, supply, conservation and development.

Relevance and Compliance

The project shall:

- ❖ Obtain electricity connection and approvals from the relevant authorities;
- ❖ Ensure electrical installations are undertaken by appropriately licensed persons;
- ❖ Incorporate energy-efficiency measures;
- ❖ Promote efficient lighting and equipment;
- ❖ Consider renewable-energy technologies where feasible; and
- ❖ Ensure any standby generator or other energy installation complies with applicable environmental, safety and licensing requirements.

4.2.15 Climate Change Act, 2016

The Climate Change Act, Cap. 387A, provides the legal framework for enhanced response to climate change and measures towards low-carbon climate-resilient development.

Relevance and Compliance

The project shall incorporate climate-resilient and low-carbon measures, including:

- ❖ Energy efficiency;
- ❖ Water conservation;
- ❖ Rainwater harvesting;
- ❖ Sustainable stormwater management;
- ❖ Appropriate landscaping and urban greening;
- ❖ Efficient waste management;
- ❖ Use of durable and resource-efficient building materials; and
- ❖ Measures to enhance resilience to intense rainfall, flooding, heat and other climate-related risks.

4.2.16 Water Act, 2016

The Water Act, 2016 provides the legal framework for the management, conservation, control and regulation of water resources and water services in Kenya.

The Act regulates abstraction and use of water resources and provides the framework for water-resource management through the Water Resources Authority (WRA).

The current subsidiary framework includes the Water (Resources) Regulations, 2025, Water (Services) Regulations, 2025, and Water (Harvesting and Storage) Regulations, 2025.

Relevance and Compliance

The proposed development shall primarily utilize authorized public water supply. Where a borehole is developed as a supplementary source, the proponent shall:

- ❖ Undertake the required hydrogeological assessment;
- ❖ Obtain the applicable WRA authorization for borehole construction;
- ❖ Obtain the requisite water-use permit before abstraction;
- ❖ Comply with groundwater abstraction conditions;

- ❖ Maintain required borehole and abstraction records; and
- ❖ Undertake water-quality testing and monitoring as required.

No groundwater abstraction shall commence without the required authorization and permit.

4.2.17 Water (Resources) Regulations, 2025

The Water (Resources) Regulations, 2025, Legal Notice No. 58 of 2025, provide the current regulatory framework for management and regulation of water resources under the Water Act.

Relevance and Compliance

Any proposed borehole and groundwater abstraction for the development shall comply with the requirements of the Water Resources Regulations, including applicable assessment, authorization, abstraction, monitoring and reporting requirements.

The proponent shall ensure that the proposed borehole is constructed and operated only after obtaining the requisite approvals from the Water Resources Authority.

4.2.18 Water (Services) Regulations, 2025

The Water (Services) Regulations, 2025, Legal Notice No. 54 of 2025, provide the current regulatory framework for water services.

Relevance and Compliance

The proposed development shall obtain its public water supply and sewerage connection through the authorized water services provider and shall comply with applicable connection, metering, billing, service and sewer-discharge requirements.

Where wastewater is discharged into the public sewer, the development shall comply with the requirements of the relevant water services provider and applicable environmental standards.

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

The Environmental Management and Co-ordination (Water Quality) Regulations, 2024, Legal Notice No. 177 of 2024, provide the current framework for protection of water resources and control of water pollution. They apply to water used for domestic, industrial, agricultural, recreational, fisheries, wildlife and other purposes.

The Regulations establish standards relating to wastewater and effluent discharge and prohibit activities that cause or may cause water pollution.

Relevance and Compliance

The proponent shall:

- ❖ Prevent contamination of surface water and groundwater;

- ❖ Ensure wastewater is appropriately managed;
- ❖ Connect to the authorized sewer system where available and approved;
- ❖ Prevent discharge of untreated wastewater into the environment;
- ❖ Manage oils, fuels and chemicals to prevent spills;
- ❖ Implement appropriate stormwater controls; and
- ❖ Comply with applicable effluent and water-quality standards.

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

The Environmental Management and Co-ordination (Waste Management) Regulations, 2024, Legal Notice No. 178 of 2024, replaced the former 2006 Waste Management Regulations. They provide the current framework for waste segregation, storage, handling, transportation, treatment, recovery and disposal.

Relevance and Compliance

The proponent shall:

- a) Minimize waste generation at source;
- b) Provide suitable waste storage areas;
- c) Segregate waste at source where practicable;
- d) Promote reuse, recycling and recovery;
- e) Engage appropriately licensed waste service providers;
- f) Ensure waste is transported and disposed of at approved facilities; and
- g) Maintain appropriate records of waste handling and disposal.

Construction waste shall not be dumped on roads, neighbouring properties, drainage channels or unauthorized sites.

4.2.21 Sustainable Waste Management Act, 2022

The Sustainable Waste Management Act, 2022 provides a national framework for sustainable waste management and promotes waste minimization, segregation, resource recovery, recycling, circular economy approaches and extended producer responsibility.

Relevance and Compliance

The development shall apply the waste hierarchy by prioritizing waste prevention, reduction, reuse, recycling and recovery before final disposal. Appropriate waste-segregation and storage arrangements shall be incorporated into the building design and operation.

Where products covered by Extended Producer Responsibility requirements are used or discarded, applicable EPR obligations shall be observed.

4.2.22 Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024

The Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024, Legal Notice No. 176 of 2024, establish requirements for producer responsibility and management of products and packaging through their life cycle. The Regulations were subsequently amended in 2025.

Relevance to the Project

The proponent and building management shall support responsible handling of products and packaging covered by applicable EPR schemes, particularly packaging, electrical/electronic products and other regulated waste streams generated during project operation.

4.2.23 Environmental Management and Co-ordination (Air Quality) Regulations, 2024, as amended in 2025

The Environmental Management and Co-ordination (Air Quality) Regulations, 2024, Legal Notice No. 180 of 2024, provide the current framework for prevention, control and abatement of air pollution. They commenced on 4 November 2024 and were amended by Legal Notice Nos. 21 and 66 of 2025.

The Regulations specifically recognize fugitive emissions from construction sites, demolition, stockpiling of materials and windblown disturbances.

Relevance and Compliance

During construction, the proponent and contractor shall:

- a) Suppress dust through appropriate watering and other suitable measures;
- b) Cover or appropriately contain dusty materials during transportation;
- c) Maintain construction machinery and vehicles in good operating condition;
- d) Minimize unnecessary idling of equipment;
- e) Properly store fine construction materials;
- f) Provide appropriate respiratory protection where required; and
- g) Comply with applicable air-quality and emission requirements.

Where stationary emission sources requiring regulatory controls are installed, the applicable emission monitoring and licensing requirements shall be observed.

4.2.24 Environmental Management and Co-ordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009

The Noise and Excessive Vibration Pollution Control Regulations, 2009 remain applicable to activities generating noise and vibration.

The Regulations prohibit loud, unreasonable, unnecessary or unusual noise that may annoy, disturb, injure or endanger the comfort, health or safety of persons or the environment.

Relevance and Compliance

The contractor shall:

- ❖ Restrict noisy construction activities to approved working hours;
- ❖ Maintain construction machinery and equipment;
- ❖ Use appropriate noise-control measures;
- ❖ Avoid unnecessary idling and use of noisy equipment;
- ❖ Provide hearing protection where occupational exposure warrants it;
- ❖ Monitor noise where necessary; and
- ❖ Obtain any applicable permits or approvals for activities expected to exceed prescribed noise limits.

Particular care shall be taken because the project is located within an established residential and mixed-use urban environment.

4.2.25 Environmental Management and Co-ordination (Management of Toxic and Hazardous Chemicals and Materials) Regulations, 2024

The Environmental Management and Co-ordination (Management of Toxic and Hazardous Chemicals and Materials) Regulations, 2024, Legal Notice No. 182 of 2024, establish requirements for the sound management of toxic and hazardous chemicals and materials and seek to reduce risks to human health and the environment.

Relevance and Compliance

Where fuels, oils, paints, solvents, cleaning chemicals or other hazardous substances are used, the proponent and contractor shall:

- ❖ Maintain inventories of hazardous substances;
- ❖ Provide appropriate storage facilities;
- ❖ Ensure containers are properly labelled;
- ❖ Maintain Safety Data Sheets where applicable;
- ❖ Provide spill-control materials;
- ❖ Train workers in safe handling;
- ❖ Prevent unauthorized access; and
- ❖ Dispose of hazardous waste through appropriately authorized channels.

4.2.26 Environmental Management and Co-ordination (Controlled Substances) Regulations, 2007

The Controlled Substances Regulations provide controls for ozone-depleting substances and related activities.

Relevance and Compliance

Where refrigeration, air-conditioning or other equipment containing controlled substances is installed, the proponent shall ensure that equipment and servicing practices comply with applicable requirements and that prohibited or uncontrolled substances are not introduced into the project.

4.2.27 Fire Risk Reduction Rules, 2007

The Occupational Safety and Health (Fire Risk Reduction) Rules, 2007 provide requirements for prevention and control of fire risks in workplaces.

Relevance and Compliance

The project shall incorporate appropriate fire prevention and protection measures, including:

- ❖ Fire detection and alarm systems;
- ❖ Portable fire extinguishers;
- ❖ Adequate emergency exits and escape routes;
- ❖ Fire-fighting water storage and systems where required;
- ❖ Emergency lighting and signage;
- ❖ Fire assembly points;
- ❖ Appropriate fire safety training;
- ❖ Periodic fire drills;
- ❖ Inspection and maintenance of fire-fighting equipment; and
- ❖ Appointment and training of fire safety personnel.

The final fire-safety design shall comply with applicable building and fire-safety requirements and the requirements of the relevant approving authorities.

4.2.28 Land Act, 2012

The Land Act, 2012 provides for the management and administration of public, community and private land and gives effect to the constitutional principles relating to land.

Relevance and Compliance

The proponent shall ensure that development of the project site is undertaken in accordance with the registered land rights, applicable planning requirements, easements, way leaves, access rights and other legal interests affecting the property.

4.2.29 Land Registration Act, 2012

The Land Registration Act, 2012, Cap. 300, provides for registration of titles and interests in land. It replaced the former Registration of Titles Act, Land Titles Act and Registered Land Act, which are listed as repealed laws under the Act.

Relevance and Compliance

The proposed development is located on L.R. No. NAIROBI BLOCK 3/249. The proponent shall ensure that the project is undertaken in accordance with the registered interests and rights attaching to the property and that any required consents, easements, way leaves or other interests are appropriately addressed.

The former Registration of Titles Act, Land Titles Act and Registered Land Act should therefore not be cited as current legislation in this EIA report.

4.2.30 National Land Commission Act, 2012

The National Land Commission Act establishes the National Land Commission and provides for its functions and powers relating to land management and administration. The current Act has also been amended, including by the National Land Commission (Amendment) Act, 2025.

Relevance to the Project

Where matters within the mandate of the National Land Commission arise, the proponent shall comply with the applicable legal requirements and directions of the Commission.

4.2.31 County Government By-Laws and Nairobi City County Requirements

The proposed development shall comply with applicable Nairobi City County laws, regulations, policies, planning requirements, development-control requirements and by-laws.

These requirements may include:

- ❖ Development and building approvals;
- ❖ Zoning and development-control requirements;
- ❖ Parking and access requirements;
- ❖ Public health requirements;
- ❖ Drainage and storm water management;
- ❖ Solid waste management;
- ❖ Fire safety;
- ❖ Trade and business licensing;
- ❖ Road reserves and access;
- ❖ Construction-site management; and
- ❖ Other conditions attached to county approvals.

Compliance

The proponent shall obtain and comply with all applicable Nairobi City County approvals before commencement of the relevant activities and shall comply with all conditions imposed by the County Government.

4.2.32 Environmental and Social Safeguards and Public Participation

Public participation is an important component of the environmental assessment process and is also supported by the Constitution and the applicable environmental assessment regulations.

The proponent shall maintain records of stakeholder engagement, including notices, questionnaires, attendance registers, photographs, minutes, comments received and responses provided, as applicable.

The concerns raised during stakeholder engagement shall be considered in project design and implementation and reflected in the mitigation and monitoring measures where relevant.

4.3 Institutional Framework

The implementation and regulation of the proposed project will involve various national and county institutions with different statutory mandates.

4.3.1 National Environment Management Authority (NEMA)

NEMA is established under EMCA as the principal government instrument for implementation of environmental policy and exercise of general supervision and coordination over environmental matters.

NEMA is responsible for, among other functions:

- ❖ Environmental impact assessment licensing;
- ❖ Environmental audits and compliance monitoring;
- ❖ Environmental quality standards;
- ❖ Environmental enforcement;
- ❖ Coordination of lead agencies; and
- ❖ Environmental restoration and pollution control.

Relevance

The proponent shall obtain the requisite NEMA environmental licence and comply with all licence conditions, environmental standards and monitoring requirements.

4.3.2 Nairobi City County Government

Nairobi City County Government is responsible for county functions relevant to the project, including physical planning and development control, local infrastructure, public health, drainage, waste management and other county services.

Relevance

The proponent shall obtain the required county approvals and comply with applicable Nairobi City County planning, building, public health, waste management, fire safety and other requirements.

4.3.3 Water Resources Authority (WRA)

The Water Resources Authority is responsible for regulation and management of water resources in accordance with the Water Act and applicable regulations.

Relevance

WRA approval and authorization will be required for any groundwater development and abstraction associated with the proposed borehole. The proponent shall comply with applicable hydrogeological assessment, borehole construction, water-use permitting, monitoring and reporting requirements.

4.3.4 Nairobi City Water and Sewerage Company / Relevant Water Services Provider

The authorized water services provider is responsible for provision of water and sewerage services within the applicable service area.

Relevance

The proponent shall obtain the appropriate water and sewer connection approvals and comply with applicable requirements relating to connection, metering, water use, wastewater discharge and sewerage services.

4.3.5 Directorate of Occupational Safety and Health Services (DOSHS)

DOSHS is responsible for administration and enforcement of occupational safety and health requirements under the Occupational Safety and Health Act and subsidiary legislation.

Relevance

DOSHS may undertake workplace inspections and enforce requirements relating to workplace registration, risk assessment, occupational safety, health, welfare, accident reporting, first aid, fire safety and other workplace requirements.

4.3.6 National Construction Authority (NCA)

The National Construction Authority regulates the construction industry and provides for registration and regulation of construction contractors and construction works.

Relevance

The proponent shall ensure that the project and appointed contractor comply with applicable NCA registration, project registration, supervision and construction requirements.

4.3.7 Energy and Petroleum Regulatory Authority / Kenya Power

Relevant energy-sector institutions are responsible for regulation, supply and oversight of electricity and other energy-related services.

Relevance

Electrical installations, electricity connection and any regulated energy installations associated with the project shall comply with the requirements of the relevant authorities and licensed professionals.

4.3.8 National Environmental Complaints Committee

The National Environmental Complaints Committee provides a mechanism for consideration and investigation of environmental complaints and matters falling within its mandate.

Relevance

Where environmental complaints arise and fall within the Committee's jurisdiction, the applicable statutory mechanisms may be invoked.

4.3.9 National Environmental Tribunal

The National Environmental Tribunal is established under EMCA and provides a mechanism for hearing appeals arising from decisions of NEMA and other matters assigned to it under environmental legislation.

Relevance

Where a party is aggrieved by an appealable decision of NEMA concerning the project, the applicable statutory appeal mechanisms may be pursued through the Tribunal.

4.3.10 Environment and Land Court

The Environment and Land Court is established under the Environment and Land Court Act and has jurisdiction over environmental and land-related disputes within its statutory mandate.

Relevance

Land-use, environmental and development disputes relating to the project may be addressed through the appropriate statutory dispute-resolution mechanisms, including the Environment and Land Court where applicable.

4.3.11 Kenya National Highways Authority / Relevant Road Authority

Where project activities affect roads under the mandate of a national road authority, the proponent shall obtain the necessary approvals before undertaking activities within road reserves or affecting road infrastructure.

Relevance

Construction access, material delivery, temporary traffic management, utility connections and any works affecting public road infrastructure shall be coordinated with the relevant road authority and Nairobi City County as applicable.

CHAPTER FIVE: PUBLIC CONSULTATION AND DISCLOSURE

5.1 Introduction

Public consultation is useful for gathering environmental data, understanding likely impacts, determining community and individual preferences, selecting project alternatives and designing viable and sustainable mitigation and compensation plans. Public consultation process for the apartment's development took place at the scoping stage and the EIA stage. Public participation in all stages of the project is likely to contribute to maximization of expected benefits and minimization of expected negative socio-economic impacts on the immediate environment.

5.2 Objectives of the Public consultation

The specific aims of the consultation process during the EIA study stage were:

- To inform the local people, leaders and other stakeholders about the proposed Apartments development project and its objectives;
- Obtain the main concerns and perceptions of the population and their representatives

- regarding the project;
- Obtain opinions and suggestions directly from the affected communities on their preferred mitigation measures;
- To find out if there are issues or places of cultural/or religious importance to the local communities that could be negatively impacted upon by the project and its infrastructure;
- To improve project design and, thereby, minimize conflicts and delays in implementation;

5.3 Stakeholder Identification

The stakeholders were identified and are categorized into two groups; that is, the primary stakeholders, and secondary stakeholders. Primary stakeholders are those who will be directly affected by the project either positively or negatively. They consist of the project proponent, project affected persons who are the local community. Secondary stakeholders are those who can influence the project and those that will be indirectly affected by the project this includes the local administration and Nairobi City County Government Officers.

5.4 Consultation Methodology and Schedule

During the EIA study, the following methods were used to gather information from the stakeholders:

- Key informant interviews;
- Public Baraza
- Questionnaires

Key informant interviews were conducted with key stakeholders to the proposed project. Please refer to table overleaf.

Stakeholder Classification		Name of the Stakeholder	Date of the Meeting
Primary Stakeholders	Project Proponent	Zain Properties Ltd	July 2026 In constant communication
	Project Affected Persons	Church Road/Raphta Road area Residential Association - Local Community	9th September 2026 14th September 2026 16th September 2026
Secondary Stakeholders	Local Administration	Local administration / relevant Nairobi City County representatives	See Annex 11
		Assistant Chief, Church Road/Raphta Road area Location	See Annex 11
	Nairobi County Government officials	Chief Officer-Lands, Housing, Physical Planning and Urban Development	See Annex 11
		Chief Officer-Water, Environmental and Natural Resources	See Annex 11
		County Director- Gender, Cultural and Social Services	See Annex 11
		Manager, Nairobi City / Westlands area	See Annex 11
		Managing Director – Kiambu Water and Sewerage Company Limited	See Annex 11
	NEMA County Office	Nairobi County Director of Environment	See Annex 11

Table 4: Stakeholder identification and consultation schedule

5.5 Stakeholder Consultation schedule

Table 5: The public barazas were scheduled as follows:

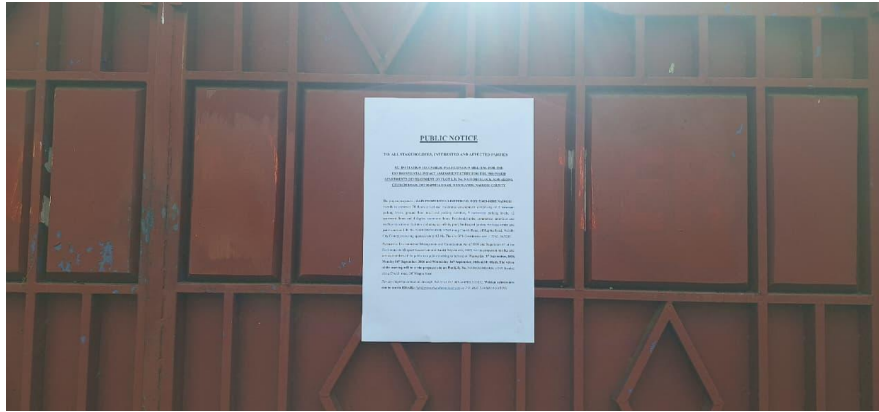
Meeting Venue	Date and time	Number of people who attended the meetings
Proposed Site, Church Road/Raphta Road area Location	09/09/2026 10.00am	21
Proposed Site, Church Road/Raphta Road area	14/09/2026 10.00am	20

Proposed Site, Church Road/Raphta Road area	16/09/2026 10.00am	22
	Total	63

See attached minutes of the public meetings and attendance lists attached in annex 11

Plate 10: Selected Photos of public meetings that took place. *See attached photos of the public meetings in annex 11*





Public Notice

Questionnaire administration and other stakeholder engagement activities were undertaken as documented in Annex 11. The consultation records should be read together with the stakeholder attendance registers, minutes, photographs and completed questionnaires attached to the report.

5.6 Summary of issues raised from the consultation process

Generally, the local administration representatives and communities were consulted to give their views towards the proposed project since they anticipate numerous benefits upon implementation of the project.

5.6.1 Benefits of the proposed project

- Improved local socio-economy by contribution to Kenya government revenue;
- Creation of employment opportunities;
- Market for construction materials;
- Improved infrastructure;
- Maximum utilization of land and generation of revenue to the project owner
- Public consultation and awareness for gathering environmental data, understanding likely impacts, determining community/ individual preferences, designing viable and sustainable mitigation plans.

5.6.2 Problems and concerns cited on the proposed development during public participation exercise.

- Possibility of air pollution / dust emissions
- Health and safety of workers;
- Noise and vibration;
- Increased generation of solid and liquid waste;
- Increased demand for water and energy use;
- Priority should be given to suitably qualified local labour and local suppliers where reasonably practicable and consistent with project requirements.
- Increased traffic during construction and operation of the proposed project
- Visual intrusion of the neighboring properties
- Privacy concerns

- Drainage concerns

5.7 Future Consultations

After collection of public views on the proposed apartments development, the proponent will be required to set the ground for future consultations with key stakeholders and the general public.

(a) Consultation approach

Throughout the project implementation, the following methods could be used to gather information from and continuously engage the various community members and other stakeholder groups:

- Key Informant Interviews;
- Public meetings (barazas);
- Roundtable meetings;
- Letters and emails;
- Public posters; and

The proponent should maintain consultation records including attendance registers, signed minutes, sample photographs for meetings, mails etc.

(b) Public availability of documents

Subject to the existing legal framework, relevant approved project reports and licensing documents should be made available at designated public offices for public inspection/access on request. In addition to the EMP to be publicized by NEMA upon completion of the EIA studies, the final EMP adopted should also be made available to the public. Hard copies should be deposited at the contractor's camp sites and at the agreed sub-county administration offices for inspection.

(c) Publicity signage and notifications

Prior to the commencement of construction, the contractor should erect publicity signage detailing the nature of forthcoming works at the site. The signage should follow the NCA standard. For any working front, the proponent in conjunction with the contractor will post notifications of forthcoming works, especially the disruptive ones. In addition, localized notifications should be made for:

- Job opportunities available;
- Any traffic disruptions
- Any irregular/hazardous work practices such as excessively noise.

(f) Construction Complaints Management

A complaints management system should be instituted by the proponent to ensure that a rapid and appropriate response is made to any public and stakeholders concerned. The proponent in conjunction with the contractor should maintain a register of complaints. Details of all complaints from the community or other stakeholders regarding any construction activities on site as well as outcomes of any investigations or actions that result from the complaint being made, should be recorded in a complaint register. The complaints should be acted on immediately.

CHAPTER SIX: ANTICIPATED IMPACTS AND MITIGATION MEASURES

6.1 Introduction

This chapter will discuss the prediction, identification and analysis of the anticipated project impacts throughout the project cycle, that is construction, operation and decommissioning phases. The identified anticipated impacts emanating from the proposed project will result to effects which may be positive or negative on the environmental and social elements. Four major parameters were used to categorize the impacts, which are;

- **Magnitude** - described as being major or minor positive/negative.
- **Duration** – refers to period/time and is described as short-term, medium or long term
- **Extent** – refers to coverage and it is evaluated in terms of being specific (localized) or widespread
- **Reversibility** – described as in terms of being reversible or irreversible.

Table 6.1: Impacts analysis throughout the project cycle

Impact	Impacts Analysis		
	Construction	Operation	Decommissioning
Provision of quality apartments		Major positive long term Localized Irreversible	
Creation of Employment	Major positive, short term, Widespread Reversible	Major positive, long term, Widespread, Irreversible	Major positive short term Localized Reversible
Generation of Revenue	Major positive short term Widespread Reversible	Major positive long term Widespread Reversible	Major positive short term Widespread Reversible
Business opportunity for goods and services	Major positive Short term Widespread Reversible	Major positive Long term Widespread Reversible	
Solid Waste	Major negative Short term, Localized Irreversible,	Major negative Long term Localized Irreversible,	Major negative Short term Localized Irreversible
Liquid waste/Effluent	Major negative Short term Localized Irreversible	Major negative Long term Widespread Irreversible	Major negative Short term Localized Irreversible
Water demand	Major negative Short term Widespread Irreversible	Major negative Long-term Widespread Irreversible	Major negative Short term Widespread Irreversible
Energy demand	Major negative Short term Widespread	Major negative Long term Widespread	Major negative Short term Widespread

	Irreversible	Irreversible	Irreversible
Noise Pollution	Major negative Short, Term Reversible Localized	Minor negative Short term Localized Reversible	Major negative Short term Reversible Localize
Air Pollution	Major negative Short term Reversible Localized	Minor negative Short term Localized Reversible	Major negative Short term Reversible Localized
Storm water drainage	Major negative Short term Widespread Irreversible	Major negative Long term Widespread Irreversible	Minor negative Short term Widespread Irreversible
Insecurity	Minor negative Short term Localized Reversible,	Major negative Long term Localized Reversible	Minor negative Short term Localized Reversible
Occupation health and safety	Minor negative Short term, Localized Reversible	Minor negative Long term Localized Reversible	Minor negative Short term Localized Reversible
Oil pollution	Minor negative Short term Localized Irreversible	Minor negative Long term Localized Irreversible	Minor negative Short term Localized Irreversible

6.2 Positive impacts

Positive impacts that shall be associated with the implementation of the project include:

6.2.1 Provision of housing units

The proposed development will provide 200 decent housing units.

6.2.2 Provision of employment opportunities

The proposed project will create employment opportunities for both skilled and semi-skilled workers. During the construction phase, the project will employ a large workforce including; project consultants, foremen, masons, plumbers, electricians, interior designers, cooks among others. For the operation phase, the project will employ a work force that will include cleaners, security guards and caretakers.

6.2.3 Provision of market for goods and services

During the construction phase, the project will consume a lot of building materials sourced both locally and in other parts of the region. This will have a positive impact towards the economic

status of the suppliers and to the national economy through VAT rates for goods.

6.2.4 Increase in revenue to the government.

Through payment of relevant taxes, rates, the project will contribute towards the national and local revenue earnings.

6.2.5 Gains in the local economy

The economy of the neighborhood will receive a boost especially during the construction phase due to workers spending on food, drinks and other necessities.

6.2.6 Improved Security

Security will be ensured around the proposed development through distribution of suitable security lights and presence of 24 hour registered security guards and CCTV surveillance. This will lead to improvement in the general security in the surrounding area.

6.2.7 Optimal Land Use

The development will result to a more economical use of the land without significant environmental degradation. The area has been zoned for high rise residential units, meaning that the proposed development will be in conformity with the zoning regulations.

6.3 *Negative Impacts and Potential Mitigation Measures*

6.3.1 Extraction and use of construction materials

Building materials such as hard core, ballast, cement, rough stone and sand required for the construction of the proposed Project will be obtained from quarries, sand harvesters etc. Since substantial quantities of these materials will be required for construction of the proposed project, the availability and sustainability of such resources at the extraction sites will be negatively affected-as they are not renewable in the short term. In addition, the sites from which the materials will be extracted may be significantly affected in several ways including landscape changes, displacement of animals and vegetation, poor visual quality and opening of depressions on the surface leading to several human and animal health impacts.

Proposed mitigation measures

- a) The Proponent will source building materials such as sand, ballast and hard core from registered quarry and sand mining firms, whose extraction sites have undergone satisfactory environmental impact assessment/audit and received NEMA approval.
- b) To reduce the negative impacts on availability and sustainability of the materials, the Proponent will only order for what will be required through accurate budgeting and estimation of actual construction requirements. This will ensure that materials are not extracted or purchased in excessive quantities.
- c) The Proponent shall consider reuse of building materials and use of recycled building materials where applicable. This will lead to reduction in the amount of raw materials extracted from natural resources as well as reducing impacts at the extraction sites.

6.3.2 Solid Waste Generation

Solid waste will be a major negative impact during the project cycle. The waste will consist of construction debris, cement bags, wood, broken glasses, containers, metal, sharp objects such as nails, organic waste, paper, and plastic among others during the development construction phase. The waste may result to blockage of drainage systems, choking of water bodies and have a negative impact to the human health. During operation phase, wastes may

be organic emanating from the kitchen, paper, plastic and containers. Unfit disposal of construction waste could have medium or long-term environmental and public health impact. Extent of this impact will be local to areas where waste is dumped or their immediate neighborhood.

Potential Mitigation Measures

- a) Segregation of waste at the source during the project cycle.
- b) Use of an Integrated Solid Waste Management System; through a hierarchy of options: source reduction, recycling, composting and reuse, will facilitate waste handling during operation/occupation phase.
- c) Engage the services of registered waste handlers to collect and transport waste to designated disposal sites.
- d) Provision for waste management rooms at strategic places within the development facility.
- e) Efficient use of building material to reduce waste and recycling/reuse where feasible.
- f) To manage waste in line with the Environmental Management and Co-ordination (Waste Management) Regulations, 2024.

6.3.3 Increase Generation of Waste Water

There will be increased generation in liquid waste as a result of increased population inflow within the project site both during construction and operation phases of the development. Inadequate provision of sanitary facilities during the construction period may result to defecation of secluded areas within the site creating unsanitary conditions and source for fly infestation. Improper liquid waste disposal may be a threat to human health for both workers and the neighboring community and also result to contamination of water resources, land and air. All liquid waste shall be properly managed through connection to the existing sewerage system that serves the area.

Potential Mitigation Measures

- a) Connecting and channeling all liquid/effluent wastes to the existing sewerage system.
- b) Provision of adequate and appropriate sanitary facilities for the workers during construction phase and tenants during the operation phase of the facility.
- c) Proper decommissioning of the sanitary facilities shall be carried out once construction is complete.
- d) Sanitary facilities shall be kept clean always through regular cleaning.
- e) Ensure regular maintenance of foul water drainage works at the premises to prevent clogging and fore-stall breakdowns.
- f) The design of the internal sewerage system shall consider the estimate discharges from individual sources and the cumulative discharge of the entire project, that is, it will have the capacity to consistently handle the loads even during peak volumes.
- g) All drain pipes passing under building should be of heavy-duty PVC pipe tube encased in concrete surround.
- h) All manholes should have heavy-duty covers set and double sealed airtight as approved by specialists.

6.3.4 Air Pollution, Particles and Dust Emission

Air pollution will be a major negative impact during the construction phase as a result of increase in levels of fugitive dust emanating from the demolition, excavation, construction activities and stockpiled earth materials. This may be a public health hazard resulting to

nuisance to the workers and the public. Air pollution may also be as a result of emission of fumes and particles or combustion of fossil fuels from the construction machinery. This is expected as a short term and reversible impact after the end of construction.

Potential Mitigation Measures

- a) Regular sprinkling of water on work areas to prevent fugitive dust violations.
- b) Use of dust nets/screens around the construction site to contain and arrest dust.
- c) Use environmentally friendly fuels such as low Sulphur diesel.
- d) Minimize the period for idling of machinery and construction vehicles.
- e) Minimize exposed areas through the schedule of construction activities to enable dust control.
- f) Regular and prompt maintenance of construction machinery and equipment to minimize generation of hazardous gases.
- g) Ensure no burning of waste such as paper and plastic containers on sites/non- designated areas.
- h) Onsite dirt piles or other stockpiled material should be covered, wind breaks installed, water and/or soil stabilizers employed to reduce wind-blown dust emissions.
- i) Restricting heights from which materials are to be dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading.
- j) Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials will not leak from the vehicle.
- k) Provide PPEs to the workers in dusty areas on the site.
- l) Monitor the air pollution levels regularly as per the Air Quality regulations.

6.3.5 Noise and Excessive Vibrations

Noise pollution will be a negative impact and short term limited to the construction period. The noise will be caused by the construction activities, use of heavy machineries and vehicles during transportation of materials to and from the site. Vibrations will be experienced during the excavation, concrete vibration during concreting of the structural elements and hacking of the walls and building elements during plastering of the structure. On occupation and operation of the facility, there will be minimal noise and vibrations from the units.

Potential Mitigation Measures

- a) Construction works shall be carried out only during the day from 0800hrs to 1800 hrs.
- b) Noise shields shall be used on noisy equipment, such as corrugated iron sheet structures, to minimize the exposure to the neighbors and other workers within the site
- c) The construction vehicles and machinery shall be switched off when not in use to reduce idling time.
- d) All noisy activities shall be scheduled concurrently during the construction period to reduce the exposure period to the PAPs.
- e) Equipment installed with noise abatement devices shall be used as much as practicable.
- f) All machines and equipment shall be maintained regularly to reduce frictional noise.

- g) All workers shall be trained and provided with PPEs such as helmets, earmuffs, dust mask, etc. which will be used at all times when operating within the site area.
- h) Drivers delivering materials shall avoid unnecessary honking of the trucks/vehicles.

- i) Bill board shall be erected at the construction site entrance to notify of the construction activities and timings.
- j) Regular monitoring of noise levels at the site as per the regulations.

6.3.6 Water Demand and Usage

The demand and usage for water will increase during the project cycle. During construction, water will be required for activities such as cement mixing, curing of concrete, sprinkling of water on dusty areas to suppress dust and drinking water for workers. During operation phase, water will be needed for bathing, washing, cleaning, drinking and cooking. This will place strain on the existing water supply by Nairobi City County Sewerage and Water Company.

Potential Mitigation Measures

- a) Develop the proposed borehole only after completion of the required hydrogeological assessment and obtaining the applicable WRA authorisation to construct the borehole works and water-use permit. The borehole shall supplement, and not replace, the NCWSC supply.
- b) Construction water supplied by bowsers shall be obtained from authorised sources and transported by compliant suppliers.
- c) Provision of adequate underground and roof tanks for water storage that covers two days' water demand.
- d) Use water efficient appliances and fixtures for conservation of water during the project cycle.
- e) Provide notices and information signs to sensitize on means and needs to conserve water resource i.e., "Keep/Leave the Tap Closed", etc. This will awaken the civic consciousness of the workers and residents with regard to water usage and management.
- f) Prompt detect and repair of all the water fixtures and fittings to reduce water wastage.

6.3.7 Energy Demand and Usage

There shall be increased demand and use of energy during the construction stage (fuel for running machinery and other equipment) and during operation phase (electricity used by the occupants of the units). Energy conservation is thus fundamental and shall involve optimum use of petroleum products (diesel and gasoline), electrical appliances (equipment), lighting systems and other electric machinery as used for different purposes. It also includes use of renewable energy sources.

Potential Mitigation Measures

- a) Turn off machinery and equipment when not in use.
- b) Use of solar energy as an alternative source of energy.
- c) Monitor energy use during construction and set reasonable limit.
- d) Put off all lights immediately when not in use or are not needed.
- e) Install and routine maintenance of energy efficient appliances e.g., LED bulbs etc.
- f) Exterior lights shall be controlled by a programmable timer.
- g) The water booster set will contain inverter pumps for energy saving and precise

control of flow and pressure rate.

- h) Generator should be provided as a full backup energy source throughout the development.

6.3.8 Surface Run-off and Storm Water Drainage

The proposed project construction phase will lead to increased release of sediments into the drainage systems. The building roofs and pavements may lead to increased volume and velocity of storm water or run-off flowing across the area covered by the building. This can lead to increased amounts of storm water entering the drainage systems, resulting in overflow and damage to such systems.

Potential Mitigation Measures

- a) Semi permeable materials will be used for construction of pavements.
- b) After completion of construction, the proponent shall embark on comprehensive landscaping.
- c) Drainage channels shall be covered; say with gratings, to avoid occurrence of accidents and entry of dirt.
- d) Construct gently sloping drains to convey water at non-erosive speed directing the storm water to the main drainage system in the area.

6.3.9 Fire Outbreak Risks Occurrence, Response and Safety

The operations that lead to fire outbreaks include poor handling of electricity systems, faulty electrical equipment, carelessness etc. These should be avoided both during construction and operation phases of the project through provision of firefighting facilities, proper training and sensitizations.

Potential Mitigation Measures

- a) Post “No smoking signs” where flammable materials are stored.
- b) Hire competent and properly authorized electrical contractor to do the electrical works.
- c) Train staff on the use of the available firefighting equipment. At least one person trained on handling firefighting equipment should be available through-out the construction phase of the project.
- d) Conduct regular firefighting drills within the site.
- e) Develop and post at the site fire emergency and evacuation procedures.
- f) Provide adequate number of appropriate firefighting equipment at accessible strategic places within the property.
- g) Organize for inspection and maintenance of fire equipment at least once in a period of six months.
- h) Maintain on site telephone contacts for fire brigade, G4S fire brigade and St. Johns ambulance service provider.

6.3.10 Oil Leakages and Spills on the Environment

Though this may not be common at the site, it is wise to control and observe the little that could occur especially during maintenance of the involved machinery. During operational phase, oil spills might occur at the parking lots and cooking oil from kitchens.

Potential Mitigation Measures

- a) All machinery shall be keenly inspected not to leak oils on the ground. This can be ensured through regular maintenance.
- b) Install oil trapping equipment in areas where there is a likelihood of oil spillage

- c) Maintenance will be carried out in a well-designed and protected area and where oils/grease is completely restrained from reaching the ground. Such areas should be covered to avoid storm from carrying away spilled oils into the soil/water systems.
- d) All oils/grease and materials will be stored in a site's store, in the contractor's yard.
- e) Proper disposal of oil handling materials such as drums, oily clothes/papers/materials and cans.
- f) All drainage facilities shall be fitted with adequate functional oil-water separators and silt traps.
- g) Collect the used oils and re-use, re-sell, or dispose of appropriately using expertise from contracted licensed waste handlers.

6.3.11 Emergence and Spread of Social Vices

The proposed development will lead to potential for employment opportunities and access to new services which will draw people to the area more specifically the project site. This factor will further lead to a temporary increase in economic activities and employment of skills for the development. This will lead to population influx which might lead to changes in or unwanted behaviors in the area. This unwanted or change in behavior may be in the form of loose morality, an increase in school drop-out due to cheap labor, child labor, drug use and abuse, theft/robbery and increased incidences of HIV/AIDS and related infections/diseases and other communicable diseases.

Potential Mitigation Measures

- a) To minimize project effects on local social set up, the proponent will;
- b) The contractor shall ensure that there is adequate street lighting and a security guard within the site to help curb with issues that may arise from theft. Also installing 24hr operating CCTV surveillance, which will be monitored regularly.
- c) It is recommended that the contractor employs workers from the immediate area where possible to avoid social conflict
- d) Conduct periodic sensitization forums for employees on ethics, morals, general good behavior and the need for the project to co-exist with the neighbors.
- e) Offer awareness, guidance and counselling on HIV/AIDS and other STDs to employees;
- f) Provide safety tools such as condoms to employees
- g) Ensure enforcement of relevant legal policy on sexual harassment and abuse of office.

6.3.12 Occupational Health and Safety

During construction phase, there will be increased air and noise pollution which are considered harmful to human health. The neighbors and workforce involved shall be subjected to these environmental hazards putting them at high risk. Waste material such as pieces of glass and nails left lying on the ground may cause injuries/accidents to the workers on site. Food for the construction workforce is usually provided by mobile individuals most of which operates without licenses. This can compromise health of the workers especially if such foodstuffs are prepared in unhygienic conditions.

Potential Mitigation Measures

- a) Provide adequate and functional sanitary facilities for the workers.
- b) All workers shall use properly fitting PPEs to avoid injuries and illness which include working boots, overalls, helmets, goggles, earmuffs, masks, gloves etc.

- c) Provide appropriate signage and warnings in work areas to avoid injuries to the workers and occupants.
- d) The contractor shall adapt a suitable emergence response plan to manage occurrence of anticipated hazards during construction phase.
- e) Safety awareness may be gained through regular safety meetings, safety training or personal interest in safety and health.
- f) Provide first aid facilities and ensure that workers are trained on emergency response such as first aid skills.
- g) Local individuals preparing food for the workers at the site shall be controlled, monitored and evaluated to ensure that food is hygienically prepared.
- h) Workers shall always be sensitized on social issues such as drugs, alcohol, diseases such as HIV/AIDS and STIs etc.
- i) Comply with OSHA 2007 and all other relevant regulations governing health and safety of workplaces.

6.3.13 Impacts on Workers' and Community Health and Safety

Workers and local community members in the project area may be exposed to various risks and hazards including falling from height during construction which may lead to fatality, falling objects, collapsing of excavations, road accidents, slips and trips, flammable and explosive substance, electrical shocks, dust, noise and vibrations, poor hygiene, fire exposures, bruises and cuts, etc.

Potential Mitigation Measures

The proponent and project contractor will implement all necessary measures to ensure health and safety of the workers and the general public during construction, operation and decommissioning of the proposed development as stipulated in the Occupational Safety and Health Act, 2007.

6.3.14 Increased Traffic

Obstruction by construction transport vehicles and construction activities adjacent to the nearby roads during the construction phase may lead to the increase traffic along Church Road and the surrounding Raphta Road network. This may be exacerbated if these activities time/schedule coincide with Peak Traffic hours.

Proposed mitigation measures

- a) Ensure that the Entry/Exit to the project site is located where it will cause minimal traffic along adjacent roads
- b) Ensure all construction vehicles to and from the construction site use the designated Entry/Exit to the project site
- c) All transportation of construction raw materials and excavated materials are to be conducted at traffic off peak hours only
- d) Ensure there is a traffic marshal at the site directing traffic especially during morning when pupils are going to school and in the evening when they are going home.
- e) Sensitize truck drivers to avoid unnecessary road obstruction
- f) Cover all trucks hauling soil, sand and other loose materials to avoid spillage and dust emissions that may interfere with smooth motoring

- g) "NO PARKING" signs will be posted around the building where Parking is prohibited and likely to cause obstruction as well as other necessary traffic signs.

CHAPTER SEVEN: ANALYSIS OF PROJECT ALTERNATIVES

7.1 Introduction

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.

7.2 'No Action' Project Alternative

This option implies forfeiting the proposed development and thus avoiding both the positive and negative impacts that would have arisen during its implementation. This option is mostly applicable in situations where the proposed project area is in ecologically sensitive areas. The land in which the proposed project is to be constructed is in a stable environment and therefore will not be affected by this development activity. From a socio-economic perspective the "no action" alternative may not be the best alternative as the numerous benefits to be gained from the development both locally and nationally would not be realized and the resources in the area would continue to be underutilized. Furthermore, the development is intended to provide additional residential accommodation within the established urban area and support the efficient utilisation of serviced urban land.

7.3 Proposed Project Alternative

The proposed development is subject to the applicable Nairobi City County zoning, development-control and building approval requirements. The project alternative is assessed against the approved planning framework, infrastructure capacity and environmental safeguards.

7.4 Alternative Design

This option entails undertaking the project but with different infrastructural designs that encompass buildings layouts and location of supporting infrastructure. The presented project design was however achieved by considering the options available that would ensure cost-effectiveness and avoid or reduce environmental and social impacts as much as possible. The prevailing design shall increase commercial viability as well as its targeted balance with nature that will create ambient living conditions for its occupants. The proponent has settled on the proposed design after thorough consultation with architect and engineers. The design meets the proponent's vision and objectives.

7.5 Alternative Construction Materials and Technologies

There is a wide range of construction and furnishing materials which can be sourced locally and internationally most of which shall be low maintenance and environmentally sound. 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 form work. The concrete structure will be built using locally sourced sand, cement, metal bars and fittings that meet the Kenya Bureau of Standards (KBS) requirements. The metal scaffolds will be advantageous than timber because it will reduce the wasting of precious trees, has a longer

lifetime, provides a steady and firm standing, easily assembled and dismantled and it increases the work efficiency.

The technologies available include the conventional brick and mortar style, concrete frame construction, prefabricated concrete panels, timber construction, steel and aluminum frame and Expanded Polystyrene Technology. The proponent has preferred the use of reinforced concrete frame construction as the technology is durable, offers outstanding resistance to explosion and/or impact and performs well during both natural and man made disaster. Reinforced concrete can also endure very high temperatures from fire for a long time without loss of structural integrity. Priority shall be given to construction techniques and materials that is environmentally friendly, save on time and cost of construction.

7.7. Waste Water Management Alternatives

Four locally available technologies are discussed below: -

7.7.1 Alternative One: Waste Water Treatment Plant

This involves the construction of a plant that will enable the recycling of the waste water from the project activities to reusable standards and utilised within the site in activities such as irrigating the flower gardens and flashing of the toilets. It is usually expensive to construct and maintain, but it is the most reliable, efficient and cost-effective in the long term. This option is not viable for the proposed project due to lack of space.

7.7.2 Alternative Two: Use of Stabilization Ponds/Lagoons

This refers to the use of a series of ponds/lagoons that allow several biological processes to take place, before the water is released back to the river. The lagoons can be used for aquaculture purposes and irrigation. However, they occupy a lot of space but are less costly. No chemicals are used/heavy metals sink and decomposition processes take place. They are usually a nuisance to the public because of smell from the lagoons/ponds. This option is not preferable in the area because the required space is not only available, and the local community are not likely to accept the option.

7.7.3 Alternative Three: Use of Constructed/Artificial Wetland

This is one of the powerful tools/methods used in raising the quality of life and health standards of local communities in developing countries. Constructed wetland plants act as filters for toxins. The advantages of the system are the simple technology, low capital and maintenance costs required. However, they require space and a longer time to function. Long term studies on plant species on the site will also be required to avoid toxin accumulation in the plants. Hence it is not the best alternative for this kind of project

7.7.4 Alternative Four: Use of Septic Tank

This involves the construction of underground concrete-made tanks to store the sludge with soak pits. This option is viable in instances where the project is not served with a sewer system or is far from a sewer line.

7.7.5 Alternative Five: Use of Existing Sewer Line Systems

This involves seeking approvals from the relevant authority and connecting the proposed project development with the existing approved public sewer system operated by NCWSC that exists and offers services within the area. This is the most viable alternative since the proposed development surrounding site area is connected and served by a 1.5M wide sewer system in addressing waste water issues.

The developer has opted in using the existing sewer systems for management of waste water generated throughout the project cycle.

7.8 Solid Waste Management Alternatives

Throughout construction, the project will produce wastes such as excavated soil, wood chips, metal scraps and paper wrappings among other. Wastes to be generated during operation phase are mainly domestic in nature. The Proponent is expected to observe EMCA (Environmental Management and Co-ordination (Waste Management) Regulations, 2024).

An Integrated Solid Waste Management System (ISWMS) is recommended for management of all solid wastes generated throughout the projects phases. The following shall be given preference in its descending order:

- a) The developer shall give priority to waste reduction at source of the materials. This option will demand a solid waste management awareness programme in the management and the residents.
- b) Secondly, Reducing, Recycling, Reuse and composting of the waste. This calls for a source separation programme to be put in place. The recyclables will be sold to waste buyers within Nairobi City County or donated.
- c) Finally, sanitary land filling will be the last option for the developer to consider.

CHAPTER EIGHT: ENVIRONMENTAL MANAGEMENT PLAN

8.1 *Introduction*

The Environmental Management Plan is an important process of ensuring project sustainability and environmental and social protection. The process and plan involve measurement of relevant parameters, at a level of details accurate enough, to distinguish the anticipated changes. It is therefore important to integrate the environmental and social impact assessment process, an environment monitoring and management plan that includes the monitoring of the progress of mitigation measures being implemented while also monitoring the project for any new negative impacts that were not earlier considered or anticipated.

Monitoring aims at determining the effectiveness of actions to improve environmental quality. The EMP outlined in the tables below addresses the identified issues of concern (potential negative impacts) and mitigation measures as well as roles, costs and monitorable time-frame that can help to determine the effectiveness of actions to upgrade the quality of environment; as regards the proposed project. The EMP have been considered for all phases; construction, operational and decommissioning phases

8.2 Construction Phase Environmental Management Plan

Table 8. 1: Environmental management and monitoring plan during construction phase

	Source Of Impact	Poten tial Impa ct	Controls	Responsibili ty	Timing	Performance Indicator	Monitor ing Require ment
General sit e managem ent	General construction activities; unsafe site conditions; unsafe acts and practices	Accidents with potential to cause physical injury, damage to property; environmental pollution	Provide Environmental, Health and Safety training to workers to ensure that they understand the requirements of the environmental, health and safety management plans as applicable to their responsibilities	Contractor	Constructi on Phase	Trainings carried out on the EMP and HSP	Quarterly inspection of training records
			Ensure that workers sign a code of conduct to observe established procedures and are well behaved towards the surrounding community	Contractor	Constructi on Phase	Signed code of conduct by worker	Quarterly inspection of worker contracts
Visual and landscape managem ent	Site clearance; Excavations; alteration of ground level; piling	loss of vegetation; soil erosion; siltation of water courses; loss of	Maintain as much as possible the natural drainage systems and patterns;	Contractor	During Constructi on	Non-interference with drainage patterns;	Regular (mont hly) Inspections
			Preserve the existing natural vegetation as much as possible	Contractor	During Constructi on	Number of mature trees cleared/retained	Regular (mont hly) Inspections

	of spoils on site	aesthetic value	Ensure the protection of vegetation using any of the following methods: mark, flag or fence areas of vegetation to be preserved; designate limits of root systems (tree drip line); and locate construction traffic routes, spoil piles etc away from existing vegetation	Contractor	During Construction	Marks, Fences and flags around vegetation to be preserved; storage of spoils away from vegetation	Regular (monthly) Inspections
			Where possible, commence landscaping activities as soon superstructures are erected;	Contractor	During Construction	Commenced landscaping works	Regular (monthly) Inspections
			Set out a plan for re-vegetation of disturbed areas,	Contractor	During Construction	Revegetation plan for disturbed areas	Once towards Project completion
			Prioritize indigenous trees and shrubs in the choice of plants	Contractor	During Construction	Species of trees proposed for revegetation	once-Upon preparation of revegetation plan

	Source Of Impact	Poten tial Impa ct	Controls	Responsibili ty	Timing	Performance Indicator	Monitor ing Require ment
Air pollution, particle and dust emissions	Earthworks; vehicle movements; transportation of materials and wastes; running of engines and motors	local air pollution by dust and exhaust fumes; potential respiratory illnesses among impacted neighbors	Sprinkle water on work areas, and materials heaps to minimize dust emissions;	Contractor	During construction	Dust levels at the site and accesses	Regular (weekly) inspections; sprinkling records
			Minimize exposed areas through the schedule of construction activities to enable dust control	Contractor	During construction	Disturbance outside active work areas	Regular (weekly) inspections
			Utilize vegetation, mulching, sprinkling and stone/gravel layering to quickly stabilize exposed soil	Contractor	During construction	Stabilized sections at construction site and accesses	Regular (weekly) inspections
			Identify and stabilize primary entrances/exits prior to commencement of construction;	Contractor	During construction	Stabilized site entrance/exit	Regular (weekly) inspections
			Direct construction vehicular traffic to stabilized roadways	Contractor	During construction	Existence of stabilized roadway; Use of stabilized roadways by construction traffic	Regular (weekly) inspections

			Maintain equipment and machinery to manufacturers' specifications by regular servicing to maintain efficiency in combustion and reduce carbon emissions;	Contractor	During construction	opacity of exhaust gases from vehicles; Regular maintenance of vehicles; vehicle maintenance schedule	Quarterly inspection of maintenance records
			Use environmentally friendly fuels such as low Sulphur diesel;	Contractor	During construction	Type of fuel in use	Quarterly inspection of maintenance records
			Minimize the period for machinery idling	Contractor	During construction	Existing practices and awareness of operators about machinery idling	Quarterly inspection of maintenance records
			Ensure that no burning of waste is done on site; and	Contractor	During construction	Waste Disposal methods in use	Weekly inspection of practices
			Provide appropriate Personnel Protective Equipment such as dust masks to site workers.	Contractor	During construction	Existence and usage of PPE	Weekly inspection of usage of PPE

	Source Of Impact	Poten tial Impa ct	Controls	Responsibili ty	Timing	Performance Indicator	Monitor ing Require ment
Energy demand and usage	Use of fossil fuel-ran and/or electricity-ran equipment in construction works	Increased demand on fossil fuel and electricity to run equipment	Ensure the use of rated equipment in welding and related works;	Contractor	During Constructi on	Rating cards/plaque on equipment	One-time inspection of existence of rating cards on equipment
			Maintain equipment and machinery to manufacturers' specifications by regular servicing to maintain efficiency in combustion and reduce carbon emissions	Contractor	During Constructi on	Established maintenance schedules for equipment in use	Quarterly review of maintenance records for adherence to schedules
			Use environmentally friendly fuels such as low Sulphur diesel;	Contractor	During Constructi on	Type of fuel in use on equipment	Quarterly review of the fuel type in use
			Minimize the period for machinery idling to save on fuel	Contractor	During Constructi on	Existing practices and awareness of operators about machinery idling	Visual observation of practices in weekly inspections
			Specify and procure the most energy efficient plant options fit for purpose and avoid use of plant with unnecessary and excess capacity	Contractor	During Constructi on	List of requirements for each type of equipment	inspection o f equipment against specifications

Noise and vibrations management	Nuisance to surrounding communities	Potential to cause physical injury, damage to property; environmental pollution	Install portable hoods to shield compressors and other small stationary equipment where necessary	Contractor	During Construction	Presence of noise attenuation features on equipment	monthly inspection of equipment features and state
			Endeavour to use equipment installed with noise abatement devices as much as practicable;	Contractor	During Construction	Presence of noise attenuation features on equipment	Monthly inspection of equipment features and state;
			Reduce idling time on trucks and other noisy equipment	Contractor	During Construction	awareness of operators about machinery idling	quarterly noise measurements at point sources
			Encourage drivers to turn off vehicle engines when not in use and avoid unnecessary hooting/revving of engines;	Contractor	During Construction	Switch off machinery when not in use	quarterly noise measurements
			Provide personal protective equipment such as ear muffs to workers at the site as necessary; and	Contractor	During Construction	Existence and usage of PPE	Weekly inspection of usage of PPE
			Carry out construction work during the day only. No works shall be carried out on Sundays	Contractor	During Construction	Defined construction hours of between 7am and 6pm	

	Source Of Impact	Poten tial Impa ct	Controls	Responsibili ty	Timing	Performance Indicator	Monitor ing Require ment
Increased Water demand and usage	Constructio n water needs; generation of wastew ater during construction works	Increased demand in the project are a; contaminati on of surface an d ground wat er resources	Close water taps when not in use. Repair broken pipes	Contractor	During Constructi on		
			Ensure that water is used efficiently by avoiding extravagant water use and wastage;	Contractor	During Constructi on	Instituted measures for efficiency in consumption	Continuous review of usage and water requirements
			Monitor water consumption and maintain records;	Contractor	During Constructi on	Installed consumption meter(s); records of deliveries by bowsers	Monthly inspection of records
			Harvest storm water wherever possible to supplement other sources of water;	Contractor	During Constructi on	Water harves ting infrastructure at the site	Quarterly review of water harvesting opportunities
			Channel construction wastewater into temporary holding ponds to allow sedimentation before release in to the environment; and	Contractor	During Constructi on	Presence of a sump for holding construction wastewater	Visual observation in weekly review of effectiveness of the sump

			Recycle and reuse construction wastewater wherever possible	Contractor	During Construction	Evidence of recycling of wastewater at the site	Monthly review of opportunities for reuse or used of recycled water
Soil erosion	Excavation for foundations; leveling of the site; compaction of the soil by construction vehicles and machinery; storage and handling of hazardous materials and wastes at the site	Compaction of soil by vehicles leading to loss of soil structure and increased susceptibility to erosion; depletion of fertile top soil at the site; contamination of soil resources from spillage	Salvage, stockpile and ensure re-use of native topsoil during re-vegetation activities in disturbed areas	Contractor	During Construction	Preservation and reuse of topsoil at the site	Visual observation in quarterly inspection of soil management practices
			Identify fertile soil borrow-pits as close as possible to the project site;	Contractor	During Construction	Nearness of identified borrow pits	One-time inspection of identified borrow pit
			Ensure re-vegetation of disturbed areas as soon as possible to prevent soil erosion;	Contractor	During Construction	Time lag between disturbance actions and revegetation	Visual observation in monthly inspection of activities and program of works
			Ensure that construction vehicles use predetermined tracks at the site to reduce ground compaction;	Contractor	During Construction	Established tracks/paths for use by construction vehicles	Visual observation in weekly inspection of the site for extent of compaction

		ges and leakages of hazardous materials and wastes; erosion					outside
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SEPTEMBER		and sedimentation of surface water resources					established tracks
			Utilize vegetation, mulching, sprinkling and stone/gravel layering to quickly stabilize exposed soil Utilize vegetation, mulching, sprinkling and stone/gravel layering to quickly stabilize exposed soil	Contractor	During Construction	Stabilized sections at construction site and accesses	Visual observation in monthly inspection of accesses
			Identify and stabilize primary entrances/exits prior to commencement of construction	Contractor	During Construction	Stabilized site entrance/exit	Visual observation in monthly inspection of entry/exit for effectiveness of stabilization
			Construction wastewater shall be channeled to a predetermined area such as a temporary holding pond where sedimentation can take place and reduce the amount of soil carried away in wastewater;	Contractor	During Construction	Presence of a sump for holding construction wastewater	Visual observation in weekly inspection of use and effectiveness of the sump
			Oils, fuels, paints and any hazardous materials to be stored in accordance with their respective MSDS's, and in such a manner to avoid spillages or leakages. Bund walls should be constructed around these substances' storage area so as to enable containment in the event of spillage or leakage	Contractor	During Construction	Storage of hazardous chemicals and wastes in bunded areas	Visual observation in weekly inspection of storage practices and evidence of

							leakage/spillage
			Implement erosion and sedimentation controls and ensure proper disposal of liquid waste	Contractor	During Construction	Use of silt traps on potential erosion channels	Monthly inspection of effectiveness of silt traps
Traffic management	Construction vehicles movements in the project area	Accidents involving the surrounding community ; nuisance from snarl ups	Contractor shall ensure that construction traffic movement does not coincide with the known rush hours in the project area, and that speed and loading limits are observed	Contractor	During Construction	Delivery times for materials and carting of wastes; established speed limits	Review of delivery records for delivery times
			Develop a traffic management plan to ensure that site vehicles do not interfere with the regular traffic on the access roads, or pose safety hazards to site workers or the general public	Contractor	During Construction	Established Traffic management plan	Monthly review of effectiveness of the Traffic management plan
			Set up traffic control/warning signs along the access road near the site entrance informing other motorists of potential hazards of construction vehicles turning	Contractor	During Construction	Erected warning signage at critical areas	Visual observation in weekly inspection of signages

	Source Of Impact	Poten tial Impa ct	Controls	Responsibili ty	Timing	Performance Indicator	Monitor ing Require ment
Oil leakages and Spills on the environm ent	Construction Machinery	Soil, water pollution	Proper storage, handling and disposal of new oil and used oil and related wastes	Contractor	During construction	Vehicle maintenance schedule	Daily inspection
			Maintain construction machinery and equipment to avoid leaks	Contractor	During construction	Vehicle maintenance schedule	Routine maintenance
			Maintenance of construction vehicles to be carried out in the contractor's yard (off the site)	Contractor	During construction	Vehicle maintenance schedule	Routine maintenance
			Provide oil interceptors along the drains leading from service bays	Contractor	During construction	Vehicle maintenance schedule	Routine maintenance
Solid Waste managem ent	Use of materials in construction; rejection of defective construction materials; packaging of materials	Generation of construction wastes that cause environmental pollution, nuisance and breeding grounds					
			Recycle and re-use construction waste as much as possible;	Contractor	During Construction	Amount of recycled wastes at the site	Monthly review of records on quantities of recycled materials
			Ensure that all non-recyclable/reusable wastes are cleared from site at the earliest opportunity to avoid pile-up;	Contractor	During Construction	Existent plans for off-site disposal of wastes	Weekly review of waste management practices

		for vermin	Avoid mixing excess concrete if possible. Discard excess concrete in a designated area;	Contractor	During Construction	Amount of concrete that is disposed as waste	Review of quantities of concrete wastes generated
			Washing of concrete-coated vehicles/equipment off-site or in a designated area. The concrete wash area will be at least 50m away from storm drain inlets or open drainage facilities. Runoff from onsite concrete wash area shall be contained in a temporary pit where concrete can set;	Contractor	During Construction	Designated wash area; an existent concrete washout pit at the site	Weekly review of usage of wash area and maintenance of washout pit
			Surface runoff within the site to be diverted in order to avoid flushing away soil and other material. Sediment traps to also be installed to remove sediments before discharge of the runoff from the site;	Contractor	During Construction	Installed sediment traps; lined drain for channeling of runoff	Monthly review of effectiveness of the site drainage
			Establish measures to ensure that construction material requirements are carefully budgeted to avoid leftovers;	Contractor	During Construction	Existent stock management plans	Quarterly review of inventories to

	Source Of Impact	Poten tial Impa ct	Controls	Responsibili ty	Timing	Performance Indicator	Monitor ing Require ment
Health and safety of workers	Use of hand tools and machinery in construction ; construction vehicle movements; housekeeping practices at the construction site; unsafe acts by construction workers	Physical injuries to workers and/or the public; damage to property	All workers will be sensitized before construction begins, on how to control accidents related to construction.	Contractor Proje ct mana ger	During Constru ction	Level of compliance with OSHA provisions	Routine inspection
			A comprehensive contingency plan will be prepared before construction begins, on accident response.				
			Keep record of the public emergency service telephone numbers including: Fire brigade, Ambulance.				
			Accordingly, adherence to safety procedures will be enforced.				
			Provide first aid kits at strategic places in the site.				
			All workers to wear protective gear during construction e.g. helmets.				
			Provide clean water and food to the workers.				
			Construction work will be limited to daytime only.				
			Workers to be adequately insured against accidents. Ensure that the workers are registered with NHIF and NSSF and remits appropriate fee				
			Develop and implement a detailed and site-specific Emergency Response Plan				

			Provide adequate sanitary facilities on site; and				
			Provide for First Aid facilities as per the OSHA, 2007, and ensure that workers are trained on emergency response such as first aid skills;				
			Provide and clearly display emergency contacts on site;				

	Source of Impact	Potential Impact	Controls	Responsibility	Timing	Performance Indicator	Monitoring Requirement
Raw materials extraction and use in construction	Extraction of raw materials such as sand, masonry stones, ballast	environmental degradation at quarry sites	Source construction materials such as sand, ballast, quarry stones, and hard core from registered and approved quarries and sand mining firms;	Contractor	During Construction	Available permits for materials sites	Annual check of the licensing status of materials sources
			Implement stringent inventory management mechanisms and only order for materials after a fairly accurate estimation of actual construction requirements; and	Contractor	During Construction	existent stock management plans	quarterly review of procurement plans for materials
			Manufacture building elements off-site where possible, and deliver to site.	Contractor	During Construction	Existing arrangements for offsite preparation of building elements	Quarterly review of opportunities for off-site manufacture of elements

Increase Generation of Waste Water	Workers at the site	Soil and water pollution	Connecting and channeling all liquid/effluent wastes to the existing sewerage system. Provision of adequate sanitary facilities for the workers during construction and tenants during the operation phase of the facility. Proper decommissioning of the sanitary facilities shall be carried out once construction is complete. Sanitary facilities shall be kept clean always. Ensure regular maintenance of foul water drainage works at the premises to prevent clogging and fore-stall breakdowns. All drain pipes are heavy duty PVC pipe tube encased in concrete surround. All manholes should have heavy-duty covers set and double sealed airtight as approved by specialists.	Contractor	During construction and operation		
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	Source Of Impact	Potential Impact	Controls	Responsibility	Timing	Performance Indicator	Monitoring Requirement
Surface Run-off and Storm Water Drainage	Rain water	Flooding and accidents	Semi permeable materials will be used for construction of pavements. After completion of construction, the proponent shall embark on comprehensive landscaping. Drainage channels shall be covered; say with gratings, to avoid occurrence of accidents and entry of dirt. Construct gently sloping drains to convey water at non- erosive speed directing the storm water to the main drainage system in the area.	Contractor and proponent	During construction and operation	Clean and unclogged drainage	Routine inspection

Fire Outbreak Risks Occurrence, Response and Safety	Any source that may ignite fire or cause fire	Destruct ion of properti es, loss of lives	<i>a)</i> Post “No smoking signs” where flammable materials are stored. <i>b)</i> Hire competent and properly authorized electrical contractor to do the electrical works. <i>c)</i> Train staff on the use of the available firefighting equipment. At least one person trained on handling firefighting equipment should be available throughout the construction phase of the project. <i>d)</i> Conduct regular firefighting drills within the site. <i>e)</i> Develop and post at the site fire emergency and evacuation procedures. <i>f)</i> Provide adequate number of appropriate firefighting equipment at accessible strategic places within the property. <i>g)</i> Organize for inspection and maintenance of fire equipment at least once in a period of six months. <i>h)</i> Maintain on site telephone contacts for fire brigade, G4S fire brigade and St. Johns ambulance service provider.	Contractor and proponent	During construction and operation	No fire outbreaks	Routine inspection
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Emergency and spread of social vice	Workers and tentants	Spread of HIV and security risks	To minimize project effects on local social set up, the proponent will; The contractor shall ensure that there is adequate street lighting and a security guard within the site to help curb with issues that may arise from theft. Also installing 24hr operating CCTV surveillance, which will be monitored regularly. It is recommended that the contractor employs workers from the immediate area where possible to avoid social conflict Conduct periodic sensitization forums for employees on ethics, morals, general good behavior and the need for the project to co-exist with the neighbors. Offer awareness, guidance and counselling on HIV/AIDS and other STDs to employees; Provide safety tools such as condoms to employees Ensure enforcement of relevant legal policy on sexual harassment and abuse of office.	Contractor and proponent	During construction and operation		Scheduled review
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8.3 Operation Phase Environmental Management Plan

Table 8. 2: Environmental management and monitoring plan during Operation phase

	Source Of Impact	Potential Impact	Controls	Responsibility	Timing	Performance Indicator	Monitoring Requirement
Noise management	Use of the standby power generator during grid-power outages	Noise nuisance	Ensure that noise abatement devices are installed and maintained for the standby generator for power supply	Proponent	Operation Phase	Noise levels from the standby generator when in use	Annual noise measurements
Energy resource management	Use of electrical appliances; lighting within the development	Increased demand on grid energy supply	Encourage members to conserve energy through awareness programs	Proponent	Operation Phase	Instituted awareness and conservation program	Annual audit
			Install and maintain energy efficient appliances e.g., indoor lights and outdoor security lights; and	Proponent	Operation Phase	Installed energy efficient lighting	Annual audit
			Continually seek avenues for energy conservation as international best practices evolve	Proponent	Operation Phase	Other energy-saving measures instituted	Annual audit
Water resource management	Usage of water by tenants	Increased water demand;	Incorporate water accounting systems and metering for all areas;	Proponent	During Operation	Installed water meters	Annual EA
		increased generation of	Encourage members to conserve water through awareness programs;	Proponent	During Operation	Instituted awareness programs	Annual EA

		f wastewater	Install and maintain low volume fixtures in toilets, baths and other wet areas;	Proponent	During Operation	Installed low-volume fixtures	Annual EA
			Use harvested storm water in cleaning and irrigation of lawns; and	Proponent	During Operation	Use of harvested stormwater around the compound	Annual EA
			Continually seek new avenues for water conservation as International best practices evolve.	Proponent	During Operation	other conservation measures institute	

	Source Of Impact	Potential Impact	Controls	Responsibility	Timing	Performance Indicator	Monitoring Requirement
Waste management	Occupation of the housing by the tenants; consumption/use of materials	Generation of wastes; environmental pollution and creation of health and safety hazards from mismanagement of wastes	Pursue waste minimization at source principles e.g., zero generation, reduction, re-use and/or recycling;	Proponent	Operation phase	Implemented measures for reuse/recycling at household level	Annual environmental audit
			Provide mechanisms to segregate wastes at source, ensure that all wastes are stored temporarily at the designated common collection area, and that they are regularly carried away for disposal in designated areas; and	Proponent	Operation phase	Established mechanisms that allow segregation; Contracted waste handler; waste collection schedule	Annual environmental audit
			Ensure regular inspection and maintenance of foul water drainage works and storm water drainage works at the premises to prevent clogging, and fore-stall breakdowns.	Proponent	Operation phase	Maintenance/inspection schedule; Blockage incidences	Annual environmental audit
			Waste water to be direct to sewer line. Ensure there is no blockages or leakages	Proponent	Operation Phase	Maintenance/inspection schedule; Blockage incidences	Waste water analysis Obtain discharge license from NEMA

			Solid waste from garage including brake pads, metal objects, plastics should be disposed off appropriately through a licensed waste recycler	Proponent	Operation Phase	Established mechanisms that allow segregation; Contracted waste handler; waste collection schedule	Routine inspection Annual environmental Audit
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	Source Of Impact	Potential Impact	Controls	Responsibility	Timing	Performance Indicator	Monitoring Requirement
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Fire hazards	Kitchens, electrical components, fire negligence	Destruction of properties, loss of life	• Post “No smoking signs” where flammable materials are stored. • Hire competent and properly authorized electrical contractor to do the electrical works repair works. • Train staff and tenants on the use of the available firefighting equipment. At least one person trained on handling firefighting equipment should be available through-out the operation phase of the project. • Conduct regular firefighting drills within the site. • Develop and post at the building fire emergency and evacuation procedures. • Provide adequate number of appropriate firefighting equipment at accessible strategic places within the	Proponent	Operation phase		Routine inspection Annual environmental audit
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			building. • Organize for inspection and maintenance of fire equipment at least once in a period of six months. • Maintain on site telephone contacts for county fire brigade, and emergency service providers.				
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Security	Bulgerly, Theft cases, domestic violence	Loss of property, loss of life	- Guarding of the property by reputable security firm. - No outsiders should access the property without permission. - Partnership with the neighbours to promote security in the area - Install CCTV cameras in general areas to monitor suspicious activities. - Report any security incidences to police.	Proponent Contractor	Operation Phase		Routine inspection
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Traffic flow			• Adequate road warning signs to traffic regulations • Erect speed pumps. • Liaise closely with other development partners and government and county's departments to upgrade the existing road networks. • Main Entrance and exit to the building should be separate to avoid congestion, • A traffic marshal to control traffic in the morning and evening especially due to school going children.	Proponent Contractor	Operation Phase		Routine inspection
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Table 8. 3: Occupational Health and Safety Matrix for the proposed project during construction and operational phase

Occupational Health and Safety Matrix for the proposed project during construction and operational phase				
Key Issues	Mitigation Measure	Responsibility	Time Frame	Cost Ksh.
Registration of the premises	Register the premises under the Occupational Health and Safety Act Cap 511, of the Laws of Kenya is mandatory	Proponent	One-off	5, 000 Permit license to be determined by DOSHS
General register	Keep a general register of all workers within the facility as stipulated in Sec 62 (1) of the Occupational Health and Safety Act	Proponent, contractor	Construction	500
Incidents and accidents	Report any incidents and accidents using prescribed forms obtainable from the Occupational Health and Safety Office	Site Safety Officer	Continuous	500/month
	Conduct regular safety education and training	Site Safety Officer	Quarterly	4,000
	Prepare a contingency plan for emergency response before the start of the project.	Site Safety Officer	One-off	10,000
Insurance	Insure the premises as per statutory requirements (third party and workman's compensation)	Proponent and all occupants	Annually	
Safety healthy environment (SHE) policy	Develop, document and display prominently an appropriate Safety and Healthy Environment policy	Site Safety Officer	One-off	2,000
Sanitary conveniences	Provide suitable, efficient, clean, well-lit and adequate sanitary amenities at the site taking care of gender division		One-off	50,000

Machinery/equipment safety	Ensure that machinery, equipment, PPE, appliances and tools to be used comply with the prescribed safety and health standards and be appropriately installed, maintained and safeguarded	Contractor, proposed and all occupants	One-off	-
Storage of materials	Ensure that materials are stored or stacked in such manner as to ensure their stability and prevent any fall or collapse		Continuous	-
Safe of access in the buildings	All floors, steps, stairs and lift of the premises must be of sound construction and be properly maintained		Continuous	-

Occupational Health and Safety Matrix for the proposed project during construction and operational phase				
Key Issues	Mitigation Measure	Responsibility	Time Frame	Cost Ksh.
Emergency preparedness and evacuation procedures	Design suitable documented emergency preparedness and evacuation procedures for emergencies	Site Safety Officer	One-off	1,000
First Aid	on site a stocked first aid box which is easily available and accessible	Site Safety Officer	One-off	2, 000/kit
Fire protection	Regularly inspect and service fire-fighting equipment by a reputable service provider and maintain inspection records	Site Safety Officer	Every 3 months	5,000
	Prominently display signs such as “NO SMOKING” at the site especially in parts where inflammable materials are stored	Site Safety Officer	One-off	500
Ventilation	Provide adequate space within the premises to allow for adequate natural ventilation through circulation of fresh air	Contractor, occupants	One-off	-
Lighting	Provide adequate artificial or natural lighting in all parts of the premises where persons are working or passing	Contractor, all occupants	One-off	-
Electrical safety	Do not overload circuits	Proponent and Contractor,	Continuous	-
	Clearly mark distribution board switches to indicate respective circuits and pumps		One-off	-
	Ensure that no live electrical wires are exposed		Continuous	
	Earth all electrical equipment		One-off	5,000
Diseases	Provide complete refuse collection and handling service		Continuous	5,000
Security	Fence the site and employ security personnel operating 24 hours		Continuous	50,000
	Install security alarms and/or surveillance systems.			

8.4 Decommissioning Phase Environmental Management Plan

Table 8. 4 Decommissioning Phase Environmental Management Plan

Note: An environmental Audit should be undertaken and submitted to NEMA prior to decommissioning the project.

Environmental/ Social Impact	Proposed Mitigation Measures	Responsibility	Monitoring	Recommended frequency of monitoring
Air pollution	- Dust suppression with water sprays on dusty areas - Careful screening of construction site to contain and arrest construction related dust - Ensure demolition machinery and equipment are well maintained to reduce exhaust gas emission	Proponent Contractor NEMA inspectors	Inspection Routine maintenance	Daily
Noise pollution	- Demolition activities to be restricted to daytime i.e. 8am to 5pm - Use of Suppressors on noisy equipment or use of noise shields for instance corrugated iron sheet structures - Workers in the vicinity or involved in high level noise to wear respective safety & protective gear. - Comply with EMCA (Noise and excessive vibration pollution control) Regulations 2009	Proponent Contractor Workers NEMA inspectors	Inspection Observation Routine maintenance	Random

Safety of workers	▪ All workers will be sensitized before demolition begins, on how to control accidents related to construction. ▪ Accordingly, adherence to safety procedures will be enforced. ▪ All workers will be adequately insured against accidents.	Workers Proponent NEMA inspectors	activities checks	
Solid and liquid waste	▪ Ensure proper solid waste disposal and collection facilities ▪ Refuse collection vehicles will be covered to prevent scatter of wastes by wind. ▪ Demolition wastes to be collected by a licensed operator to avoid illegal final dumping at unauthorized sites. ▪ All persons involved in refuse collection shall be in full protective attire. ▪	Contractor Proponent NEMA inspectors Registered/licensed waste management company	Routine Activities checks	Daily

Re-vegetation and comprehensive landscaping	▪ Implement an appropriate re-vegetation programme to restore the site to its original status ▪ During the re-vegetation period, appropriate surface water run off controls will be taken to prevent surface erosion; ▪ Monitoring and inspection of the area for indications of erosion will be conducted and appropriate measures taken to correct any occurrences; ▪ Fencing and signs restricting access will be posted to minimize disturbance to newly-vegetated areas;	Contractor Proponent	Inspection	Random
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CHAPTER NINE: SITE SAFETY MEASURES

9.1 *Project Employee Responsibilities*

- a) **Project Manager-** must lead project team by setting an example for safety awareness as well as developing, communicating and supervising the safety program. The project manager must enforce and set the tone for all safety related issues during and prior to the planning of each project phase. They must provide leadership and show commitment to a safe and healthy environment. Responsibilities shall include reviewing inspection reports, safety meeting reports and addressing health and safety issues on the jobsite.
- b) **Superintendent-** must lead, oversee and manage all site work, including safety. The superintendent must ensure that safety procedures are applied in an effective manner and that all employees are conforming to established rules and regulations. Duties include establishing a pre-job assessment prior to the start of the project, ensuring site foremen comply with safety regulations, conducting safety orientations for all new employees, reviewing all incident & corrective action reports, pre-task plans and enforcing disciplinary action when necessary. The superintendent will also work with the site safety representative overseeing regular site inspections, developing a site- specific emergency plan and implementing weekly tool box topics with subcontractors.
- c) **Project Engineer-** Responsibilities include collecting all subcontractor safety programs, material safety data sheets (MSDS) and ensuring all site foreman have access to site plans.
- d) **Site Safety Representative-** will act as the designated safety manager and will inspect the jobsite weekly, conducting safety inspections. Responsibilities include providing education and training opportunities to all employees, conducting safety audits, discussing & providing weekly tool box topics, developing an emergency action plan and procedures, reviewing all safety programs and safety data sheets (SDS), scheduling Pre-Task planning meetings & overseeing implementation, issuing violation notices, issuing corrective action reports.

9.2 *Project Safety Orientation*

Each employee working on the site are required to complete the Employee Safety Orientation. This must be complete within one week of any employee beginning work on site.

9.3 *Job site Inspections*

- a) Site Safety Representative will conduct weekly site inspections, and review all safety documents (pre-task plan, crane plan, etc.).
- b) Contractors shall perform daily safety inspections of their work area and equipment per OSHA, 2007 requirements.
- c) After inspecting a job site/work area, the site safety representative and superintendent will identify and evaluate all potential hazards for: a. Possibility for severe injury. b. Probability of accident occurrence.
- d) This site safety representative will also consider the skill and knowledge level demonstrated by exposed workers.
- e) This site safety representative shall then take the following actions: a. Discuss all hazards with the necessary parties. b. Explain appropriate recommendations and

- precautions. c. Assist with any necessary training (i.e. provide appropriate Tool Box Talks), in accordance with the level of hazard. d. Issue citations & corrective actions.
- f) Records shall be maintained for all recommendations, precautions, and training for each hazard identified.
- g) All incidents, regardless of severity, will be discussed at the next project safety meeting, with an emphasis on eliminating future occurrences

9.4 Emergency Procedures, Investigation, and Reporting

- Contractors/employees shall report all work-related injuries, illnesses, first aid cases, near misses, property damage, and environmental incidents such as a spill or release of hazardous materials, regardless of severity, immediately to the Project Superintendent and Safety Manager.
- The contractor shall investigate all incidents and forward copies of the incident report to the Safety Manager within 4 hours of the incident. An incident report must be provided for: near misses, first aid, recordable injuries, third party property damage or personal injury, and builders risk claims.
- Corrective actions will be implemented and any worker compensation or liability claims shall be reported to project manager.
- Follow-up information on personal injuries (doctor's reports, insurance or worker's compensation reports etc.), shall be forwarded to the Safety Manager within a reasonable time frame.

9.5 Emergency Signals and Procedures

1. **Serious Emergency** - A single long blast from an air horn shall be given by the Project Superintendent in the event of a serious emergency on the site. These include serious or life-threatening injury, severe weather or other impending natural disaster, or other emergencies not requiring immediate evacuation of the site. Please discontinue working and report to your foreman. Foremen shall report to the Project Superintendent for further instructions. Two quick blasts from an air horn shall signal the all clear.
2. **Evacuation** - Three or more long blasts from an air horn shall be given by the Project Superintendent in the event that total evacuation of the site is necessary. Immediately discontinue working and evacuate to a safe location (designated by project superintendent). Foremen shall account for all workers in their crew and shall report to the Project Superintendent. The Superintendent shall instruct the foremen according to circumstances to remain at the gathering location or retreat to a safer distance. Two quick blasts from an air horn shall signal the all clear.

9.6 Fire Prevention Program

1. There should be a programme committed to minimizing the threat of fire to employees, visitors, and property. It is the responsibility of the contractor to have their own Fire Prevention Program (FPP) and to instruct and train all employees in fire prevention and fire response.
2. When Cutting, Welding, and Open Flame Work are performed, the contractor shall at minimum ensure the following:
 - a) All cutting and welding equipment is inspected and operated by competent, trained personnel.

- b) No cutting or welding shall take place on metal walls, ceilings, or roofs built of combustible sandwich-type panel construction or having combustible covering.
 - c) A fire extinguisher shall be located within 10' of all cutting, welding, or other hot work.
 - d) Proper PPE must be utilized.
3. All combustible materials must be properly secured and stored outdoors.
4. Smoking is prohibited at the site projects.
5. The contractor must establish and maintain a means of proper egress, and all exits must be marked by a readily visible sign.
6. Fire Extinguishers must comply with the following: a. readily available every 3,000sf. b. Require quarterly inspection tag. Any defective device must be removed from service immediately. c. Shall be located & labeled so it can be readily seen and accessible along normal paths of travel. In multi-story buildings, at least one extinguisher must be adjacent to a stairway.

9.7 Hazard Communication Program

1. Hazard Determination

- a. SDS supplied by the contractors and manufacturers shall be utilized in identifying hazardous materials.
- b. Subcontractors must submit all appropriate MSDS documentation to project manager office prior to beginning work on project site.

2. Labeling

- a. All containers on the jobsite shall be properly labeled by the responsible contractor.
- b. All labels shall clearly indicate: 1. Identity 2. Hazard 3. Precautionary Statement 4. Name and address of responsible party

3. Safety Data Sheets (SDS)

- a. SDS for all hazardous chemicals to which employees may be exposed will be kept at the corporate office and the jobsite field office.
- b. SDS will be available for review to all workers and employees.
- c. Notification of new or revised MSDS shall be posted

4. Employee Information

- a. All known hazardous substances present on the site and location of SDS shall be disclosed to the workers in the mandatory Project Safety Orientation.
- b. When workers are required to perform work in areas known to contain hazardous materials, it is the subcontractor's responsibility to identify: 1. Specific chemical hazards. 2. Protection/safety measures the employee is required to take to lessen risks. 3. Potential hazard reduction measures c. The main contractor will work with the subcontractor to the greatest extent feasible to limit exposure to the hazard(s).

5. Training

- a. Employers must provide employees with effective information and training on hazardous chemicals in their work area, and whenever a new hazardous chemical is introduced. b.

Employees are required to wear and have appropriate training on PPE associated with each hazardous chemical being used.

9.8 General Safety

9.8.1 Personal Protective Equipment (PPE)

- All personal protective equipment shall be provided by contractors prior to the start of job.
- Personal protective equipment including hard hats, safety glasses, work boots and high visibility shirts must be worn 100% of the time.
- Proper work attire.
- Fall protection is required for all trades when working at heights of 6' or more.
- Protective gloves or clothing shall be worn when required to protect against a hazard.
- A face shield or safety goggles are required when cutting, grinding, welding or power washing.
- Hearing protection is required when working in areas where noise levels exceed 85 decibels, or normal conversation cannot be conducted, or when the area is posted as a noise hazard.
- Dust masks or respirators shall be worn in all dusty environments. Pulmonary function testing, fit tests and written respiratory programs are required for respirator use.
- All personal protective equipment must be inspected daily as per OSHA, 2007 standards.

9.8.2 Moving Equipment

- All operating equipment shall be equipped with rollover guards per OSHA 2007 standards.
- Operating equipment shall be equipped with an audible notification, strobes and/or beacons per manufacturer's requirements.
- A spotter is required whenever a vehicle has a restricted view while operating on site.
- Properly set-up barricades or traffic control zones when operating equipment near public roadways. When construction activities are at a peak level, the use of a spotter/traffic controller is permitted to help direct and control traffic.
- Contractor/Sub-contractors is required to conduct daily inspections of all equipment.
- Employees assigned to traffic control duties must wear high visibility clothing per OSHA 2007 standards.

9.8.3 Excavating/ Site Utilities

1. The competent person must inspect the excavation:
 - a) Daily before work activities commences.
 - b) After a heavy rainfall.
 - c) At depths greater than 4'' for oxygen deficiencies or hazardous atmospheres.
 - d) For failures of protective systems, equipment and adjacent structures.

2. Miss Dig must be contacted prior to starting any excavating.
3. When working in a trench 4 feet or more in depth, proper sloping, shoring, or other cave- in protection methods shall be utilized.

4. Ladders shall be provided at least every 25 feet for access to trenches exceeding 4 feet in depth.
5. Material and spoil piles shall be kept a minimum of 2 feet away from the edge of a trench.
6. All open holes, trenches, and excavations shall be barricaded and clearly marked to alert the public and other workers in the area.
7. Excavations and trenches may be confined spaces where air monitoring could be required.
8. All vehicles hauling soil from site must pull into site and turn around.

9.8.4 Crane & Rigging Safety

- Must be included in a Pre-Task plan.
- All operators shall be certified and cards submitted to project supervision before start of work.
- All cranes are to be inspected on a daily basis.
- All cranes must have proof of annual inspection.
- Outriggers must be manufactured and be fully extended and on stable ground.
- The swing radius of all cranes must be properly barricaded.
- Contractor must submit a copy of the crane plan (operation, swing radius, etc.) to superintendent prior to the start of the project.

9.8.5 Fall Protection

1. Fall protection systems are required when exposed to heights of 6' or more. Systems include:
 - a) Guardrails
 - b) Safety nets
 - c) Personal fall arrest systems. All systems must be inspected, constructed and installed per OSHA, 2007 requirements.
2. When conducting roofing work, contractors are required to submit a pre-task analysis.
3. All holes/ floor openings greater than 2" in depth or diameter are required to be properly barricaded/covered or secured, and clearly marked with high visibility paint as a "hole". All hole/openings that are barricaded and covered shall be securely/mechanically fixed in place.
4. Contractors are required to maintain all fall protection devices.
5. If an employer can demonstrate conventional fall protection methods are infeasible or present a greater hazard, a fall protection plan may be implemented. The fall protection plan must comply with OSHA standards and include the following:
 - a) Site specific requirements/unique circumstances.
 - b) Prepared by a qualified person.
 - c) Supervised by a competent person.
 - d) Explain why conventional methods are infeasible.
 - e) Discuss the safety measures that will be taken to reduce or eliminate the fall hazard of the workers.
 - f) Describe all controlled access zones.

g) Require training for all employees.

9.8.6 Electrical

- Cords and tools must be inspected on a daily basis. If the insulation or casing of the cord is damaged, or the ground prong is missing, the cord will be cut by project supervision.
- All cords must be 3 prong heavy duty cords and be protected from indoor/ outdoor traffic.
- Portable generators must be provided with ground fault circuit interrupters.
- Temporary lighting must be protected with safety guards.
- Stairwells, corridors & work areas shall be properly illuminated with either temporary or permanent lighting.

9.8.7 Scaffolding Safety

- All scaffolds must be erected and inspected daily by a competent person
- Each work level of the scaffold system shall be full planked and overhang the end supports by a minimum of 6 inches and a maximum of 12 inches. Planking which does not meet this requirement must be cleared.
- The scaffold system must have a ladder provided for access. Climbing the bracing is not acceptable unless the system has a built-in ladder for that purpose.
- Scaffolding height must never exceed 4 times their minimum base dimension. If this is exceeded, the scaffold must be tied into the structure.
- All working and walking levels must be fully planked and not overloaded.
- Planks must be scaffold grade lumber. Cracks shall not penetrate more than 12 inches.
- Riding of wheeled scaffolding is prohibited.
- The footing or anchorage for scaffolds must be sound, rigid and capable of carrying the maximum intended load without settling or displacement.

9.8.8 Ladder Safety

- Only type 1A ladders with a heavy-duty rating are required.
- No painted or aluminum ladders are allowed on site.
- All ladders must extend a minimum of three (3) feet above the landing and be secured. If the ladder cannot be secured, it must be held at the bottom by another worker.
- Keep ladder bases clear from debris, hoses, wire, materials, etc.
- Use the “four and one” rule when positioning a ladder – one foot of base for every four feet of height.
- Step ladders must be fully extended and locked into place. Placement shall be on stable surfaces.
- Workers shall not straddle or stand on the top two rungs of a ladder, and shall work facing the ladder.

9.8.9 Aerial Work Platforms

- Must be inspected daily.
- Operated by trained and authorized personnel. Employees must have operator's certification readily available

- All employees must wear a body harness and be tied off inside the basket when elevated at all times.
- Lifts should only be operated in accordance with the manufacturer's manual.

9.8.10 Housekeeping

- Contractor/Subcontractors must properly dispose of all waste materials on a daily basis.
- Contractor/Subcontractors must properly store and secure all work material and equipment.
- Site clean-up is required on a daily basis.
- Stairways and passageways must be kept clear of debris.

9.9 Site Specific Safety Requirements

Site Work

- Employees must wear proper PPE.
- Contactor/Subcontractors must maintain a clear path through the jobsite.
- Storing of materials and goods will be located in a way as to prevent site congestion.

Concrete

- All exposed rebar will be capped, or covered to protect against impalement or injury.
- Employees operating equipment such as vibrators pump nozzles, and/ or buggies will wear appropriate clothing and PPE, such as boots, eye protection and hearing protection. Long sleeve shirts will be worn to protect against the exposure of concrete.
- Concrete contractor must appropriately barricade working area during concrete forming and after concrete has been poured.
- Material used for form work must be removed and properly disposed of. Subcontractor will remove all debris and conduct a clean-up of the work area daily.

Steel Erection

- Subcontractor must conduct a pre-task analysis with the superintendent before all overhead hoisting activities take place.
- The area of erection must be securely barricaded. If necessary, a controlled access zone may be permitted.
- All steel erectors must wear appropriate PPE, including fall protection at heights greater than 6 feet and a face mask when welding.
- Contractor must provide the following when using a crane: Crane operator certification. Crane plan, including staging area, swing radius and required barricades.

Block Masonry

- Mason contractor must provide, if applicable, wall bracing plan prior to start of work
- Competent person (foreman) must conduct daily inspections of scaffold equipment

- Employees working within restricted fall zone must be trained and certified to work in restricted fall zone area.

- Masonry block walls at heights of 8 feet or greater, not tied into the structure, must be adequately braced.
- Restricted fall zone areas must be established prior to the construction of the wall, and will be restricted to employees who are actively engaged in constructing the wall.

Truss & Deck Framing

- All walkways and working surfaces must be clear of debris to prevent tripping hazards.
- Employees are required to wear appropriate PPE, including fall protection at heights greater than 6 feet.
- Contractors must establish a controlled access zone to prevent other contractors from entering work area.
- Trusses/Joists must be adequately braced to prevent falling or tipping.
- Contractor must barricade crane swing radius when loading and setting trusses in place.

Window Installation

- All window openings require a guardrail if the window sill measures a height below 39" and a width greater than 18".
- When installing windows on the upper floors, the area below (ground level) must be properly barricaded.
- Employees are required to wear a personal fall arrest system when installing windows on the upper floors.
- If using any lifting devices (rough terrain, aerial), employees must: A. Wear a personal fall arrest system B. Have operator's license to use equipment. C. Inspect equipment daily.

Roofing

- Employees are required to use a method of fall protection. Slide guards are no longer permissible.
- Employees are restricted from throwing material from roof. Contractor must set up a drop zone, which requires a barricade and a spotter.
- Employees working on roofs must wear appropriate footwear that provides good traction.
- Working surfaces must be free of tripping hazards (tools, cords, etc.) and must be clean to prevent material from falling below.
- A written pre-task analysis is required and must be submitted to superintendent prior to start of work.
- Employees must have proper and safe access to roofing surface. The use of any temporary ladder must be constructed and properly secured to prevent movement.
- Employees should refrain from working on the roof during inclement weather conditions.

Drywall

- Daily cleanup is required.
- A clear path must be maintained.
- Proper storing methods are required.
- Employees must wear proper PPE at all times.

Paint Primer

- Contractor must submit all required MSDS.
- Employees must wear appropriate work attire and PPE, including face masks/ respirators when spraying paint. A written respiratory program is required as well.
- Employees must use ladders/ lifts to reach difficult areas.
- While painting/ priming, contractor must make sure work area is properly ventilated.
- Contractor is permitted to set up a restricted work zone when spraying paint.
- Properly store all paint material, and dispose of empty paint buckets daily.

9.10 Sexual Harassment

Discrimination against any employee or applicant on the basis of the person's sex is strictly prohibited. Sexual harassment is a violation of state law and will not be tolerated. Any unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature constitute sexual harassment when:

- a) It is stated or implied that submission to such conduct is a term or condition of a person's employment; or
- b) Submission to or the rejection of such conduct by a person is used as a basis for any employment decision affecting such person, such as, but not limited to, pay increases, work assignments, promotions, performance evaluation, etc. or;
- c) Such conduct has either the purpose or effect of interfering with a person's work performance or creates an intimidating, hostile or offensive work environment.

Any employee or applicant who feels that he or she has been subjected to sexual harassment should report any incidents of sexual harassment to his or her supervisor, or any member of management, without fear of reprisal. The totality of the circumstances, the nature of the alleged harassment and the context in which the alleged incidents occurred should be investigated in determining whether alleged conduct constitutes sexual harassment. Every reasonable effort will be made to maintain confidentiality. Sexual harassment case shall be reported to police for further investigation and prosecution.

CHAPTER TEN: CONCLUSION AND RECOMMENDATIONS

10.1 Conclusion

The aim of this Environmental Impact Assessment (EIA) Study Report is to provide adequate information to support informed decision-making and contribute to the sustainable development of the proposed Apartments Development on L.R. No. Nairobi Block 3/249, along Church Road, off Rhapta Road, Nairobi County. The Report has been prepared and submitted to the National Environment Management Authority (NEMA) in accordance with the Environmental Management and Co-ordination Act (EMCA), Cap. 387, and the applicable Environmental Management and Co-ordination (Strategic and Integrated Environmental Assessments and Environmental Audits) Regulations, 2025.

The assessment has considered the proposed development, the existing environmental and socio-economic conditions of the project area, potential positive and negative environmental and social impacts, stakeholder concerns, and appropriate mitigation and enhancement measures. The assessment indicates that, as with most urban construction and residential developments, the project has the potential to generate adverse impacts during construction and operation. These may include generation of dust and noise, construction waste, increased traffic and occupational safety risks, increased demand for water and energy, wastewater generation, storm water management challenges and other impacts associated with construction and occupation. However, these impacts can be effectively managed through appropriate planning, good construction practices, compliance with applicable laws and regulations, and implementation of the Environmental Management and Monitoring Plan (EMMP).

The EIA process has incorporated stakeholder and public consultation to identify concerns and views relating to the proposed development. The issues and concerns raised during the consultation process have been considered in the assessment and, where applicable, incorporated into the proposed mitigation measures.

During construction and subsequent occupation, sustainable environmental management shall be achieved through prudent use of natural resources, prevention of pollution, proper waste management, protection of the surrounding environment, occupational safety and health management, and responsible management of the interests of workers, residents, neighbouring properties and members of the public.

The Proponent and Contractor shall therefore ensure that the mitigation measures and monitoring requirements provided in this Report, particularly those presented in Chapters 6 and 8, are fully implemented throughout the project life cycle. The Proponent shall also ensure compliance with all conditions attached to the EIA licence and other statutory approvals and permits applicable to the development.

In addition to the measures provided in the Environmental Management and Monitoring Plan, the following commitments shall be observed:

The Proponent and Contractor shall comply with all applicable national and county laws, regulations, standards, approvals and guidelines governing construction, environmental management, public health, occupational safety and health, physical planning, water resources, waste management and building development.

Appropriate warning, safety and information signage shall be erected and maintained at strategic

locations within and around the project site, where they can be clearly seen by workers, residents, visitors and members of the public.

The Contractor shall provide appropriate occupational safety and health measures for all workers, including suitable personal protective equipment (PPE), induction and safety training, safe working procedures, emergency preparedness and appropriate first-aid arrangements.

The Contractor shall ensure that all workers are appropriately covered in accordance with applicable occupational injury and workers' compensation requirements, including the Work Injury Benefits Act, 2007.

The project site shall be appropriately registered and managed as a workplace in accordance with the Occupational Safety and Health Act, 2007 and requirements of the Directorate of Occupational Safety and Health Services (DOSHS).

Adequate site security shall be provided throughout the construction period, including controlled access to the site and appropriate measures to protect workers, neighbouring properties and the general public.

Construction activities shall be undertaken within approved working hours and in a manner that minimises disturbance from noise, vibration, dust, traffic and other construction-related activities.

Construction waste and other wastes generated by the project shall be segregated, stored, transported and disposed of through appropriately authorised waste handlers and facilities in accordance with the applicable waste management requirements.

The Proponent shall ensure that adequate measures are provided for stormwater management, drainage and prevention of soil erosion and flooding within and around the development.

Water resources shall be used efficiently. Where a borehole is developed, the Proponent shall obtain the requisite approvals and permits from the Water Resources Authority and comply with applicable water resource requirements.

The proposed rainwater harvesting and storage system shall be incorporated into the development and maintained for appropriate reuse, in accordance with the applicable Water Act requirements and the Water (Harvesting and Storage) Regulations, 2025.

Wastewater shall be appropriately managed and discharged to the approved sewerage system, subject to the requirements of the relevant water and sewerage service provider and applicable environmental standards.

The Proponent shall incorporate appropriate energy-efficiency measures into the development and should consider the use of renewable energy technologies, including solar energy, where technically and economically feasible.

Fire safety systems, emergency exits, fire-fighting equipment, emergency response procedures and other life-safety measures shall be provided and maintained in accordance with applicable fire safety, occupational safety and building requirements.

The Proponent shall maintain adequate landscaping and green areas and ensure that the proposed development is integrated appropriately with the surrounding urban environment.

The Environmental Management and Monitoring Plan shall be implemented throughout construction and operation, with periodic monitoring, documentation and corrective action undertaken where non-compliance or adverse environmental impacts are identified.

The Proponent shall undertake the required environmental audits and monitoring and submit the necessary reports to NEMA and other relevant authorities as required by law.

Any material changes to the approved project design, scale, activities or operations shall be subjected to the necessary regulatory review and approval before implementation.

Based on the findings of this EIA Study, the proposed Apartments Development can be implemented subject to obtaining the requisite statutory approvals and the strict implementation of the mitigation measures, environmental management requirements and conditions that may be imposed by NEMA and other relevant regulatory authorities.

10.2 Recommendations

The environmental assessment has established that the potential adverse environmental and social impacts associated with the proposed Apartments Development can be adequately managed through implementation of the mitigation measures identified in Chapter 6 and the Environmental Management and Monitoring Plan presented in Chapter 8.

It is therefore recommended that the Proponent continues to integrate environmental, social, occupational safety and health considerations into the planning, construction and operational management of the development. The Contractor and Proponent should allocate adequate financial and human resources for implementation and monitoring of the recommended measures and ensure that environmental performance is continuously reviewed throughout the project life cycle.

The Proponent should also maintain effective communication and engagement with neighbouring residents, workers, relevant government agencies and other stakeholders and establish an accessible mechanism for receiving, documenting and addressing complaints and grievances arising from project activities.

Subject to compliance with the applicable legal and regulatory requirements, implementation of the proposed mitigation measures, fulfilment of the conditions of the EIA licence and obtaining all other requisite statutory approvals, the project may proceed to implementation.

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