ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED CONSTRUCTION OF WINDSOR APARTMENTS IN NYALI , MOMBASA COUNTY.

EXPERT/PROPONENT DETAILS

CERTIFICATION

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DOCUMENT CONTROL SHEET

Table 3: Document control sheet

S/NO.	CLIENT	WINDSOR CRESCENT LTD		SIGNATURE
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF PLATES

LIST OF FIGURES

ACRONYMS

Table 4: Acronyms

S/NO	ABBREVIATION	PARTICULARS
1.	WC	Windsor Crescent
2.	CBD	Central Business District
3.	CPP	Consultations and Public Participation
4.	EIA	Environmental Impact Assessment
5.	EMCA	Environmental Management and Coordination Act
6.	EMP	Environmental Management Plan
7.	ERC	Energy Regulatory Commission
9.	GHGs	Greenhouse gases
10.	GKIC	Green Kenya Investment Corporation
11.	IPCC	Intergovernmental panel on climate change
12.	KEBS	Kenya Bureau of Statistics
13.	KEFRI	Kenya Forestry Research Institute
14.	KFS	Kenya Forest Service

15.	MCG	Mombasa County Government
16.	MOWASSCO	Mombasa Water Supply and Sanitation Company Limited
17.	NCA	National Construction Authority
18.	NEAP	National Environment Action Plan
19.	NEMA	National Environment Management Authority
20.	OHS	Occupation Health and Safety
21.	OSHA	Occupational Safety and Health Act
22.	PAPs	Project Affected Persons
23.	PPP	Public-private partnership
24.	SDG	Sustainable Development Goals
25.	TOR	Terms of Reference
26.	UNEP	United Nations Environment Programme
27.	WRA	Water Resources Authority
28.	WCL	Windsor Crescent Limited

ANNEXURES

Table 5: Annexures

S/NO	PARTICULARS	FOLIO
1.	Lead expert practicing licence	Annexure 1
2.	Land ownership documents	Annexure 3
3.	Prject designs	Annexure 4
4.	Bills of quantities summary	Annexure 5
5.	Proponent's Corporate documents	Annexure 6
6.	Questionnaires	Annexure 7
7.	FGD Documents	Annexure 8

EXECUTIVE SUMMARY

1. Windsor Crescent Limited commissioned Green Kenya Investment Corporation on 24th June 2025 to undertake an Environmental Impact Assessment for the proposed construction of Windsor Crescent Apartments in Nyali, Mombasa County.

2. The project describes baseline information, legal and regulatory frameworks, project alternatives, an assessment of environmental impacts and associated mitigation measures, and an Environmental Management and Monitoring Plan.

3. The consultant identified and described the policy, legal, and institutional frameworks that are relevant to the proposed project.

4. Public participation and consultation was done with representatives of Administration, Education, Trade and Religion to identify the impacts associated with the project and come up with enhancement measures for the positive impacts and considered mitigation measures for the negative impacts

5. A summary of alternative analysis has been done to compare different ways of achieving the same project objectives and to determine which option offers the best balance of feasibility cost, benefits, risks and sustainability.

6. The proposed project will have numerous benefits for the housing sectors in the area and the country at large. However, the development will also have negative impacts, whose mitigation measures have put in place to reduce their adverse effects on the environment.

7. The study has evaluated the anticipated impacts and developed an EMP that shall be implemented by the proponent to ensure environmental protection, health, and safety of the workers and the general public.

8. Having examined and interrogated the project design, utilities, waste disposal economic and environmental aspects of the project, the expert is convinced that the projects impacts on the environment are not significant and that adequate mitigation measures have been recommended. It is the team opinion that the project will render an addition to the national housing challenge.

In the view of foregoing, the consultant humbly request the National Environment Management Authority to approve and license the project.

CHAPTER ONE

1

INTRODUCTION

1.1 General overview

Under the bill of rights, specifically in article 43 (1)(b) the constitution of Kenya 2010 articulates the following economic and social rights;

1. Every person has the right to;

a) to the highest attainable standard of health, which includes the right to health care services, including reproductive health care;

(b) to accessible and adequate housing, and to reasonable standards of sanitation;

(c) to be free from hunger, and to have adequate food of acceptable quality;

(d) to clean and safe water in adequate quantities;

(e) to social security; and

(f) to education.

It empowers every citizen with a right to accessible and adequate housing coupled with reasonable standards of sanitation. According to World Bank 2021 report on Kenya's Economic Update on unavailable and unaffordable housing, there is an estimated accumulated housing deficit of over 2 million units. This is a result of the

increased population, rapid urbanization, and current production of less than 50, 000 units annually against an annual demand of 200,000 housing units..

In Kenyan cities, the demand for residential space expansion has continued to be extremely high with the government maintaining/servicing the land and letting private developers develop it making both the public and private sectors contribute in considerable measure. In accordance with physical planning policies, which aim to increase the supply of standard housing units, water supply, and sanitation, channelize urbanization, and ensure proper urban development and management, the government of Kenya has introduced a policy—affordable housing aimed at providing over 150,000 house units annually.

To tap into the opportunity provide housing in Mombasa City, which is fuelled by increasing demand, **Windsor Crescent Limited** is proposing to develop **86 units** residential apartments on land plot No. (1736/1/MN) situated in Nyali opposite Reef Hotel.

Section 58 of the Environmental Management and coordination Act (EMCA), as well as Environmental (Impact Assessment and Audit) Regulations of 2017 require that proposed urban developments must undergo EIA and a report be submitted to NEMA for determination. Schedule 2 of EMCA on project characterization, classifies the proposed residential apartments under the category of medium risk projects as it is involves establishment of new housing not exceeding one hundred housing units.

1.2 Consultant Assignment

Environmental (Impact Assessment and Audit) Regulations of 2017 require that EIA must be carried out for all development project and submitted to NEMA for approval and licensing. Windsor Crescent Ltd have therefore, commissioned Green Kenya Investment Corporation to undertake the Environmental Impact assessment for the proposed construction of **86** apartments. The EIA shall be carried out in Accordance to local and international laws and regulations.

1.3 Objectives of EIA

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

The specific objectives are:

i. To identify potential environmental impacts of the proposed project and assess the significance of these impacts.

ii. To seek the views and concerns of the PAPs regarding the proposed project.

iii. To assess the relative importance of the various project alternatives.

iv. To propose mitigation measures for the significant negative impacts of the project on the environment.

v. To generate baseline data for monitoring and evaluation of how well the mitigation measures are being implemented during the project cycle.

vi. To develop Environmental Management and Monitoring Plan (EMP) for the project cycle.

vii. To present results of the EIA Study Report in such a way that they can guide informed decision-making.

1.4 Terms of Reference (TOR)

A scoping exercise was undertaken to identify the key issues to be addressed in the study and feasible project alternatives. During the exercise, the following terms of reference (TOR) were developed;

Below are the TOR;

A scoping exercise was undertaken to identify the key issues to be addressed in the study and feasible project alternatives. During the exercise, the following terms of reference (TOR) were developed and approved by NEMA:

Below is the TOR:

i. Project description

ii. Undertake baseline surveys

iii. Describe physical,biological environment and demographic patterns.

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

v. Undertake public consultation and Public Participation

vi. Undertake impact assessment and mitigation measures.

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

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

ix. Develop an Environmental Management Plan proposing the measures for eliminating, minimizing, or mitigating adverse impacts on the environment; including the cost, time frame, and responsibility to implement the measures;

x. Come up with recommendations.

1.6 Methodology

The methodology used for the preparation of this EIA Study Report was as follows:

i. Project screening

This was done to determine whether an Environmental Impact Assessment was required and to what level of assessment was necessary. According to the second schedule of EMCA Cap 387 of the laws of Kenya, the proposed project lies in Category 2(1)(a) "Medium Risk Projects". For such projects, the law recommends the submission of a project report to NEMA for licensing.

The screening exercise revealed that though the project is classified as medium risk, there are no risks involved per say since the anticipated environmental issues are minimal and there would be no displacement of persons and only site specific environmental impacts will be realized.

ii. Scoping

The scoping exercise was carried out to identify areas of environmental concern and the potential positive impacts that would accrue from the implementation of the proposed project. A site reconnaissance was done to determine the baseline information of the project and environmental issues were categorized into physical ,ecological, social and economic aspects.

iii. Desktop Study

This included documentary review on the nature of the proposed activities, policy, and legal framework, environmental setting of the area, and other available relevant data/information.This also included consultations with the PAPs, proponent, and the project team through a public meeting, administration of questionnaires, and direct interviews.

iv. Site Assessment

This was accomplished via field visits for physical investigations of site characteristics and the environmental status of the surrounding areas to determine the anticipated impacts.

v. Development of an EMMP

This included outlining the potential impacts and mitigation measures , responsibilities , timings and the cost .

vi. Reporting

The Environmental Impact Assessment report has been developed in line with Environmental (Impact Assessment /Audit) Regulations 2003 for submission to NEMA.

vii. Study Outcomes

1. Executive summary
2. Project screening report
3. Environmental Impact Assessment Report
4. Environmental Management and Monitoring Report.

The EIA process was carried out as shown below:

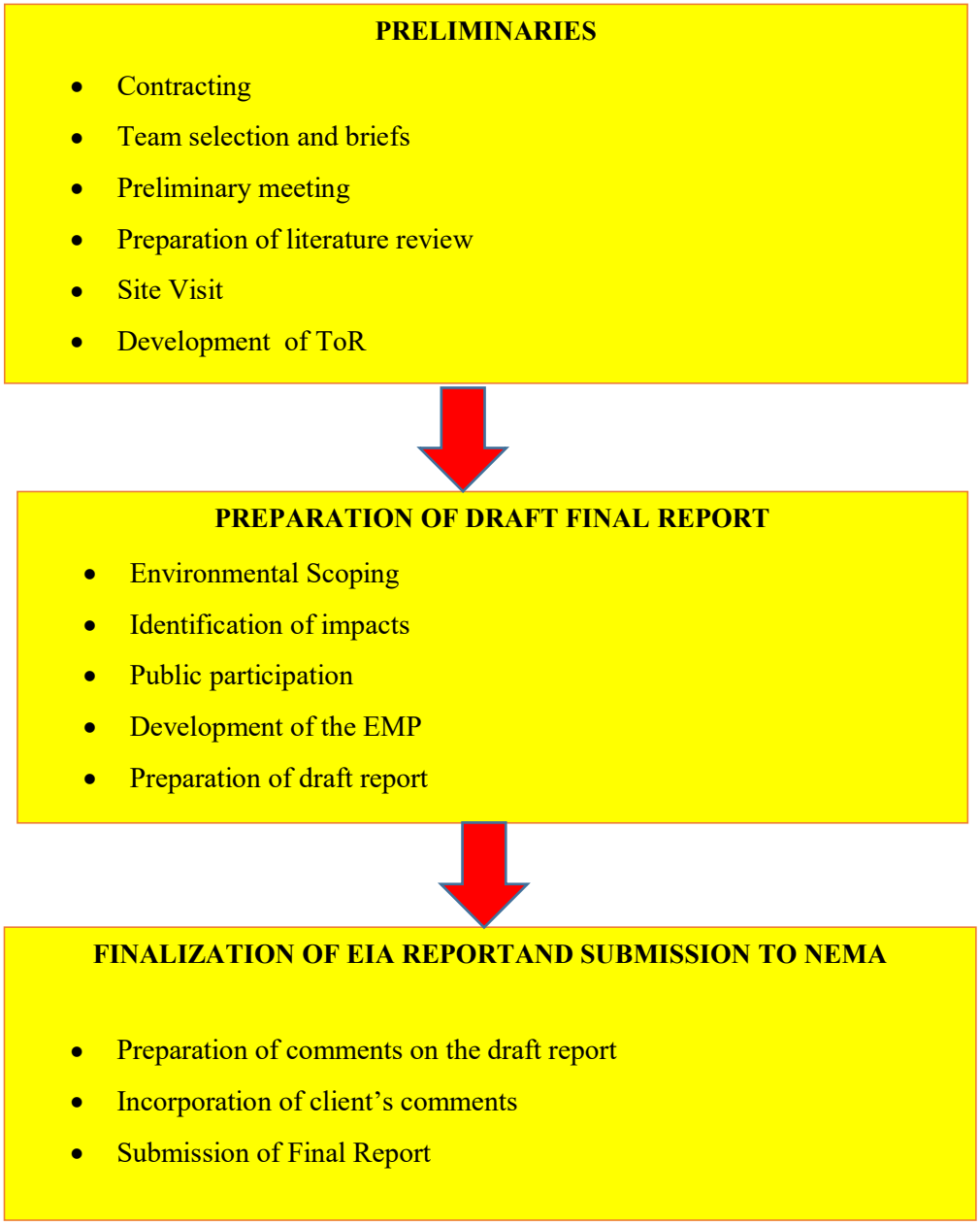

Figure 1: Methodology

1.6 Project Justification

1.6.1 Demand for housing

According to the world bank report of 2024 on housing need in Kenya, the annual housing demand in Kenya is 250,000 but only an estimated 50,000 are supplied . This has been attributed to an estimated population growth of 3.3% in Mombasa. The national government Agenda on affordable housing proposes to construct 500, 000 residential units in partnership with the private sector to alleviate the escalating housing demand.

The multistorey development is, therefore designed to meet a growing demand of residential needs in the country.

1.6.2 The Urbanization challenge

Kenya's urbanization and population growth have created a significant challenge for housing, with a shortage of affordable units and high housing prices. Kenya's urban population is growing at a rate of 4.2% per year, which is faster than the pace of housing construction. This has led to overcrowded and substandard urban areas

The annual shortfall of new housing units targets in contributing to the housing crisis and will continue to be a major challenge if not tackled

1.6.3 Socio-Economic Benefits of the Project

The proposed project will have numerous socio-economic benefits to the area and the country at large. Some of the following benefits will include the following;

i. Provision of quality habitable housing units in the area
ii. Contribute towards the economic growth of our nation through revenue generation
iii. Provision of employment opportunities to both skilled and unskilled personnel throughout the project cycle.
iv. Creation of a market for goods and services during the project cycle.
v. The optimal use of land will result in the increased utility of the parcel of land.
vi. Community integration-by providing amenities that enhance the surrounding neighborhood

1.6.4 Neighbourhood Development Trend

The neighbourhood is currently undergoing an urban transformation with the previous single dwelling units being replaced by mixed development including apartments, commercial, and institutions. The proposed project will therefore conform with this trend which will ensure better utilization of the land giving it higher quality and urban character as well as increasing its profitability.

Plate 1:upcoming developments in the area

Plate 2; Neighbouring Reef House

Plate 3: Neighbouring apartments

CHAPTER TWO

2

2.0 PROJECT DESCRIPTION, DESIGN, AND IMPLEMENTATION

2.1 Background

The proposed project involves the development of a multi-storey building containing a total of **86** units with associated amenities and parking. The project aims to provide housing units in line with the local physical planning policy and increases the utility of the land in the area.

2.2 Project Location

The proposed project will be located on plot no 1736/1/MN in Nyali Sub-County of Mombasa County. The proposed site is on GPS Coordinates: Lat: -4.01802, Lng: 39.71925. The proposed site is approximately 0.2437 Ha, and it is owned by Windsor Crescent ltd . A copy of the land title deed is appended.

Currently, there is an existing house at the site which shall be demolished to pave way for the proposed project.

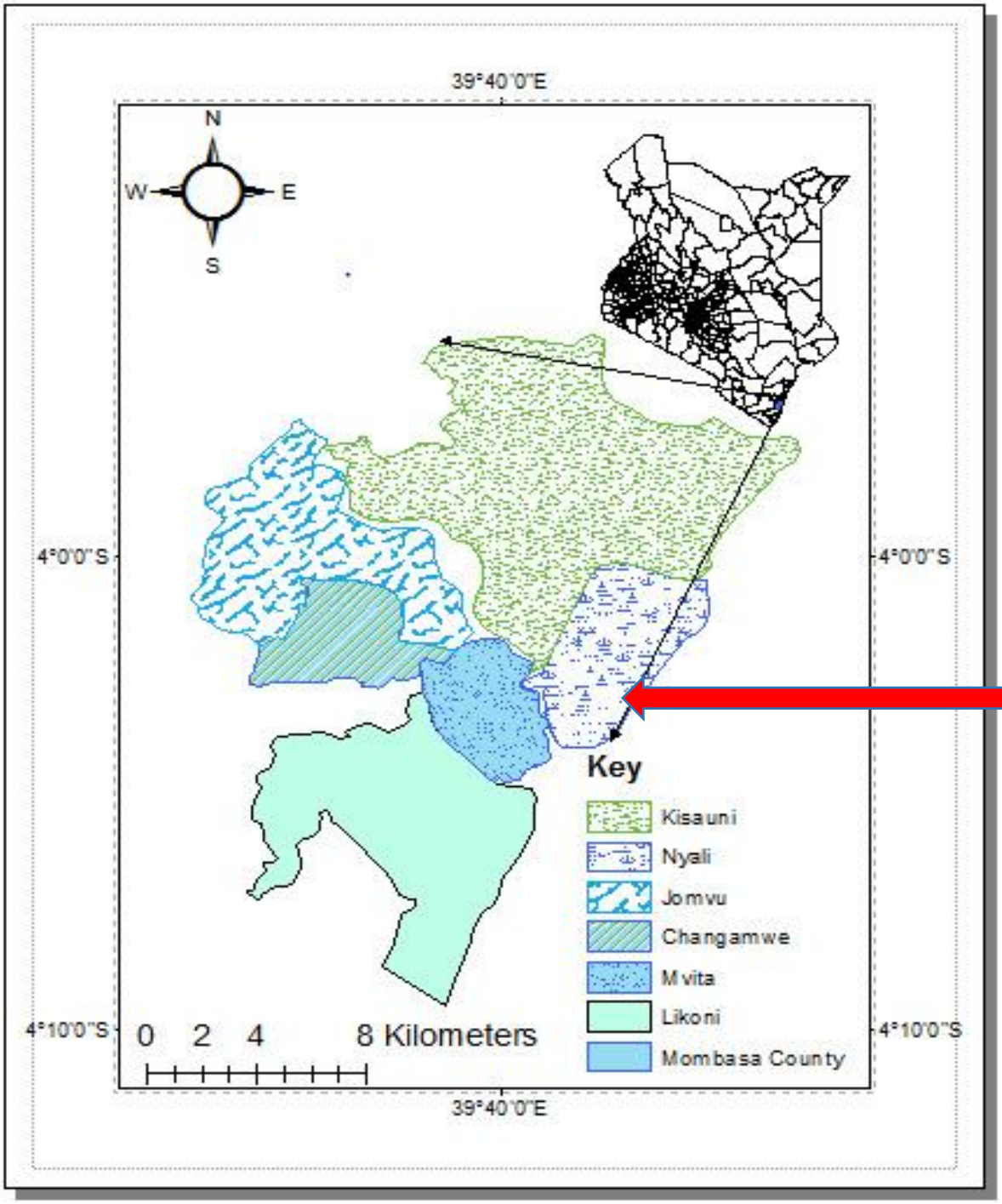

Plate 4; Mombasa county map

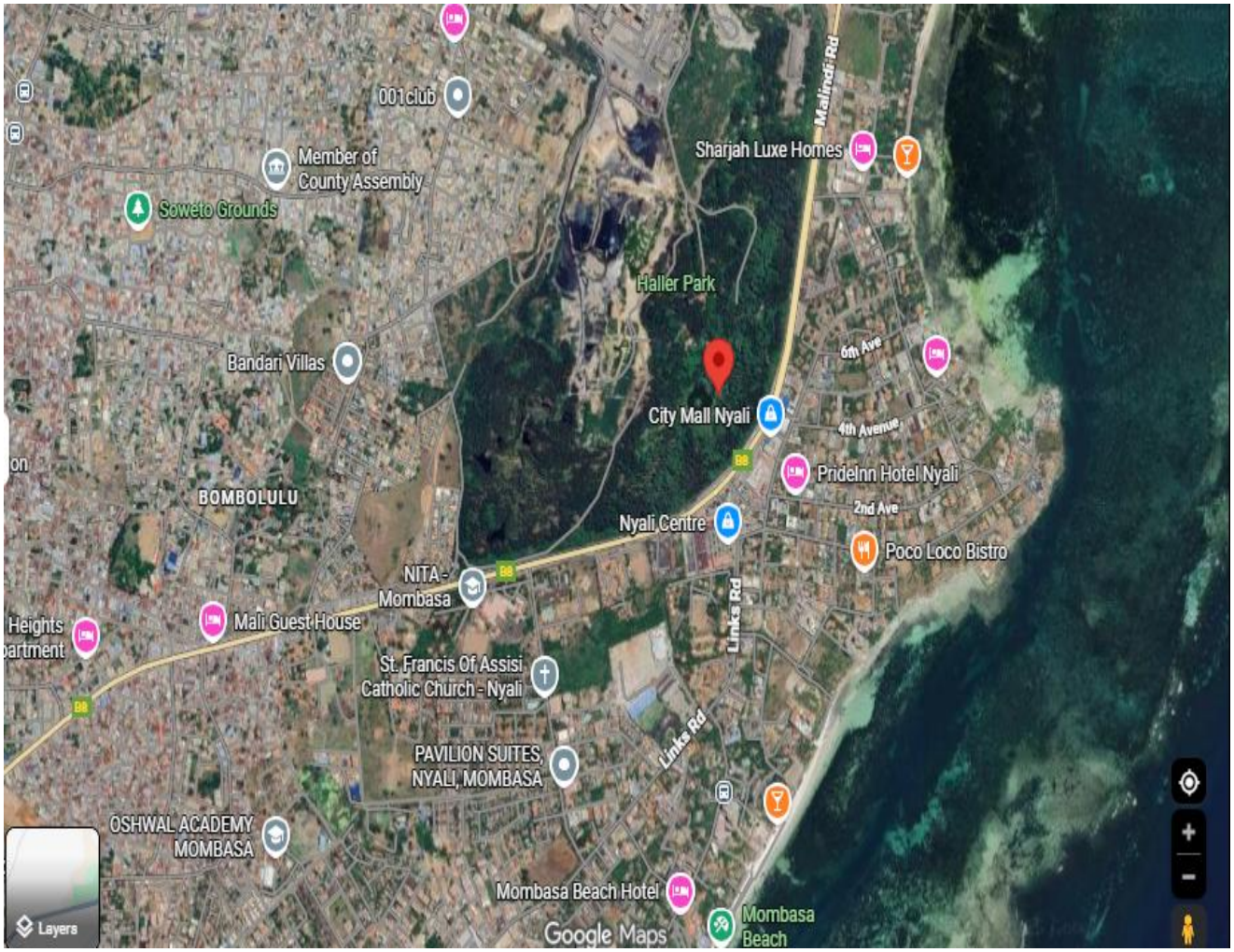

Plate 5: Project location (Source Google earth)

Plate 6: site

2.3 Land Tenure, Use, Ownership, and Management

The parcel of land on which the subject development is proposed is held on Leasehold Interest. The certificate of Title is drawn under The Registration of Titles Act (Chapter 281) as Title No. **CR.13947** and the current registered proprietor is Windsor Crescent **Ltd** (See *attached copy of the ownership document)*

2.4 Project Description and design

The proposed project will consist of 86 housing units (apartments) with associated amenities and parking lots on plot no 1736/1/MN as follows;

Structure: 13-storey building structure with reinforced concrete columns and beams.

1. Basement 1 and ground floor -parking

2. 1 bedroom-28 apartments

3. 2 bedroom -30 apartments

4. 3 bedroom- 28 apartments

5. Roof top amenities- swimming pool, clubhouse, gym children's play area

S/n	Unit typology	No. Units
1	1BR	28
2	2BR	30
3	3BR	28
	Total	**86**

Table 6; Residential unit typologies

2.5 Construction Inputs and Technology

The project inputs will include the following:

i. The materials that shall be used will include stones, cement, sand, crushed rock (gravel/ballast), ceramic fixtures, reinforcement bars, wood/timber, glass, painting materials, plastic, and electrical and mechanical fixtures. All these materials shall be obtained from licensed dealers who have complied with the environmental management guidelines and policies and are approved by the Kenya Bureau of Standards (KBS).

ii. Several machines shall be used which will include earth-moving equipment (excavators, loaders, wheel loading shovels, and backhoe), material handling equipment (cranes and hoists), construction equipment (concrete mixers and vibrators), and Engineering vehicles (trailers, tippers, and dumpers).

iii. The project will require a labour force of both skilled and non-skilled workers. The skilled persons will include the project consultants (architects, engineers, quantity surveyors, and environmental experts) and the contractor with a team of foremen, masons, plasterers, carpenters, plumbers, welders, electricians, glaziers, painters, and casual laborer's.

iv. Other construction inputs will include water and electricity from the main grid or provided by generators.

2.6 Construction Activities

2.6.1 Pre-Construction Stage

This stage refers to the services of planning, design, legal and administrative activities that take place before actual construction starts.

They involve;

1. Project initiation and feasibility whose main outcome is the feasibility study report (FSR)

2. Project design whose main outcomes are Architectural designs, technical designs, Bills of Quantities and EIA

3. Legal, Statutory and Regulatory approvals whose main outcomes are; Title deed, County Government approvals, EIA approval, building permits NCA registration and utility approvals (water, electricity, sewerage and road access)

4. Tendering and contractor selection

5. Site preparation and commencement of works

2.6.2 Construction Stage

This stage shall have several processes as discussed below:

i. Demolition of the Existing Structures

There is an existing structure on the proposed site which shall be demolished to pave way for the proposed project. The demolition works shall be carried out during the day by licensed contractor and upon acquisition of the permits from the relevant authority. The structure shall be pulled down manually and mitigation measures observed to reduce air (dust) and noise pollution, solid waste (demolition debris), and accidents.

ii. **Construction site preparation**

After the demolition of the existing structure, the site preparation will commence with the construction of the hoarding area around the boundary of the plot to prevent the public from falling objects. Other preparation works shall include the construction of temporary site office and storage rooms, the provision of adequate sanitary facilities for workers, a first aid office, and a utility area. The contractor shall mobilize the materials, workforce, and machinery required for the ground breaking.

iii. Excavation and Foundation works

The excavators, bulldozers, backhoes, loaders, and tippers shall be used for the excavation works to pave way for the construction of the foundation and the basements. The machinery will aid in the removal of the soil/rocks and transporting the waste to an approved disposal site. Proper excavation and foundation works shall be observed to ensure that the volumes of excavations are clearly defined. Shallow

foundations which include the pad and strip footings shall then be constructed in liaison with the project structural engineer.

iv. **Concrete and Masonry works**

The construction of the superstructure will be carried out in line with the approved plans and comply with the specifications issued and approved by the project team and the proponent. Concrete works will involve the mixture of cement, sand, and ballast in the specified ratios and pouring it into already constructed form work. The concreting will be supplemented by concrete mixers and vibrators. The poured concrete will be cured for a specified period under the supervision of the structural engineer. The internal and exterior walls will be built using machine-cut stones sourced locally. The process will be under the supervision of the project consultants including the environmental experts.

v. Structural Steelworks

The structural elements which include the slabs, beams, columns, retaining walls, shear walls, and foundation bases will be constructed using reinforced concrete. Structural steel will be used to reinforce the concrete since the concrete is weak in tensile strength. Structural steelworks will involve steel cutting, welding, and fixing on the already constructed form work before concreting is carried out. Other steel works will include the fabrication and installation of metal guard rails and balustrades as specified in the approved plans.

vi. Plumbing, Mechanical and Electrical works

This phase will involve the installation of water and waste water piping, electrical gadgets, and appliances including lighting fixtures and connection of the electrical and mechanical configuration to the sewer line and existing

power lines upon acquisition of the necessary approvals. All the electrical works will be carried out by a licensed electrician to the satisfaction of the Kenya Power and Lighting Company (KPLC). The phase will be followed by an inspection and a report issued to the relevant authorities before approval is granted. vii. Interior and Exterior Finish After concrete and masonry works are completed, plastering will be carried out to ensure the building is structurally strong, protected from weather effects, and given an attractive look. This will be done both internally and externally in line with the specifications of the project architect. After plastering, the painting of the development will be carried out with cement primer and eco-friendly zero Volatile Organic Compounds (VOC) paints and fixing of the floor and wall tiles.

vii. Landscaping and Final clean up

The final clean-up will be done once the construction activities are completed. All the waste will be reused where feasible and/or transported to designated approved dump sites. Thereafter, a landscaping exercise will be carried out to improve the aesthetic value or visual quality of the site. This will include the planting of grass beds and trees, and the establishment of theme gardens and lush grass lawns where applicable. It is noteworthy that the proponent will use plant species that are available locally preferably indigenous ones for landscaping.

2.6.3 Occupation Stage

These are residential apartments with activities such as cooking, laundry, cleaning, leisure, and recreational activities.

2.6.4 Decommissioning Stage

Disposal of the residential apartments and their associated facilities will be carried out after the expiry of the project life span. All relevant agencies including the project consultants will be notified before the decommissioning is carried out with a bid to ascertain guidelines on possible impacts and mitigation measures. Some of the project decommissioning activities will include;

i. All equipment including the mechanical and electrical fixtures and fittings will be dismantled and removed from the site. Priority will be given to the reuse of the equipment in other projects through auctioning to other contractors or reuse in another proponent's site.

ii. The project components including the buildings, pavements, parking areas, and perimeter fence will be demolished. The debris will be reused where feasible and/or disposed of by a licensed waste handler.

iii. The site will be restored through replenishment of the topsoil and re-vegetation using indigenous plant species. The unsafe areas will be fenced until natural stabilization occurs

2.7 Construction Products, By-Products, and Wastes

2.7.1 Products

The final product will be eighty six (86) housing units a mix of 1,2- and 3-bedroom apartments, amenities, and parking.

2.7.2 By-Products

The by-products will be disposed of as follows:

i. Soil generated during excavation will be reused elsewhere in the project and/or transported for disposal at designated areas by a licensed waste handler.
ii. Excess sand, ballast, and material stockpiles will be used for future construction activities e.g. renovations. Upon completion of the project, these will be moved by the contractor to a suitable yard.
iii. Empty cans and drums will be used to store water during construction and the damaged ones will be recycled
iv. Pieces of timber/wood will be used as form work in other proposed projects.

2.7.3 Solid andLiquid Waste Management

The solid waste generated during construction will include construction and demolition debris, sanitary waste, excavated soil, and rocks. During the operation phase, the solid wastes that may likely be generated are paper, plastics, cans, pieces of metal and glass, and sanitary and organic waste. All liquid waste will be be disposed off in a septic tank whereas the solid waste will be segregated, reused, and/or recycled where appropriate and disposed of at designated areas by a licensed waste

handler. The wastes shall be disposed of by the proponent following the standards and documented procedures stipulated in the Waste Management Regulations.

2.8 Project Budget

The proposed project is estimated to cost Two hundred ninety eight million, three hundred and seventy thousand, four hundred and ninety three **(Kshs 298,370,493)**

CHAPTER THREE

3

BASELINE INFORMATION

3.1 PHYSICAL ENVIRONMENT

3.1.1 Climate

Mombasa County is characterized by a flat topography and an altitude that ranges from 0 to slightly over 76 meters above sea level. The county has a climatic condition that can be described as tropical dry and wet with bimodal rainfall, with the most rainy months being between April and May. Rainfall is minimal between January and February. The average amount of rainfall is approximately 1070 mm per year. The mean temperatures range between 23.5 degrees Celsius and 27.5 degrees Celsius, but this is projected to change because of climate change and global warming if the necessary measures are not put in place.

The design has taken into account the coastal climate by providing adequate ventilation and fan installations.

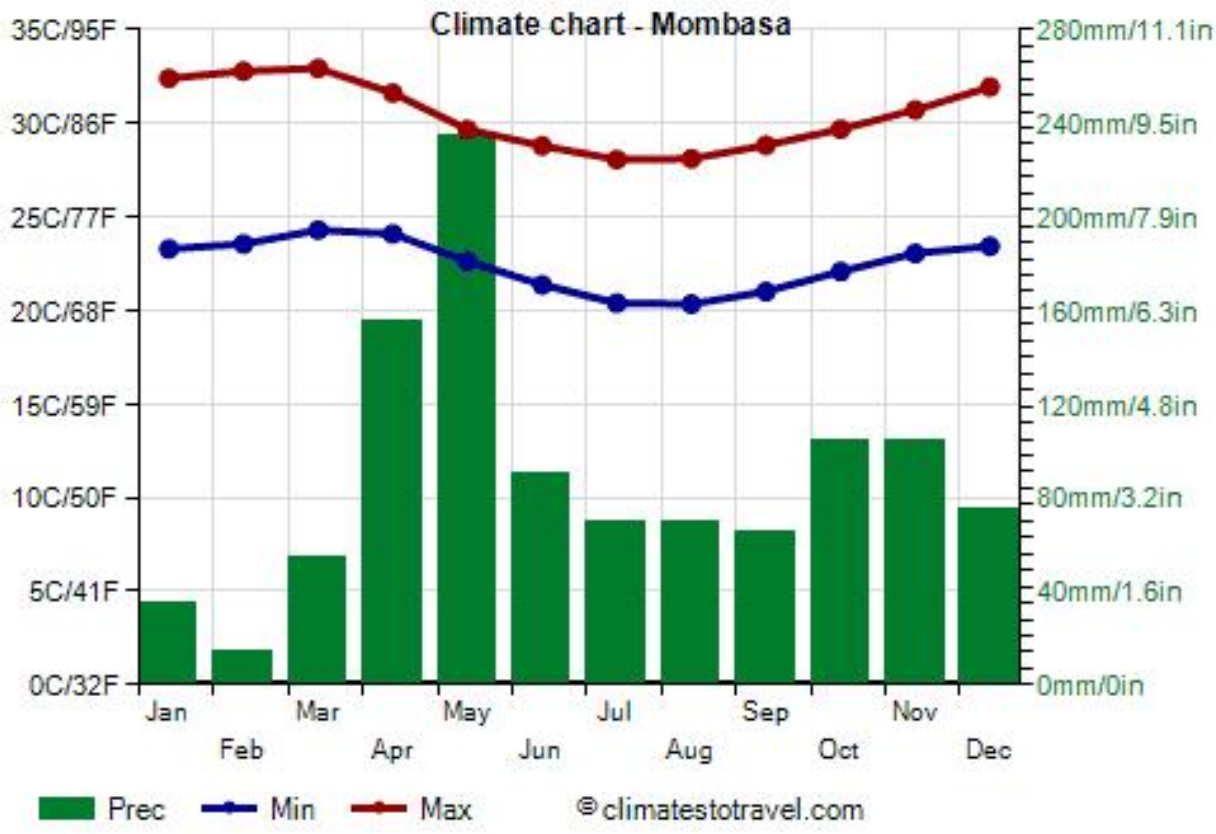

Figure 2: Kenya climate - Mombasa

3.1.2 Topography and Drainage

The site lies at an altitude of approximately 17 meters above sea level. The topography of the site is generally flat. The site is well drained through the use of natural drainage and permeable soils. There is also an existing open drain along the road. Since the site has a gentle slope, the expert recommends proper landscaping before structuring.

3.1.3 Geology and Soils

The soils are predominantly sandy white, just like most of the region. The proponent is expected to carry out a geo-technical survey to establish the soil carrying capacity as well as the minimum foundation depth, thereby making appropriate designs that will take the findings of the survey into consideration.

3.1.4 Hydrology

The closest water bodies to the project site are the Indian Ocean at approximately 200m from the site

3.2 Biological Environment

3.2.1 Flora

Some of the dominant plant species identified on the site are ; coconut palm tree, Frangipani, Ashok, Norfolk Island pine and several grass species. These will be cleared to pave the way for the proposed project, and measures will be taken to replant.

3.2.2 Fauna

During the site visit there were no animals identified on site but the project should ensure sustainable development to avoid environmental polluting activities that could affect fauna within Mombasa region.

Plate 7: Tropical Almond *(Terminalia catappa L)*

Plate 8: Ashok *(monoon longifolium)*

Plate 9: Norfolk island pine *(Araucaria heterophylla)*

Plate 10: coconut palm (cocos nucifera)

3.3 Socio-economic environment

3.3.1 Land Use

Mombasa County and its metropolis have an estimated population of 1.44 million and a density of 4,100 people per km^2, and this population is expected to continue rising. This calls for planning geared toward sustaining the population. It is in line with this that the county has seen trends appear in the land use inventory over the years. The neighborhood area is characterized by commercial, recreational, and residential units such as the Reef House, Reef hotel, Naivas Supermarket, and Nyali Cinemax, City mall Nyali and Nyali centre shopping mall.

3.3.2 Educational Institutions

There has been an increase in the number of educational facilities in the area as a result of the incoming population. Some of the institutions found in the area include Technical University of mombasa, Maville academy, The light International school and Abu-rayyan Academy.

3.3.3 Commercial Activities

There are very few commercial activities within a one-kilometer radius. However, within a ten-kilometer radius of the site, there are various commercial activities that include Citymall, Naivas Supermarket, Reef hotel, Nyali centre shopping mall and Nyali Cinemax.

3.3.5 Security

There are security lights installed along the access road. These lights are used to promote security in the area, increase quality of life by artificially extending the hours in which they are lit, and also improve the safety of drivers, riders, and pedestrians. Security in the area is also beefed up by the nearby Nyali Police Station, which is located approximately 5 kilometers from the proposed site.

3.3.6 Health Facilities

The health facilities located within a 1500-meter radius of the project site include Premier Hospital Nyali bridge hospital and the Nyali Children's and Women's Hospital.

3.4 Infrastructure

3.4.1 Roads and accessibility

The property is accessed through links Road. The access road is tarmacked and in good condition. The accessibility of the site will be instrumental during the project cycle.

3.4.2 Water supply

The general area is served with water supplied by MOWASSCO. The developer intends to connect to the main water supplier upon acquisition of the relevant permits from the company. However, to supplement the water supply from the company, the developer also intends to:

i. Make arrangements with registered water vendors to supply water to the site in case of a shortfall in the normal supply.

ii. Provision of underground and roof tanks for water storage for the proposed project.

iii. Borehole (subject to approval).

3.4.3 Sewer System

The site is not yet connected to the sewer line, but the proponent intends to use a septic tank and soak pit for liquid waste disposal.

3.4.4 Storm Water Drainage

The proposed construction site does not have any water drainage systems in place. The proposed construction will put in place rainwater harvesting facilities at the completion of the project to reduce the surface run-off from the proposed project site. The water will be used for irrigation and watering plants.

3.4.5 Solid Waste Management

The solid waste in the area is managed by the county government. The solid waste generated from the proposed project will be segregated, reused or recycled where feasible, and transported for final disposal. The proponent will engage the services of a licensed waste handler to transport waste at regular intervals during the project cycle.

3.4.6 Electricity

The site is already served by electricity from the national grid, as two previous developments by the proponent are adjacent to the project site.

3.4.7 Communication

The area is well covered by communication facilities such as Telkom, Safaricom, and Airtel, among others. All these will facilitate communication during the project cycle.

CHAPTER FOUR

4

POLICY FRAMEWORK

4.1 INTRODUCTION

Every development activity has the potential to impact the environment, both positively and negatively. Therefore, the proponent of any project must conduct a comprehensive Environmental Impact Assessment (EIA) study in accordance with the guidelines provided in the EIA/EA regulations of the Environmental Management and Coordination Act (EMCA) 2015. During the project cycle, the proponent must adhere to the EMCA guidelines, local laws, and international laws.

4.2 Global Policies

4.2.1 Sustainable Development Goals (SDGs)

In 2015, the United Nations adopted the Sustainable Development Goals (SDGs) to contribute towards ending poverty, protecting the planet, and ensuring prosperity for all as part of a new sustainable development agenda. The proponent of the proposed project shall be committed to the SDGs and contribute to achieving the following goals:

Goal 3: Good Health and Well-Being

The project shall provide a safe and clean environment to improve health and productivity.

Goal 6: Clean Water and Sanitation

The project shall connect liquid waste to the sewer system and provide adequate sanitary facilities to improve water quality and sanitation.

Goal 7: Affordable and Clean Energy

The project shall implement an energy management system using solar energy as an alternative source of energy to increase energy efficiency.Other ways to increase efficiency will be through natural ventilation, natural lighting, solar shading, good orientation and energy efficient fittings.

Goal 8: Decent Work and Economic Growth

The project shall create employment opportunities and promote a safe and secure working environment that emphasizes the protection of labour rights.

4.2.2 World Commission on Environment and Development

The World Commission on Environment and Development, also known as the Brundtland Commission, aimed to unite countries in pursuit of sustainable development. During the specified project cycle, the proponent shall ensure sustainability, especially with respect to the resources utilized.

4.2.3 RIO Declaration on Environment and Development

The RIO Declaration on Environment and Development was adopted by more than 178 governments at the United Nations Conference on Environment and Development in 1992. Principle 17 states that an EIA shall be undertaken for proposed activities that are likely to have significant impacts on the environment and are subject to a decision of a competent national authority. Since an EIA study has been conducted on the proposed project, the proponent shall adhere to its provisions.

4.3 National Policies

4.3.1 National Environment Policy

The Policy aims to provide a framework for an integrated approach to sustainable management of Kenya's environment and natural resources.

The Policy discusses intended climate change-related policy actions, as follows::

1) Develop a comprehensive climate change policy
2) Strengthen capacity for national and country level institutions for climate resilience and low carbon development
3) Develop and implement awareness and capacities for implement the climate change action plan
4) Strengthen and enhance an early warning and response system for disaster risk reduction
5) Strengthen research capacity
6) Develop a climate financing mechanism

7) Establish a national carbon trading platform

8) Promote public and community participation in mitigation and adaptation

The proponent has intends to use local/regional available materials with low environmental impacts in the proposed development. Public and community participation has also been adequately carried out in the EIA.

4.3.2 The National Environmental Action Plan (NEAP)

The NEAP aimed to integrate environmental considerations into the country's economic and social development initiatives and plans through a multi-sectoral approach. Under the NEAP EIAs were introduced targeting industrialists, the business community, and local authorities (now the county governments). The proposed project shall be implemented and operated based on these guidelines.

4.3.3 National Policy on Water Resources Management and Development

The policy aims to promote the systematic development of water facilities in all sectors for the promotion of the country's socio-economic progress. It also recognizes waste water as a by-product and calls for the development of appropriate sanitation systems to protect people's health and water resources from institutional pollution. The same policy requires that such projects undergo comprehensive EIAs that provide suitable measures to ensure environmental resources and people's health in the immediate surrounding are not negatively impacted by the emissions.

The waste water from the proposed project shall be disposed off through septic tank where it will be treated and reused in farming the unused portion of the land and watering the plants.

4.3.3 Policy Paper on Environment and Development

The policy aims to ensure that environmental considerations are taken into account in all development policies, programs, and projects from the onset.

The policy emphasizes the need for an independent Environmental Impact Assessment (EIA) report prepared before implementing any industrial or developmental project. Additionally, the policy aims to establish effluent treatment standards that align with acceptable guidelines. This paper discusses various development issues that require a sustainable approach, including waste management and human settlement. The policy recommends promoting the re-use and recycling of residues, including waste water, and adopting low- or no-waste technologies.

It also emphasizes the importance of increasing public awareness and appreciation of a clean environment and involving stakeholders in waste management within their communities. With regards to human settlement, the paper advocates for improved planning in rural and urban areas and the provision of essential services such as water, drainage, and waste disposal facilities

In this regard an EIA has been carried and the recommendations given to guide the proponent in implementing the project..

4.3.4 The Climate Change Act 2016

The Climate Change Act 2016 mandates the national and county governments in Kenya to apply its provisions in all sectors of the economy to promote low carbon development and sustainable development. The act aims to mainstream climate change responses into development, planning, decision-making, and implementation

According to the UNEP Sustainable Buildings and Climate Initiative, buildings are responsible for over 40% of global energy use and one-third of global greenhouse gas emissions. The Fourth Assessment Report of the IPCC estimated that building-related GHG emissions were approximately 8.6 million metric tons of CO^2 equivalent in 2004.(Levine et al., 2007) The growth rate of these emissions is concerning, with carbon dioxide emissions from electricity use in buildings growing at a rate of 2.5% per year for commercial buildings and 1.7% per year for residential buildings from 1971 to 2004. (Levine et al., 2007)Moreover, the Buildings and Construction Sector generates significant non-CO2 GHG emissions, such as halocarbons, CFCs, and hydrofluorocarbons, used for cooling, refrigeration, and insulation materials.

The primary source of greenhouse gas emissions from buildings is the consumption of fossil-fuel-based energy, including direct use of fossil fuels and electricity generated from them. Construction materials, such as insulation materials, and refrigeration and cooling systems also generate significant greenhouse gas emissions. Building activities, like in the proposed project, that will consume energy include the manufacturing and transport of building materials, construction, operation, and demolition of buildings during decomissioning.

To reduce the environmental impact of buildings, experts recommend the use of green building design, which prioritizes the use of sustainable materials and energy-efficient systems. This includes strategies such as passive heating and cooling, renewable energy sources, and energy-efficient technologies like LED lighting and high-efficiency HVAC systems. Integrating sustainable design principles into development, planning, and decision-making can help ensure that future buildings are designed with

sustainability in mind, contributing to a more sustainable built environment for future generations.

4.3.4.1 Green Architecture Approach

Sustainable Construction Approach

The sustainable site approach for the design emphasizes a Low Impact Development Strategy that considers the existing flora and fauna. One of the key sustainable measures involves maintaining the natural flow of stormwater. This will be achieved by employing stormwater management techniques that prioritize directing maximum stormwater into the ground rather than through pipes. Permeable paving materials like pavers will be utilized to allow rainwater to seep into the soil, contributing to the natural water balance. Additionally, the gradual greening of the development, including the maturation of landscaped areas and trees over time, will further support this water balance by intercepting more rainwater. Another aspect of the sustainable approach focuses on reducing pollution, particularly dust and noise pollution during the construction phase.

Material Management

The development will prioritize the use of locally available materials in its construction to minimize economic and environmental costs while integrating harmoniously with the natural landscape. This approach will foster a sense of belonging to the environment. Additionally, the project will implement a solid waste management disposal system, including a Construction Waste Management Plan,

which will guide the proper disposal, minimization, and reuse of materials. Furthermore, if materials from the demolished

building are found to be in good condition, they will be repurposed for backfilling and other purposes, aligning with the goal of reducing waste and maximizing resource efficiency.

Water and Energy Usage

The main source of energy will be from the National Grid, standby generator and solar will be installed to supplement the Kenya Power & Lighting Company (KPLC) electrical supply hence reducing its consumption considering its mainly generated from natural resources such as hydropower and geothermal. Unsustainable use of the power can lead to depletion of natural resources hence the call for efficient use. Energy efficiency is a key focus of the development, demonstrated by the specification of energy-efficient lighting fittings such as LED lights and the installation of solar panels for lighting and water heating.

Additionally, the installation of solar panels on the roof will provide renewable energy for lighting and water heating, further enhancing energy efficiency. The project will utilize water from the supply of a borehole within the site if the quality is deemed suitable for construction. The contractor, and occupants of the once completed building shall be encouraged to use water sparingly to avoid wastage.

In terms of water efficiency, the development has integrated water-saving measures through the use of water-efficient sanitary fittings. For instance, low-flow toilets and faucets will be installed throughout the building to minimize water usage. These water-efficient fittings are designed to reduce water wastage without compromising

on functionality, contributing to sustainable water management practices within the development.

Indoor Environmental Quality (IEQ)

The design of the building has been meticulously planned with a focus on creating a healthy and conducive environment for its occupants. This includes considerations for indoor air quality, access to natural daylight and views, comfortable acoustic conditions, and giving occupants control over lighting and thermal comfort. Ensuring better indoor environmental quality not only benefits the health and well-being of the occupants but also adds value to the building and reduces liability for the owners.

To achieve this, several measures have been proposed:

Indoor Air Quality Plan: This plan addresses the quality of air inside the building, focusing on pollutant concentrations and thermal conditions that affect occupants' health and comfort. Strategies include using building materials with low volatile organic compound (VOC) content and flushing out toxins before occupancy.

Thermal Comfort: The building materials chosen will contribute to maintaining a comfortable temperature zone within the structure.

Building Acoustics: The building's fabric and glazing thicknesses will be designed to minimize excess noise pollution from outside, with internal finishes to prevent echoes.

Building Finishes: Interior materials emitting low levels of VOCs will be prioritized during construction.

Flush Out: To improve indoor air quality, outdoor air will be circulated through the completed building for a period to remove emissions from newly installed

materials.

Adequate Ventilation and Exhaust: Proper ventilation and exhaust systems will prevent the build-up of odors, allergens, and toxins indoors. Cross-ventilation and openable fenestrations will be provided, alongside air conditioning where necessary.

Daylighting: An effective daylighting strategy will be implemented to illuminate the building space without causing glare or major light level variations, enhancing comfort and productivity.

Entryway Systems / Walk-off Mats: Entryway systems like grates and walk-off mats will be installed to reduce the amount of outside dirt and particulates

brought into the building, maintaining cleanliness.

Views (External and Internal): Landscaped surrounding areas, sun-shaded

fenestrations, and well-designed internal courtyards with water features and

planters will provide occupants with pleasing views, contributing to their overall

well-being.

Site Layout and Orientation

The proper site layout and orientation have been carefully considered to optimize energy efficiency. This includes minimizing solar exposure to the building facades by strategically orienting window openings predominantly towards the North-South direction. By doing so, solar loading is reduced, leading to a decreased demand for cooling systems. Furthermore, the relationship between the interior and exterior

spaces has been thoughtfully designed to maximize natural lighting and provide captivating views around the building, enhancing the overall user experience.

Passive Cooling Techniques

Passive cooling techniques play a significant role in the building's sustainability strategy.

An internal landscaped courtyard or atrium has been incorporated to facilitate passive cooling through the stack effect, especially benefiting the main circulation areas.

Additionally, a solar shading system has been implemented to minimize solar heat gain on the building facades, control glare, and evenly distribute daylight within interior spaces. These passive cooling measures not only contribute to energy efficiency but also create a comfortable and inviting environment for occupants while reducing the building's environmental footprint.

4.3.5 Sustainable Waste Management Act 2022

According to Part (iii) (12) (2) of the Sustainable Waste Management Act 2022, segregated waste must be placed in receptacles, bins, containers, and bags that are properly labeled and color-coded. Implementing source segregation is a crucial aspect of waste management as it can significantly improve the economics of the process. Source segregation reduces sorting costs and ensures that recyclers downstream receive uncontaminated materials, which enhances their capacity to extract value from post-consumer waste streams. As such, experts recommend sorting waste at the source into three categories: non-recyclable wastes, recyclable wastes, and organic wastes.

CHAPTER FIVE

5

LEGAL FRAMEWORK

5.1 Introduction

Several articles of constitution and legislative framework that govern environmental standards and quality have been use and the proposed project will conform to these statutes. EMCA Cap 387 established an authority whose purpose is to supervise and coordinate all matters relating to the environment and ensure implementation of all policies relating to the environment. In addition to EMCA, there are other statutes that are relevant to the proposed project.

5.2 The Constitution of Kenya 2010

The Constitution of Kenya serves as the highest law in the Republic of Kenya and applies to all individuals and state organs at every level of government. It establishes the overarching framework that regulates all areas of interest to the people of Kenya, and serves as the basis for all national and sector-specific legislation.

In relation to environmental matters, Article 42 of the Bill of Rights confers upon every person the right to a clean and healthy environment. This includes the right to have the environment protected for the benefit of both present and future generations, with legislative and other measures contemplated in Article 69, and to have obligations regarding the environment fulfilled under Article 70. Furthermore, Article 43 (1) (b) states that every person has the right to accessible and adequate housing and reasonable standards of sanitation.

According to Article 69 (1) (d), the state is responsible for encouraging public participation in the management, protection, and conservation of the environment, and for utilizing the

environment and natural resources for the benefit of the people of Kenya. Additionally, Section 2 of Article 69 specifies that every individual must cooperate with state organs and other persons to safeguard and conserve the environment, and ensure ecologically sustainable development and the use of natural resources.

The proponent will adhere to the environmental management plan (EMP) outlined in this report and take necessary measures to ensure that the right to a clean and safe environment is not violated. Consultations and public participation with potentially affected persons (PAPs) have already been conducted, and questionnaires are attached to the report.

5.2.1 National Construction Authority Act, 2011

The National Construction Authority Act of 2011 aims to regulate and streamline the construction industry in Kenya to promote sustainable development. The act establishes the National Construction Authority (NCA) and grants it the power to register contractors operating in the construction industry. It requires all contractors, whether foreign or local, to register with the authority. The act also regulates the activities of foreign contractors by restricting them to tender work only. Foreign contractors are licensed for a specified period and are only permitted to operate in Kenya during that time. Additionally, they must obtain a certificate of compliance and submit an affidavit to the NCA indicating that they will wind up their business after

completing their licensed project to prevent them from undertaking other construction work in the country.

The proponent shall apply for a permit from the NCA before commencing construction and work closely with the authority throughout the construction process to ensure compliance with the construction industry's regulations. The developer involved in the construction work is also be licensed by the NCA

5.2.3 Building Code

The Building Code provides general guidelines for constructing buildings and safety measures, including the installation of firefighting appliances and fire escapes. The code recognizes local authorities (county governments) as the primary planning agencies and requires developers to submit building plans to the relevant local authority for approval. The local authorities have the power to reject any plan that does not comply with the relevant by-laws or is incorrectly drawn. Developers must also give the local authority a notice of inspection before constructing a building, such as a residential block, and a notice of completion after the erection of the proposed structure for final inspection and approval.

The by-law mandates that the walls of any premise must be non-combustible throughout to prevent fire outbreaks. Moreover, every building that comprises more than one story, except for a small house, must have fire resistance. Section 214 further recommends the provision of firefighting equipment, such as hydrants, hose reels, fire appliances, external conations, portable fire appliances, water storage tanks, dry risers,

sprinklers, drenchers, and water spray spring protector systems, in public buildings whose floors are more than 20 feet above the ground level.

Before commencing construction, the proponent must submit architectural and structural plans to the county government for approval, in compliance with the Building Code. It is essential to obtain a certificate of completion issued by the local authority before occupying a building.

5.2.4 The Environment Management and Coordination Act, EMCA Cap 387, and Amendment 2015

According to the Environment Management and Coordination Act (EMCA) Cap 387 and Amendment 2015, every person has the right to a clean and healthy environment and must protect and improve the environment. This includes access to the environment for various purposes. As per Part VI Section 58(2) of the Act, the proponent of a project specified in the Second Schedule must conduct a full environmental impact assessment (EIA) study and submit an EIA study report to the Authority before obtaining any license. The Authority may exempt the proponent from submitting an EIA report in some cases. Section 58(5) requires that EIA studies and reports be conducted or prepared by authorized individual experts or firms of experts. The Authority must maintain a register of all authorized experts, which is open to the public upon payment of a fee. The EIA must be conducted in accordance with the EIA regulations, guidelines, and procedures issued under this Act.

5.2.5 Environmental (Impact Assessment and Audit) Regulations.

These regulations stipulate how an EIA study report should be prepared and specify all the requirements that must be complied with. It highlights the stages to be followed, the information to be made available, the role of every stakeholder, and the rules to be observed during the EIA study report-making process. Section 4(1) states that no proponent shall implement a project likely to have a negative environmental impact or for which an EIA is required under the Act or these Regulations unless an EIA has been concluded and approved under these Regulations. Section 11(1) states that an EIA study shall be conducted following terms of reference developed during the scoping exercise by the proponent and approved by the Authority. Section 13 (1) and (2) further state that the proponent shall, on the approval of the terms of reference under Regulation 11, submit to the Authority the names and qualifications of the impact assessment experts appointed to undertake the EIA study and authorized to do so under Section 58 (5) of the Act, and that every EIA study shall be carried out by a lead expert qualified following the criteria of the listing of experts specified in the Fourth Schedule to these Regulations. Section 17(l) stipulates that during the process of conducting an EIA study under these regulations, the proponent shall, in consultation with the authority, seek the views of persons who may be affected by the project. Part IV of the regulations states how an EIA study report is conducted, the contents and information required for submission, the timeline, and the review process. The proponent has undertaken this EIA study report in line with all the provisions set out in these regulations. The TOR was submitted to the authority and approved in line with the regulations. A public meeting, the administration of

questionnaires, and direct interviews were conducted to seek the views of PAPs in line with these regulations.

5.2.6 The Water Act, 2016

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

5.2.7 Occupational Health and Safety Act.

The Act makes provisions for the health, safety, and welfare of persons employed in factories and other places of work. The provision requires that all practicable measures be taken to protect persons employed in the factory and other places of work from any injury. The provisions of the act are also relevant to the management of hazardous and non-hazardous wastes that may arise at the project site. The act provides that all measures should be taken to ensure the safety, health, and welfare of all stakeholders in the workplace.

Workers and occupants' safety will be given priority during both the construction and operation phases of the project. The proponent will appoint a reputable contractor who will be responsible for enforcing the requirements during construction and subsequent repairs and maintenance after project completion.

5.2.8 The Physical Planning Act

Section 30(1) of the act stipulates that no person shall carry out development within the area of a local authority (now county government) without development permission granted by the local authority under Section 33. Section 31 further states that any person requiring development permission shall make an application in the form prescribed in the Fourth Schedule to the clerk of the local authority responsible for the area in which the land concerned is situated. The application shall be accompanied by such plans and particulars as are necessary to indicate the purposes of the development, and in particular, shall show the proposed use and density and the land which the applicant intends to surrender for purposes of principal and secondary

means of access to any subdivisions within the area included in the application and to adjoining land for public purposes consequent upon the proposed development.

Section 36 states that if in connection with a development application a local authority thinks that proposals for industrial locations, dumping sites, sewerage treatment, quarries, or any other development activity will have an injurious impact on the environment, the applicant shall be required to submit together with the application an environmental impact assessment report. The proponent has submitted the project designs to the county government of Mombasa for approval.

5.2.9 Public Health Act

Cap 242 Part IX, Section 115 of the Act states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health. Section 116 requires that the local authorities (county governments) take all lawful, necessary, and reasonably practicable measures for maintaining its district (counties) at all times in a clean and sanitary condition, and for preventing the occurrence therein of, or remedying or causing to be remedied, any nuisance or condition liable to be injurious or dangerous to health, and to take legal proceedings against any person causing or responsible for the continuance of any such nuisance or condition. Part XII, Section 136, states that all collections of water, sewage, rubbish, refuse, and fluids that permit or facilitate the breeding or multiplication of pests shall be termed nuisances and are liable to be dealt with in the manner provided by this Act. Section 138 states that no person shall, within a township, permit any premises or lands owned or occupied by him or over which he has control to become overgrown

with bush or long grass of such a nature as, in the opinion of the medical officer of health, to be likely to harbour mosquitoes. The proponent shall contract with a licensed waste handler to collect all waste from the site for disposal at an approved dumping site. Sewage from the site shall be discharged into the conventional sewer system. The proposed project shall be kept clean at all times, and the proponent shall ensure all provisions of this act are implemented.

5.2.10 Devolution laws

The Constitution of Kenya, 2010 creates a decentralized system of government wherein two of the three arms of government; namely the Legislature and the Executive are devolved to the 47 Political and Administrative Counties as provided for under Article 6 and specified in the First Schedule. The primary objective of decentralization is to devolve power, resources and representation down to the local level. The experts discussed with the proponent the various devolution laws that are relevant to the proposed development .

a. The County Government Act No 17 of 2012

This is an Act of Parliament to give effect to Chapter Eleven of the Constitution; to provide for county governments' powers, functions and responsibilities to deliver services and for connected purposes.

The Act gives the county the responsibility of planning and coordinating all developments within their areas of jurisdiction. Part XI (Sections 102–115) of the Act provides for the planning principles and responsibilities of the county governments. The land use and building plans provided for in the Act are binding on all public

entities and private citizens operating within the particular county. The proposed project is within the Mombasa City Government, and thus there will be a need to work in liaison with the County Government.

The proponent has complied with the act by getting all the relevant approvals for the project from county government of Mombasa

b. National Government Coordination Act No. 1 of 2013

This is an Act of Parliament to establish an administrative and institutional framework for coordination of national government functions at the national and county levels of governance. The proponent shall work in liaison with the county government, in particular the water, energy, forestry, environment, and natural resources sectors.

c . Environmental Management and Co-ordination (Waste Management) Regulation.

Sections 4 (1) and (2) of the regulations state that no person shall dispose of any waste on a public highway, street, road, recreational area, or any other public place except in a designated waste receptacle, and that any person whose activities generate waste shall collect, segregate, and dispose of or cause to be disposed of such waste in the manner provided for under these Regulations. Section 9 states that any person licensed to transport waste shall collect waste from the designated area of operations or storage areas and deliver such waste to the designated storage site, disposal site, or plant. The proponent shall engage the services of a licensed waste handler to transport waste to the designated areas. During the occupation, the proponent has provided litter bins to be used for the waste collection and segregation of waste before disposal.

D. The Environmental Management and Coordination (Noise and Excessive Vibration Pollution) Control Regulations.

Sections 3(1) and (2) of the regulations state that no person shall make or cause to be made any loud, unreasonable, unnecessary, or unusual noise that annoys, disturbs, injures, or endangers the comfort, repose, health, or safety of others or the environment, except as otherwise provided in the regulations. In determining whether noise is loud, unreasonable, unnecessary, or unusual, the following factors may be considered: time of day, proximity to residential areas, whether the noise is recurrent, intermittent, or constant, the level and intensity of the noise, whether the noise has been enhanced in level or range by any type of electronic or mechanical means, and whether the noise can be controlled without much effort or expense to the person making the noise. These regulations also relate noise to its vibration effects and seek to ensure no harmful vibrations are caused by controlling the level of noise. Part II, Section 4, states that except as otherwise provided in these Regulations, no person shall make or cause to be made excessive vibrations that annoy, disturb, injure, or endanger the comfort, response, health, or safety of others or the environment, or cause to be made excessive vibrations that exceed 0.5 centimetres per second beyond any source property boundary or 30 meters from any moving source. Section 13 (1) states that no person shall operate construction equipment (including but not limited to any pile driver, steam shovel, pneumatic hammer, derrick, or steam or electric hoist) or perform any outside construction or repair work to emit noise above the permissible levels as set out in the Second Schedule to these Regulations, except for the purposes in sub-regulation (2) hereunder. These purposes include emergencies, those of a domestic nature, and/or public utility construction. Section 14 relates to

noise and excessive vibrations from construction, demolition, mining, or quarrying sites, and states that where defined work of construction, demolition, mining, or quarrying is to be carried out in an area, the authority may impose conditions on how the work is to be carried out, including but not limited to requirements regarding machinery that may be used and the permitted levels of noise as stipulated in the Second and Third Schedules to these Regulations. The contractor shall ensure that all construction activities are carried out between 8:00 a.m. and 8:00 p.m. on weekdays to ensure that the neighbours are not disturbed. The contractor shall also ensure that all machinery is in good working condition to reduce frictional noise. The demolition of the existing house shall be carried out in accordance with these regulations.

E. The Environmental Management and Co-Ordination of Air Quality (Regulations, 2014)

The objective of these regulations is to provide for the prevention, control, and abatement of air pollution to ensure clean and healthy ambient air. Clause 5 states that no person shall act in a way that directly or indirectly causes, or is likely to cause, immediate or subsequent air pollution; or emit any liquid, solid, or gaseous substance, or deposit any such substance, at levels exceeding those set out in the First Schedule. Further, clause 6 stipulates that no person shall cause or allow the emission of the priority air pollutants prescribed in the second schedule to cause the ambient air quality limits prescribed in the first schedule to be exceeded. Clause 25(1) states that no person shall cause or allow the emission of visible air pollutants from a stationary or mobile vehicle above the limits set out in the prescribed standard. Clause 33 states that no person operating construction equipment or handling construction material shall allow the emission of particulate matter to adversely affect the limits set out in

the first schedule. Clause 35 states that no person shall cause or allow stockpiling or other storage of material in a manner likely to cause ambient air quality levels set out in the First Schedule to be exceeded. Clause 38 stipulates that no person shall cause or allow emissions of priority air pollutants set out under the Second Schedule from the disposal of medical waste, domestic waste, plastics, tyres, industrial waste, or other waste by open burning.

The proponent shall comply with these regulations and implement all mitigation measures provided in the EMP to prevent air pollution during the project cycle.

F. Environmental Management and Co-ordination (Water Quality) Regulations

The regulations apply to drinking water, water used for industrial purposes, water used for agricultural purposes, water used for recreational purposes, water used for fisheries and wildlife, and water used for any other purposes. Part II, Section 4 (1), states that every person shall refrain from any act that directly or indirectly causes, or may cause, immediate or subsequent water pollution, and it shall be immaterial whether or not the water resource was polluted before the enactment of the Act. Subsection (2) further states that no person shall throw or cause to flow into or near a water resource any liquid, solid, or gaseous substance or deposit. Part IV, Section 24, states that no person shall discharge or apply any poison, toxic, noxious, or obstructing matter, radioactive wastes, or other pollutants, or permit any person to dump any such matter into the water meant for fisheries, wildlife, recreational purposes, or any other uses. According to these regulations, every person shall refrain from any action that directly or indirectly causes, or may cause, immediate or subsequent water pollution, and it shall be immaterial whether or not the water

resource was polluted before the enactment of the Act. All waste water shall be disposed off through septic tanks where it will be treated and reused in agriculture.

5.2.11 Energy Act.

The Energy Act establishes the Energy Regulatory Commission (ERC), which is responsible for various functions related to energy production, transmission, policy setting and enforcement, public education, energy conservation strategies, and energy licensing processes in Kenya. Section 30 of the Act outlines the factors that must be considered before issuing a license. The Act requires an entity to preserve and protect the environment and natural resources in compliance with the EMCA Cap 387. Additionally, the Act prioritizes the safety and well-being of energy users, ensuring that the licensed service provides a safe operating environment for users and the public. The project in question will connect to the national electricity supply KPLC once the necessary permits have been obtained.

5.2.12 Cap 63 of the Penal Code

The Penal Code's CAP 63, Chapter XVII, addresses "Nuisances and offenses against health and convenience." The chapter strictly prohibits the release of foul air into the environment, as it poses a risk to human health. According to the code, any person who intentionally corrupts or contaminates public water sources or reservoirs, making it unsuitable for its intended purpose, or who intentionally pollutes the air in any location, making it hazardous to the health of individuals in the surrounding area, is committing a misdemeanor offense. Waste disposal and other project-related activities must comply with the provisions outlined in this code.

5.2.13 Land Registration Act, 2012

According to Section 26 subsection (1) of the Land Registration Act, 2012, the certificate of title issued by the Registrar upon registration or to a purchaser of land upon transfer or transmission by the proprietor shall be considered prima facie evidence in all courts that the named proprietor is the absolute and indefeasible owner of the land, subject to any restrictions,easements, encumbrances, and conditions contained or endorsed in the certificate. The proprietor's title cannot be challenged, except on grounds of proven fraud or misrepresentation by the person, or where the certificate was illegally acquired through corrupt means. Additionally, certified copies of registered instruments signed and sealed by the registrar shall be accepted as evidence in the same manner as the original. A copy of the land ownership documents is attached to this report.

5.2.14. The National Land Commission Act, 2012.

The National Land Commission Act, 2012 (No. 5 of 2012) outlines the functions of the commission under Article 67 (2) of the constitution, as provided in Section 5 of the act. These functions include managing public land on behalf of the national and county governments, recommending a national land policy to the national government, advising the national government on a comprehensive program for registering land titles throughout Kenya, conducting research on land and natural resource use, initiating investigations into present or historical land injustices and recommending redress, and overseeing land use planning nationwide.

It is important to note that the subject plot is private utility land owned by the proponent and does not constitute part of disputed public or private land

CHAPTER SIX

6

INSTITUTIONAL FRAMEWORK

6.1 Introduction

There are various institutions, both local and international, dealing with environmental issues. Some of the Key institutions include the National Environmental Management Authority (NEMA), MOWASSCO, UNESCO, UNEP among others.

6.2 Institutions

6.2.1 National Environmental Management Authority (NEMA)

NEMA was established with the objective and purpose of overseeing all matters related to the environment and being the primary government instrument for implementing environmental policies. The agency is headed by a director general appointed by the president and is responsible for coordinating environmental management activities, integrating environmental considerations into development policies, and ensuring sustainable utilization of environmental resources to enhance the quality of life in Kenya. Additionally, NEMA identifies projects and programs that require environmental audits or monitoring under EMCA and reviews and licenses EIA study reports submitted by project proponents. Proponents must

collaborate with NEMA to comply with the EMCA provisions and other subsidiary legislation under the Act.

The experts worked with NEMA in ensuring the EIA followed the right procedure.

6.2.2 National Environment Tribunal (NET)

The National Environment Tribunal (NET) is established in accordance with Section 125 of the EMCA (Cap 387) and is responsible for adjudicating all cases related to environmental offences within Kenya. In the event of any disagreements arising from a proposed project, the tribunal shall hear and decide on the matter. If any individual is dissatisfied with the decision or ruling of the tribunal, they may appeal to the high court.

6.2.3 County Environment Committee (CEC)

The minister of environment appoints CECs of NEMA in every county in Kenya. The CECs are responsible for the proper management of the environment within the counties which they are appointed.

6.2.4 Public Complaint Committee (PCC)

NEMA establishes the PCC whose functions include the following:

a. To investigate allegations or complaints against individuals, institutions, companies or NEMA in relation to the condition of the environment, any suspected case of environmental degradation, and to report its findings together with recommendation to the National Environment Council (NEC)

b. The PCC also prepares and submits to the NEC, periodic reports of its activities which eventually forms part of the annual report on the state of the environment under section 9(3)

6.2.5 National Environment Action Plan Committee

This is a committee established by NEMA as part of environmental planning. It performs the following tasks:

i. Recommend appropriate legal and fiscal incentives that may be used to encourage the business community to incorporate environmental requirements into their planning and operational processes.

ii. Recommend methods for building national awareness through environmental education on the importance of sustainable use of the environment and natural resources for national development.

iii. Set out operational guidelines for the planning and management of the environment and natural resources.

iv. Identify actual or likely problems that may affect the environment and natural resources.

v. Identify and appraise trends in urban and rural settlements development, their impacts on the environment and ways to mitigate the negative impacts.

vi. Propose guidelines for integration of standards of environmental protection into development planning and management.

vii. Identify and recommend policy and legislative approaches for preventing, controlling or mitigating adverse impacts on the environment.

viii. Prioritize areas of environmental research and outline ways of using research findings.

ix. Consider and record all monuments and protected areas declared by the Minister under the National Museums and Heritage Act.

6.2.6 Environment and land court

The Environment and Land Court is a superior court with the same status as Kenya's High Courts. It hears and decides disputes relating to the environment and the use, occupation of, and title to land. Appeals against its decisions lie with the Court of Appeal

Table 7: Compliance Table

S/NO	INSTITUTION/MINISTRY	Description	Compliance
1.	KRA	Pin Number	✓
2.	Physical Planning	Building designs	✓
3.	WRA	Demarcations	✓
4.	NLC	Title deed	✓
5.	NEMA	EIA licence	
6.	County Government	Approval of designs	✓
8.	NCA	Registration of construction site	✓

CHAPTER SEVEN

7

IMPACT ASSESSMENT, MITIGATION MEASURES, AND CONSTRUCTION SAFETY

Introduction

This chapter will discuss the prediction and analysis of the positive and negative impacts during the project cycle, that is, the construction, operation, and decommissioning phases. The various impacts were determined through discussion with the project consultants, stakeholder participation, a review of EIA guidelines, and professional judgement. The impacts are described in the following categories:

1. Magnitude (minor or major),
2. Duration (short-term or long-term),
3. Extent (specific, localized, or widespread),
4. Reversibility (reversible or irreversible)

The significant impacts, both positive and negative, are tabulated below:

Table 8: Impact parameters

Impacts	**Type of Impacts during the Phases**		
	Construction	**Operation**	**Decommissioning**
Increased housing units		- Major Positive - Long Term - Localized - Irreversible	
Employment opportunities	- Major Positive - Short Term - Localized - Reversible	- Major Positive - Long Term - Widespread - Irreversible	- Major Positive - Short Term - Localized - Reversible
Revenue Generation	- Major Positive - Short Term - Widespread - Reversible	- Major Positive - Long Term - Widespread - Irreversible	- Major Positive - Short Term - Widespread - Reversible
Market for goods	- Major Positive - Short Term - Widespread - Reversible	- Major Positive - Long Term - Widespread - Irreversible	
Growth of informal sector	-Major Positive -Short Term -Localized -Reversible	-Major Positive -Short Term -Localized -Reversible	-Major Positive -Short Term -Localized -Reversible
Noise pollution and vibrations	- Major Negative - Short Term - Localized - Reversible	- Minor Negative - Short Term - Localized - Reversible	- Major Negative - Short Term - Localized - Reversible
Traffic density	- Major Negative - Short Term - Localized - Reversible	- Major Negative - Long Term - Widespread - Irreversible	- Major Negative - Short Term - Localized - Reversible
Solid waste	- Major Negative - Short Term - Localized - Irreversible	- Major Negative - Long Term - Localized - Irreversible	- Major Negative - Short Term - Localized - Irreversible
Energy demand	- Major Negative - Short Term - Widespread - Irreversible	- Major Negative - Long Term - Widespread - Irreversible	- Major Negative - Short Term - Widespread - Irreversible
Air Pollution	- Major Negative - Short Term - Localized - Reversible	- Minor Negative - Short Term - Localized - Reversible	- Major Negative - Short Term - Localized - Reversible
Occupational Health and Safety	- Minor Negative - Short Term - Localized - Reversible	- Minor Negative - Long Term - Localized - Reversible	- Minor Negative - Short Term - Localized - Reversible

7.1 Positive Impacts

There are several beneficial impacts associated with the proposed project, as described below:

7.1.2 Housing

The proposed project is estimated to house eighty six families. This will alleviate the shortage of apartments in the country at large.

7.1.3 Employment Opportunities

The proposed project will create employment opportunities for both skilled and semi-skilled workers. During the construction phase, the project will employ masons, plumbers, and electricians, among others. For the operation phase, the project will employ cleaners, security guards, and caretakers, among others.

Once the construction is complete, realtors will as well get the opportunity to advertise and sell the units, thereby earning commission.

7.1.4 Government Revenue

There will be an increase in revenue to the government through the payment of relevant taxes (income tax, which will be 30% of the rent generated throughout the year).

A unit price will be Ksh 8M for I- bedroom, 11.5M for 2-bedroom and 18M for 3-bedroom. Therefore, the government is set to benefit from a capital gains tax amounting to Ksh 1,200,000 to Ksh 1,950,000 per unit.

S/n	CATEGORY	PRICE
1	1-BR	7.5M
2	2-BR	11.7M
3	3-BR	18.5M

Table 8: Price for units in Windsor Crescent

7.1.5 Market for goods

During the construction phase, the project will require a lot of building materials sourced locally. This will have a positive impact on the economic status of the suppliers and the national economy through lower V.A.T. rates for goods. The economy of the neighborhood will also receive a boost through the purchase of food items, drinks, and other commodities required by workers and residents.

7.1.6 Optimal land use

The proposed project will result in more economical use of the land with minimal significant environmental degradation.

7.1.7 Improvement of the informal sector

There are usually several informal businesses that come up during the construction periods of such projects. These include food vendors, who benefit directly from the

construction workers buying food and other commodities from them. This will promote the informal sector by securing some temporary revenue and hence improving their livelihood.

7.2 Negative Impacts

7.2.1 Noise and Excessive Vibrations

Noise pollution will have a negative impact and be limited to the construction period in the short term. The noise will be caused by the construction activities and the use of heavy machinery and vehicles during the transportation of materials to and from the site. Vibrations will be experienced during the excavation of the swimming pool site, concrete vibration during the concreting of the structural elements, and hacking of the walls and building elements during the plastering of the members. During the occupation of the apartments, there will be minimal noise and vibrations from the units.

Potential Mitigation Measures

i. Construction works shall be carried out only during the day, from 0800 hours to 1800 hours.
ii. Noise shields shall be used on noisy equipment, such as corrugated iron sheet structures, to minimize exposure to the neighbors and other workers on the site.
iii. Equipment installed with noise abatement devices shall be used as much as practicable.
iv. All machines and equipment shall be maintained regularly to reduce frictional noise.
v. All workers shall be provided with and use PPE such as earmuffs at all times.

vi. Drivers delivering materials shall avoid unnecessary honing of the trucks or vehicles.

7.2.3 Traffic Density

There will be an increase in traffic along the access road, which will be experienced during the construction phase since trucks will be accessing the site to deliver construction materials and take away construction waste. This phase of development may harm the present road network in the area. During the operation phase of the project, there will be an increase in the volume of traffic as a result of an increase in the number of cars accessing the site.

Potential Mitigation Measures

a. Traffic marshals shall be recruited to control traffic in and out of the site during construction.
b. Traffic control and warning signs near the construction site shall be installed to inform motorists and the public about potential hazards. The signs shall be positioned in a way to be easily viewed by motorists.
c. A traffic management plan shall be developed to ensure that site vehicles do not interfere with regular traffic along the adjacent roads or pose safety hazards to workers and the public.
d. Construction materials shall be picked up and delivered during off-peak hours.
e. Adequate parking bays shall be provided, and the proponent shall ensure that they are regularly maintained.

7.2.4 Solid Waste

Solid waste will have a major negative impact during the project cycle. The waste will consist of demolition and construction debris, excavated soils, cement bags, wood, broken glasses, containers, metal, sharp objects such as nails, organic waste, paper, and plastic, among others. The waste may result in the blockage of drainage systems, choke water bodies, and harm human health. During the occupation, waste may be organic (originating from the kitchen), paper, plastic, and containers. Unfit disposal of construction waste could have a medium- or long-term environmental and public health impact. The extent of this impact will be localized to areas where waste is dumped or their immediate neighborhoods.

Potential Mitigation Measures

i. Engage the services of registered waste handlers to transport waste to designated disposal sites.
ii. Segregation of waste at the source during the project cycle
iii. Provision of waste management rooms at strategic places within the apartments
iv. The use of an integrated solid waste management system, through a hierarchy of options including source reduction, recycling, composting, and reuse, will facilitate waste handling during the occupation phase.
v. Efficient use of building materials to reduce waste and recycle or reuse where feasible
vi. to manage waste in line with the Waste Management Regulations, 2006.

7.2.5 Energy demand

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

Potential Mitigation Measures

a. Use of solar energy as an alternative source of energy
b. Turn off machinery and equipment when not in use.
c. Monitor energy use during construction and set reasonable limits.
d. Put off all lights immediately when they are not in use or are not needed.
e. Install and perform routine maintenance on energy-efficient appliances, e.g., LED bulbs.
f. Exterior lights shall be controlled by a programmable timer.
g. The water booster set will contain inverter pumps for energy savings and precise control of flow and pressure rate.
h. The generator will be provided as a full backup energy source throughout the development.

7.2.6 Air Pollution

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

hazard, resulting in a nuisance to the workers and the public. Air pollution may also be a result of the combustion of fossil fuels from construction machinery. This is expected to have a short-term and reversible impact after the end of construction.

Potential Mitigation Measures

i. Use of dust nets and screens around the construction site to contain and arrest dust

ii. Regular sprinkling of water in work areas to prevent fugitive dust violations

iii. Use environmentally friendly fuels such as low-sulfur diesel.

iv. Minimize the period for the idling of machinery and construction vehicles.

v. Regular and prompt maintenance of construction machinery and equipment is necessary to minimize the generation of hazardous gases.

vi. Minimize exposed areas through the schedule of construction activities to enable dust control.

vii. Ensure no burning of waste, such as paper and plastic containers, on sites or non-designated areas.

viii. Restricting the heights from which materials are to be dropped, as far as practicable, to minimize the fugitive dust arising from unloading and loading.

ix. On-site dirt piles or other stockpiled material should be covered, windbreaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions.

x. 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.

xi. Provide PPE to the workers in dusty areas on the site.

xii. Monitor the air pollution levels regularly as per the Air Quality Regulations.

7.2.7 Water demand

The demand 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. On the job, water will be needed for cleaning, drinking, cooking, and recreational activities such as swimming. This will place strain on the existing water supply provided by MOWASSCO.

Potential Mitigation Measures

a. Drill a borehole to supplement the county's supply.

b. The contractor shall use water bowlers and tankers to bring in water for construction activities, i.e., during periods of high water demand (i.e., during slab formation). Water fetching shall, however, be subject to authorization by the relevant authority.

c. Provision of adequate underground and roof tanks for water storage

d. Use water-efficient appliances and fixtures to conserve water during the project cycle.

e. Provide notices and information signs to sensitize on means and needs to conserve water resources, i.e. "Keep/Leave the Tap Closed". This will awaken the civic consciousness of the workers and residents with regard to water usage and management.

f. Prompt detection and repair of all the water fixtures and fittings to reduce water wastage

7.2.8 Occupational Health and Safety

During the 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 or accidents to the workers. Food for the construction workforce is usually provided by mobile individuals, most of whom operate without licenses. This can compromise the health of the workers, especially if such foodstuffs are prepared in unhygienic conditions.

Potential Mitigation Measures

i. All workers shall use properly fitting PPEs to avoid injuries and illness, which include working boots, overalls, helmets, goggles, earmuffs, masks, gloves, etc.

ii. The contractor shall adopt suitable emergency response plans to manage the occurrence of anticipated hazards during the construction phase.

iii. Safety awareness may be gained through regular safety meetings, safety training, or personal interest in safety and health.

iv. Provide appropriate signage and warnings in work areas.

v. Provide first aid facilities and ensure that workers are trained in emergency response skills, such as first aid.

vi. Local individuals preparing food for the workers at the site shall be controlled, monitored, and evaluated to ensure that the food is hygienically prepared.

vii. Workers shall always be sensitized to social issues such as drugs and alcohol.

viii. Provide adequate and functional sanitary facilities for the workers.

ix. comply with OSHA 2007 and all other relevant regulations governing the health and safety of workplaces.

7.3 Construction Safety

The proposed site will involve construction activities that are dynamic for the workers engaged in the activities, resulting in their exposure to a variety of safety hazards such as falling objects, working from rooftops or scaffolding, exposure to heavy construction machinery, and electrocution while operating electrical equipment in moist areas. It is therefore a necessity to develop an EHS management plan to regulate environmentally induced diseases and occupational safety measures during the construction and operation phases of the proposed project. It is the obligation of the proponent and the contractor to ensure a safe and healthy environment at the workplace and within the neighborhood to prevent occupational diseases, injuries, and damage to property, control damage to equipment, and enhance environmental sustainability through the developed sound conservation measures. General Construction Guidelines Construction activities can be particularly hazardous, and this calls for the proper application of construction standards, the use of approved construction materials and PPE, fire safety, electrical safety, and other precautions that are essential for safe construction work.

The workers and the public will be guided by the following principle:

a. Do not walk, stand, or work under suspended loads. If you raise a load, be sure to crib, block, or otherwise secure the load as soon as possible.
b. Avoid placing unusual strain on equipment or materials.

c. Be prepared for unexpected hazards. Always be alert! - CREATE AND IMPLEMENT AN EMERGENCY RESPONSE PLAN FOR THE PROPOSED PROJECT.

d. Ensuring that PPE such as safety boots, helmets, goggles, ear muffs, and gloves are used at all times.

e. The contractor and his agents shall use barriers and guards as necessary to protect employees from physical hazards. Danger warnings shall be placed as necessary.

f. A well-stocked first aid kit shall be provided to take care of accidents that may arise during job execution. This shall be placed under the charge of a responsible person who shall readily be available during working hours.

g. Employees will be expected to take personal responsibility for their safety, the safety of colleagues, and the general public as it relates to the EHS management plan.

CHAPTER EIGHT

8

Public Consultations

1.1 Introduction

The Rio Declaration on Environment and Development**,** Principle 10 provides that "Environmental issues are best handled with participation of all concerned citizens, at the relevant level".

Similarly Chapter 23 (23.2) of Agenda 21 outlines public participation in decision making as one of the fundamental prerequisites for the achievement of sustainable development. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work. Individuals, groups and organizations should have access to information relevant to environment and development, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures.

The Kenyan Constitution (Cap. 5, Part II: Environment, 69(1 d)) provides for the legal right availed to all Kenyan citizens and residents to be included in any project that involves characteristic alterations to their environment.

These provisions are alluded to by the Environmental Management and Coordination Act (Cap 387) through the General Principles section (Part II, 5a).

A comprehensive public consultation is validated by the Environmental Impact Assessment and Audit Regulations, Section 17, which seeks public opinion, especially from those likely to be affected by the proposed project.

The procedures used by Green Kenya Investment Corporation to engage members of the public who reside within and outside the project area are outlined in this chapter.

The following were involved stakeholders:

1. Proponent
2. County government of Mombasa
3. Neighbouring residencies
4. Area administration
5. Professionals (Architects, project engineers and the Qs)
6. Education institutions
7. Religious institution

8.2 Objectives of the CPP

The objective of the CPP was to:

1. Dissemination of information. Inform stakeholders about the proposed project with special reference to its key components and anticipated impacts.
2. To seek suggestions, concerns, and issues from the PAPs about the project.

3. To fulfil one of the crucial requirements of the EIA process.
4. Obtain suggestions from the public on possible ways that they feel potential negative impacts can be effectively mitigated.
5. Incorporate the information collected in the EIA.

8.3 Methodology used in the CPP

During Environmental impact assessment study of the proposed project, EIA expert

conducted public participation by way of meetings, interviews, observations and questionnaires. This was preceded by stakeholder mapping engaged by stakeholder and public participation plan developed when preparing the Terms of Reference for the EIA.

Interviews were held with key informants including the project manager and architects. Invites for public participation meeting were sent to the stakeholders a week in advance. The public participation took place from 10th July up to 29th July 2025. Public participation meetings were held on site and the minutes are appended. Questionnaires were also used to obtain views and inputs from the neighbors and members of the public

8.4 Focused Group Discussions (FDG) Baraza

Consultative public participation (CPP) was held in the project site area to ensure accessibility for all neighbouring residents. The meeting point was agreed upon following the consultation held among the EIA consultant, area administration, and neighbouring residents. The CPPs

were conducted within the context of an open forum. Minutes of the meetings, as well as names, photos, and contacts of participants, were recorded.

The summary of attendance at the Consultative Public Consultation (CPC) meeting is shown below, while the minutes and attendance lists are annexed herein.

Plate 11: Public baraza at Epic Business park

Plate 12: Administration of pp tools at the site

Plate 13: Public consultation Consultation with the religious leaders (Bohara Dawood Mosque)

Plate 14: Baraza with Kenol Residents

8.5 Issues raised in FDG and Questionnaires

The stakeholders consulted gave both positive and negative views about the proposed development, as well as suggestions for the proponent to consider during project implementation.

8.5.1 Summary of potential project impacts and benefits

The project was welcomed by the respondents. The following responses were delivered from both the questionnaires and the FDG:

Table 9: Summary of potential project impacts and benefits

S/NO	Potential impact	Project benefit
1.	The residents were hopeful that the proposed development would provide job opportunities for both skilled and unskilled workers.	Job opportunities
2.	The proposed project, a residential facility, will provide additional accommodation in the Bamburi area.	Improved housing
3.	The residents would have a chance to put up structures such as kiosks to sell different varieties such as food, water, and credit, among other things.	Business opportunities
4.	There will be an increase in revenue to the government through the payment of relevant taxes, rates, permits, and fees.	Generation of Government revenue
5.	There will be an increase in security in the Bamburi area through an increased number of security guards and the installation of CCTV cameras.	Improved Security
6.	During the construction phase, the project will require a lot of building materials sourced locally. This will have a positive impact on the economic status of the suppliers and the national economy through V.A.T. for goods and services offered.	Market for goods
7.	The residents were optimistic that the project would curb the issue of drugs and substance use as the youths will be given jobs, having in mind that the project will run for 2-3 years, hence they will be busy all through.	Curb drugs and substance use

Source; public participation

Table 10: Summary of issues raised by the respondents during the public consultation

S/NO	Issue	Corrective Measure
1.	Traffic congestion and air pollution from the construction work	The proponent will employ marshals to control traffic in and out of the project site during Construction. Collecting building materials during off-peak hours (in the evening or early morning).
2.	Insecurity	The proponent will employ a security guard to keep records of who is entering and leaving the site. Fencing the project site to prevent intruders.
3.	Noise pollution	The operating machinery will have noise suppressors, and those without them will be switched off when not in use. The operation of the project is to be carried out during the day. 8 a.m. to 6 p.m.
4.	Air pollution	The project area will be scaffolded to contain the dust on the site. The project site will be sprinkled with water regularly to minimize the amount of dust produced.
5.	Solid waste generation	Waste generated will be segregated at the source with various labeled containers to ease waste collection. Waste will be collected regularly from the site to avoid accumulation and dumped into the authorized landfill. There is a need for workers to be sensitized to keeping the site clean and carefully disposing of waste such as plastic bottles.

Source; public participation

Suggestions made by the respondents

1. Job priority should be given to the area residents.
2. Due to insecurity issues, the proponent should ensure that no characters are hanging around in the name of seeking casual jobs and that the site is to be occupied only by involved workers.
3. The vehicles transporting the waste need to be covered well to prevent spillage on the roads and roadsides.
4. Construction work is to be done during the day.
5. Re-vegetate the site after construction work.
6. Considering the use of proper building materials and the safety of workers
7. Considering the height of the building
8. After construction, the proponent should find a way of integrating the community in the project cycle. This may be through community policing and making waste handling tenders non-competitive and reserving them for the locals who show interest and have the capacity to execute the task.
9. The developer should not shy away from incorporating locals with special skills into the project team. As they seek unskilled labor force from the locals, let them as well consider those with qualifications and skills as skilled labor force.

CHAPTER NINE

9

PROJECT ALTERNATIVES

9.1 Introduction

The various project alternatives were analyzed for the proposed residential development. The options included;

1. Re-location alternative.
2. Alternative Construction Materials
3. Alternative Technologies
4. Alternative design
5. No Project Alternative

9.2 Re-location alternative

Given the nature, time frame and objectives of the project, the proponent settled on this as the most feasible site. The proponent has settled on this site because it is located in an area that is compatible with the proposed development (there are other 8-15 storey residential apartments in the neighbourhood). The site is the most logical and convenient. Furthermore, the search for an alternative site would imply increase in the expenditure, time, and costs for the proponent.

9.3 Alternative Construction Materials

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. Metal scaffolds will be more advantageous than timber because they will reduce the wasting of precious trees, has a longer lifetime, provides a steady and firm standing, are easily assembled and dismantled, and increases work efficiency. The equipment that saves on water and energy will be given priority during the construction of the proposed project.

9.4 Alternative Technologies

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 disasters. Reinforced concrete can also endure very high temperatures from fire for a long time without loss of structural integrity.

9.5 Alternative design

The architectural design that was selected proved to be the most feasible. It provides sufficient space requirements, a variety of rooms to choose from, privacy, security, recreational facilities among other specifications.

The proponent settled on this design as a unique design that best meets the objectives of the Project. *Attached are the architectural drawings.*

9.6 No Project Alternative

This alternative implies that the status quo is maintained with no development of the Proposed Apartments and auxiliary facilities. This would avoid the realization of the impact's concomitant to the proposed development and provision of the housing units. However, with the demand for housing units especially in Nairobi County, lack of development of the proposed apartments will mean that the existing shortfall in residential units will continue to prevail unabated. The resources in the area would continue to be underutilized since the land lies idle and the numerous benefits to be gained associated with the proposed development would not be realized. Therefore, the" No Option alternative" is the least preferred and is deemed inappropriate on the basis that the supply of housing units is a necessity in the county and the country at large.

After careful examination of all the available alternatives, the expert settled on the proposed design with amendments.

The team recommends the project option with modifications.

CHAPTER TEN

10

10.0 Environmental Management and Monitoring Plan (EMMP)

Environmental monitoring involves the measurement of relevant parameters at a level of detail accurate enough to distinguish the anticipated changes. Monitoring aims at determining the effectiveness of actions to improve environmental quality. The EMMPs outlined in the table address the identified issues of concern (potential negative impacts) and mitigation measures, as well as roles, costs, and monitorable indicators that can help determine the effectiveness of actions to upgrade the quality of the environment as regards the proposed project. The EMMPs have considered all the phases, that is, the construction, operation, and decommissioning phases.

10.1 EMMP FOR THE CONSTRUCTION PHASE

S/n	Environmental Impact	Proposed mitigation measures	Responsibility	Mitigation frequency	cost
1	**Air pollution**	Regular sprinkling of water on work areas and access roads to prevent fugitive dust violation	Proponent Contractor DriverS Workers	Daily inspection	150,000
		Careful screening of construction site to contain and arrest construction-related dust	Proponent/Contractor	Daily inspection	
		Regular and prompt maintenance of construction machinery and equipment to minimize the generation of hazardous gases	Proponent/Contractor/Drivers	Regular	300,000
		All drivers shall be under strict instructions to minimize unnecessary trips and idling of engines	Proponent/contractor/Drivers	Routine inspection	
		Use environmentally friendly fuels such as low-sulfur diesel	Drivers	Regular	
		Provide personal protective equipment (PPE) such as nose masks, goggles. to the workers in dusty areas within the site	Proponent/ contractor	Routine inspection	150,000
2	**Noise pollution**	Ensure construction works are carried out only during the daytime i.e. from 0800hrs to 1800 hrs.	Drivers/Contractor/ Workers	Routine check-up	
		Ensure that all workers are provided with and wear PPE at all times	Proponent/ contractor	Daily routine	
		Ensure the use of suppressors or noise shields on noisy machinery and equipment	Contractor	Daily routine	300,000
		Ensure regular and	Contractor	Regular	

		prompt maintenance of the machinery and equipment to suppress frictional noise.			
		Operate noisy machinery only when necessary and switch them off when not in use	Contractor/ Workers	Daily inspection	
		Drivers to avoid unnecessary hooting and honing.	Drivers	Routine inspection	
3	**Solid and liquid waste**	Direct all liquid waste to the sewerage system	Contractor Proponent Workers	Daily routine	100,000
		Engage services of a registered NEMA waste handler to dispose of the waste regularly at approved disposal points	Proponent/ contractor	Regular	200,000
		Ensure the covering of the trucks during the transportation of the building materials and waste	Transporter/ Contractor	Regular	
		Segregate waste at the site, recyclable/reusable materials, and hazardous waste for appropriate disposal	Proponent/ contractor/workers	Daily routine	
		Sensitize workers on the reuse of materials where feasible	Proponent/ contractor/workers	Daily routine	
4	**Increased water demand**	Employ services of waters vendors to supplement the water supply	Contractor Proponent	Daily inspection	350,000
		Use of water-efficient appliances, fittings, and fixtures at the site	Proponent/ contractor	Regular	250,000
		Sensitize workers to reduce water wastage or reuse water	Proponent/ contractor	Daily routine	
		Connect to the MOWASSCO water supply after the acquisition of relevant	Proponent	Once	200,000

		permits			
5	**Health and safety of workers**	Ensure construction works are limited to daytime only	Proponent Contractor workers	Daily check-ups	
		Provide PPEs to the workers and ensure that they wear them at all times	Proponent Contractor	Before commencement	150,000
		All workers shall be sensitized before construction begins on how to control accidents related to construction	contractor	Before commencement	
		Keep a record of the public emergency service telephone numbers including Police, Fire brigade, and Ambulance at strategic points	Proponent Contractor	Regularly	
		Provide first aid kits at strategic places on the site	Proponent Contractor	Daily routine	50,000
		Prepare a comprehensive contingency plan before construction begins on accident response	Proponent Contractor	Before commencement	5,000
6	Impact on flora and fauna	Clearance of vegetation should be done in necessary areas only	Contractor		
		Carry out environmental compensation where harm cannot be avoided by planting of indigenous plants	Contractor	After completion	200,000
	Total				**2,405,000**

Table 11: Environmental management and monitoring plan for the construction phase

10.2 EMP FOR THE OPERATION PHASE

Table 11: Environmental management and monitoring plan during the Operation phase

S/n	Environmental and social impact	Proposed mitigation measures	Responsibility for mitigation	Monitoring frequency	Estimated cost Ksh
1	**Solid waste**	The use of an integrated solid waste management system; through a hierarchy of options: source reduction, recycling, composting, and reuse, will facilitate waste handling	Proponent Residents	Periodic Inspection	
		Ensure segregation of waste (organic and inorganic) at the source	proponent	Regularly	
		Provide marked dustbins cubicles to serve the specified use	proponent	At commencement	500,000
		Engage services of a registered NEMA waste handler to dispose of the waste regularly at approved disposal points	proponent	Regularly	100,000
2	**Increased water usage**	Use water-efficient appliances and fixtures for plumbing products	Proponent Residents	Routine maintenance	100,000
		Prompt detection and repair of all the plumbing products	Proponent/residents	Routine inspection	50,000
		Provision of roof/underground tanks for water storage	proponent	After implementation	350,000
		Encourage water reuse/recycling where feasible	proponent	Regularly	
		Provide notices and information signs to sensitize on means and needs to conserve water resources i.e. „Keep/Leave the Tap Closed“,. This will awaken the civic consciousness of the residents concerning water usage and management.	Proponent	Regularly	5,000
3	**Increased energy usage**	Solar energy will be used as an alternative source of energy for street lighting	Proponent	Regularly	950,000
		Use energy-efficient appliances such as LED bulbs for lighting	proponent	Regularly	250,000
		Provision of a generator as a backup energy source	proponent	Often	350,000
		Switch off electrical appliances when not in use	Residents	Regularly	
		Regular maintenance of all the electrical components	proponent	Regularly	50,000
		Regular inspection and maintenance of the solar panels	proponent	Regularly	50,000
4	**Liquid waste**	Provide adequate and safe means of handling sewage and waste water generated at the apartments	proponent	Continous	1,000,000
		Ensure regular monitoring of the sewage discharged from the project to ensure that the stipulated sewage/effluent discharge rules and standards are not violated	proponent	Continous	
	Total				**3,755,000**

10.3 EMP FOR THE DECOMMISSIONING PHASE

Table 12: Environmental management and monitoring plan during Decommissioning

S/n	Environment and social impact	Proposed mitigation measures	Responsibility for mitigation	Monitoring frequency	Estimated cost in Kshs
1	**Air pollution**	Sprinkling water regularly on dusty areas to suppress dust	Contractor Proponent	Daily inspection	100,000
		Ensure demolition machinery and equipment are well maintained to reduce exhaust gas emission	Contractor	Regularly	
2	**Noise pollution**	Demolition activities are to be restricted to daytime (8 am to 5 pm)	Proponent Contractor Workers	Routine inspection	100,000
		Use of Suppressors /noise shields on noisy equipment	Contractor	Regularly	30,000
		Ensure that all workers wear respective safety & protective gear (PPEs)	Contractor	Regularly	20,000
3	**Health and safety of workers**	All workers are to wear PPEs e.g. helmets.	Contractor	Daily inspection	100,000
		All workers shall be sensitized before demolition begins, on how to control accidents related to demolition	Contractor	Daily routine	
4	**Solid waste**	Ensure that all solid waste is disposed of at designated areas by the NEMA waste handler	Contractor proponent	Daily inspection	100,000
		Reuse of construction debris where feasible	Contractor proponent	Regularly	
		Ensure refuse collection vehicles are covered to prevent the scattering of wastes by wind during transportation	Contractor	Regularly	
	Total phase				**2,100,000**

Table 13: EMP total project cost

S/No	Phase	Amount	Percentage (%)	Responsibility
2	Construction	2,610,000	36.02	Developer
3	Occupational	3,500,000	47.96	Developer
4	Decommission	2,100,000	26.02	New Developer
5	**Total EMP Cost**	**8,210,000**	**100.00**	

10.3 ENVIRONMENTAL MONITORING

The proposed location of the proposed apartment units will require that regular monitoring of possible change in environmental parameters to be undertaken during the operational life of the housing units.

With increased urban development come the challenges of waste handling and disposal. The monitoring programme to be developed must take into account possible impacts of waste disposal. All wastes emanating from the housing units and its disposal must be monitored to ensure no environmental degradation arises.

With these factors in mind, there will be a need to put in place elaborate and sound environmental management system and mechanisms of monitoring on a continuous basis the environmental performance of the housing units. Undertaking monitoring and auditing of key environmental parameters and putting in place of all approved recommendation of the environmental management plan and conditions of the licence will achieve this. Monitoring to be undertaken will be both active and reactive.

10.3.1 Active monitoring

Active monitoring will include:

1. Monitoring of the achievements of specific plans of the ESMP, performance criteria and fulfilment of objectives.
2. Systematic inspection of work place.
3. Surveillance and monitoring of the work environment, including the organization of work and activities involved;

4. Monitoring of workers' health.

5. Monitoring of compliance with laws, regulations and other requirements.

10.3.2 Reactive monitoring

This would include:

i. Work related injuries, ill health (including record keeping and monitoring of sickness/absence), disease and accidents.

ii. Losses such as damage to property.

iii. Deficient safety and health performance.

iv. Workers rehabilitation and health restoration programmes.

10.3.3 Parameters

Monitoring will involve measuring, observing, recording and evaluation of physical, socio-economic and ecological variables within the project area and the neighbourhood. This may include the following;

1) Water quality monitoring for sources of domestic water.

2) Solid waste disposal monitoring.

3) Sewage disposal monitoring.

Water quality monitoring for sources of domestic water will involve monitoring in changes of the following variables:

Parameter	Guide Value (max allowable)
pH	6.5 – 8.5
Suspended solids	30 (mg/L)
Nitrate-NO3	10 (mg/L)
Ammonia –NH3	0.5 (mg/L)
Nitrite –NO2	3 (mg/L)
Total Dissolved Solids	1200 (mg/L)
Scientific name (E.coli)	Nil/100 ml
Fluoride	1.5 (mg/L)
Phenols	Nil (mg/L)
Arsenic	0.01 (mg/L)
Cadmium	0.01 (mg/L)
Lead	0.05 (mg/L)
Selenium	0.01 (mg/L)
Copper	0.05 (mg/L)
Zinc	1.5 (mg/L)
Alkyl benzyl sulphonates	0.5 (mg/L)
Permanganate value	(PV) 1.0 (mg/L)

Table 14:Water quality standards

Source: Environmental Management and Coordination (Water Quality) Regulations; 2006.

10.3.4 Effluent monitoring for discharge into the environment

Effluent monitoring for discharge into the environment will carried out as stipulated in the fourth schedule of the Environmental Management and Coordination (Water Quality) Regulations; 2006. The following parameters will be monitored for discharge into the environment; Biological Oxygen Demand (BOD), Total Dissolved Solids, pH, Faecal coliforms, oils and greases, temperature, colour, total phosphorus, Ammonia (as N), organic nitrogen (as N) and flow as follows;

PARAMETERS	MAXIMUM LEVELS PERMISSIBLE
Suspended solids (mg/L)	250
Total dissolved solids (mg/L)	2000
Temperature ^{0}C	20 -35
pH	6-9
Oil and Grease (mg/L)	where conventional treatment shall be used - 10
Oil and Grease (mg/L)	where ponds is a final treatment method - 5
Ammonia Nitrogen (mg/L)	20
Substances with an obnoxious smell	Shall not be discharged into the sewers
Biological Oxygen Demand BOD_5 days at 20^{o}C (mg/L)	500
Chemical Oxygen Demand COD (mg/L)	1000
Arsenic (mg/L)	0.02
Mercury (mg/L)	0.05
Lead (mg/L)	1.0
Cadmium (mg/L)	0.5
Chromium VI (mg/L)	0.05
Chromium (Total) (mg/L)	2.0

Copper (mg/L)	1.0
Zinc (mg/L)	5.0
Selenium (mg/L)	0.2
Nickel (mg/L)	3.0
Nitrates (mg/L)	20
Phosphates (mg/L)	30
Cyanide Total (mg/L)	2
Sulphide (mg/L)	2
Phenols (mg/L)	10
Detergents (mg/L)	15
Colour Less than	40 Hazen units
Alkyl Mercury Not Detectable	(nd)
Free and saline Ammonia as N (mg/L)	4.0
Calcium Carbide	Nil
Chloroform	Nil
Inflammable solvents	Nil
Radioactive residues	Nil
Degreasing solvents of mono-di-trichloroethylene type	Nil

Table 15:Standards for effluent discharge

Source: NEMA

10.3. 5 Monitoring schedule

S/N	**Description of parameter**	**Monitoring schedule and duration**
1	Ground water quality/sources of domestic water	annually
2	Solid waste	Daily throughout project life
3	Sewage disposal/effluent	annually

Table 16:Monitoring schedule

10.3.6 Environmental Auditing

Annual Environmental Audits should be carried out as provided for in the Environmental (Impact Assessment and Audit) Regulations of 2015. The Audits will serve to confirm the efficacy and adequacy of the proposed Environmental Management Plan. The audits should include but not limited to the following;

1. Waste generation, management and disposal.
2. Water analysis.
3. Views and comments from neighbours.
4. Progress in implementation of Environmental Management Plan.

CHAPTER ELLEVEN

11

11.0 GRIEVANCE MANAGEMENT

11.1 Introduction

Grievance readdress is a critical component of effective ESMP implementation. The purpose of GRM is to provide a forum to the internal and external stakeholders to voice their concerns, queries, and issues with the project. Such a mechanism would provide the stakeholders with one project personnel or one channel through which their queries will be channelled and will ensure timely responses to each query. This will allow for trust to be built amongst the stakeholders and prevent the culmination of small issues into major community unrest. The GRM will be accessible and understandable for all stakeholders in the project and for the entire project life. The GRM will be communicated to all relevant stakeholders and will also be applicable for any contractor that will occupy and/or use land during the construction and operations phase.

11.2 Grievance Definition/Categories

As stated earlier, a grievance is a concern or complaint raised by an individual or a group within communities affected by company operations. Both concerns and complaints can result from either real or perceived impacts of a company's operations and may be filed in the same manner and handled with the same procedure. Grievances may take the form of specific complaints for actual damages or injury,

general concerns about project activities, incidents and impacts or perceived impacts. Based on the understanding of the project area and the stakeholders, an indicative list of the types of grievances have been identified for the project, as can be seen below:

(A) **Internal Grievances:** Grievances from Employees (including both direct and indirect employees):

1. Complaints pertaining to amount of wage, salary, other remuneration or benefits as per Company's Human Resource policy.
2. Gender discrimination.
3. Workplace Sexual harassment
4. Violence against children e.g., child labour
5. Issues related to workers organization
6. Labour accommodation
7. Health and Safety issues; and
8. Extended working hours.

(b) External Grievances: Grievances from community members:

a. Issues related to sexual exploitation and abuse by project workers against community members
b. Issues related to gender-based violence at the community-level e.g., domestic violence
c. Issues related to child labour and protection

d. Issues related to transportation and traffic

e. Increase in environment pollution

f. Impact on community health

g. Disturbances to locals due to influx of migrant workers in the area

h. Issues arising out of sharing of employment and business opportunity; and

i. Concerns over the impact on local cultures and customs.

The list of grievances will be regularly updated as and when the new one arises.

11.3 Internal Grievance Mechanism

The proponent will hire a Liaison Officer (**LO**) who will serve to meet all community liaison responsibilities. The LO will assist the contractor social specialist in grievances management. The grievance mechanism will be founded on the following principles:

1. Responsibilities will be adequately assigned: A responsible person or team will be constituted and mandated to organise the resolution of grievances. This will enable the system run without undue impediments.
2. The process will be accorded due importance: It is important for affected communities and other stakeholder groups seeking to have their complaints resolved, to perceive the grievance management process as transparent and fair. The grievance management process will enhance outcomes and give people satisfaction that their complaints have been heard, even if the outcome is less than optimal.

3. The grievance procedures will be readily understandable, accessible, and culturally appropriated by the local population. From the outset, clarification will be made on who is expected to use this procedure. The people will be assured that there will be neither costs nor retribution associated with lodging a grievance. The entire process (from how a complaint is received and reviewed, through to how decisions are made and what possibilities may exist for appeal) will be made as transparent as possible through good communication.
4. The process will be documented and publicized: The process will be put in writing and publicized. The people will be informed on where to go and whom to talk to if they have a complaint and understand what the process will be for handling it. As with all information, it will be provided in a format and language readily understandable to the local population and/or communicated orally where it's established that literacy levels are low. It will not be overly complicated to use nor will it require legal counsel to complete.
5. The process will be made accessible: Projects that make it easy for people to raise concerns and feel confident that these will be heard and acted upon can reap the benefits of both a good reputation and better community relations. One of the best ways to achieve this is to localize your points of contact. Hire people with the right skills, training, and disposition for community liaison work and get them into the field as quickly as possible. Maintaining a regular presence in the local communities greatly helps to personalize the relationship with the company and engender trust. Talking with a familiar face who comes to the village regularly, or lives nearby, creates an informal atmosphere in which grievances can be aired and sorted out, or referred up the chain of command. This is usually more convenient

and less intimidating to people than having to travel distances to the company offices during business hours to file a formal complaint.

6. Response time will be defined, and transparency upheld: The client will publicly commit to a certain time frame in which all recorded complaints will be responded to and ensure this response time is enforced. This will help allay frustration by letting people know when they can expect to be contacted by client personnel and/or receive a response to their complaint. Combining this with a transparent process by which stakeholders can understand how decisions are reached will inspire confidence in the client system. During critical times such as construction, there will be immediate responses to time-sensitive complaints. A related issue is making sure that the community liaison officer has the authority to resolve basic complaints herself, as well as a direct reporting line to senior managers if the issue is more serious or costly to address.
7. Good record-keeping and feedback: a grievance logbook will be kept where necessary, and a detailed database will be maintained where required. Written records of all complaints will be kept as this is critical for effective grievance management. The record shall contain the name of the individual or organization; the date and nature of the complaint; any follow-up actions taken; the final result; and how and when this decision was communicated to the complainant.
8. There will be a separate reporting and documentation mechanisms for GBV (SEA and SH) cases that are discrete and anonymous.
9. Access to legal remedies will not be impeded: If the project is unable to resolve a complaint, it may be appropriate to enable complainants to have recourse to external experts. These may include public defenders, legal advisor's, or NGOs.

The client may find that it can work in collaboration with these third parties and affected communities to find successful resolution of the issues. However, this is not always possible, and situations may arise where complainants will choose to pursue legal recourse.

GRIEVANCE REGISTRATION	
CASE No.	**DATE**
Name	
Department/Contractor Name	
Phone Number	
Details of Grievance	
Name of Person Recording Grievance	
Designation of Person Recording Grievance	
Proposed Date of Response to Grievance	
Signature of Recording Person	Signature of Complainant
GRIEVANCE REDRESS RESPONSE	
Decision of LO (Give full details)	

Table 17:Sample Grievance Recording Form

11.4 Maintaining a Grievance Register

Each grievance thus received, shall be recorded in a grievance register. The format for the grievance register shall be as follows.

DATE	GR #	NAME OF GRIEVANT	WARD/VILLAGE	GRIEVANCE DETAILS	CONCERNED DEPARTMENT	NAME OF RECORDING PERSON	PRESENT STATUS	REMARKS

Table 18:Sample Grievance Recording Form

11.5 GRM Steps

1. Publicizing and Disclosure of the GRM

The GRM and other project-specific management plans will be disclosed in culturally appropriate languages, formats, and techniques (e.g., FGDs, public barazas etc.) and considering any disability, mobility and literacy challenges in a time frame that ensures meaningful consultations.

2. Receiving and Recording Grievances

As part of the GRM, the grievances from the stakeholder or their representatives may be communicated verbally (in person or over a telephonic conversation) or in written form (in the format given below) to the project representatives or to the LO directly. If the grievance is received directly by the LO or other project representatives, it will be recorded directly into the Grievance Form as soon as the personnel return to site. A sample grievance form is as follows.

GRIEVANCE REGISTRATION	
CASE No.	**DATE**
Name	
Department/Contractor Name	
Phone Number	
Details of Grievance	
Name of Person Recording Grievance	
Designation of Person Recording Grievance	
Proposed Date of Response to Grievance	
Signature of Recording Person	Signature of Complainant
GRIEVANCE REDRESSAL RESPONSE	
Date of Redress	
Decision of LO (Give full details)	

Table 19:Sample Grievance Registration Form

3. Maintaining a Grievance Register

Each grievance thus received, shall be recorded in a grievance register. This grievance register shall be updated at each stage of the grievance redressal. Once the grievance is recorded in the register, a preliminary analysis shall be undertaken by the contractors' social officer to ensure that the grievance is within the scope of the GRM.

4. Acknowledgement of Grievance

Upon the completion of the recording of the grievance, the stakeholder will be provided with an acknowledgement of the receipt, along with a summary of the grievance.

REGISTRATION OF GRIEVANCES.

1. **Name of claimant** ----------
2. **Community** ----------
3. **Date** ----------
4. **Case number** ----------

RESPONSE

Date of response ----------

Full names of respondent ----------

& signature----------

Table 20: Sample Acknowledgement Receipt for Claimant

In case the grievance is assessed to be out of the scope of the GRM, a communication towards the same shall be made to the grievant, and an alternative mode of redressal shall be suggested.

5. Site Inspection and Resolution

For the purpose of verifying and resolving the grievances received, site inspection may not be required in all the cases. Depending upon the sensitivity of the issue, requirement of a site inspection will be identified. A site inspection will be undertaken by the liaison officer or the project member assigned by the contractor's Environment and Social officer. The purpose of the site inspection will be to check the validity and severity of the grievance. For this purpose, the personnel may also undertake discussions with the concerned external stakeholder. The inspection will be undertaken within ten days of receiving the grievance. The assigned individual will then work with other relevant members of the Project team to investigate the problem and identify measures to resolve the grievance as appropriate. The personnel to be involved in the grievance resolution shall be dependent upon the nature of the grievance.

6. Resolution, Escalation, and Closure

Based on the understanding thus developed, the LO, in consultation with the concerned departments, shall identify a suitable resolution to the issue. This could involve provision of information to clarify the situation, undertaking measures to remedy actual problems or compensate for any damage that has been caused either by financial compensation or compensation in-kind, and introduction of mitigation measures to prevent recurrence of the problem in the future. This resolution shall be

accordingly communicated to the grievant within 10 working days of completing the site investigation.

7. Update of Records

The records of the grievance register shall be updated every working week with the present status of the grievance. Once the grievance is resolved, and the same has been communicated to the grievant, the grievance shall be closed in the grievance register. The grievance register should also provide an understanding of the manner in which the grievance was resolved. These instances shall then serve as references for any future grievances of similar nature.

11.6 GBV (SEA/SH) GRM

There will be a separate reporting and documentation mechanisms for GBV (SEA and SH) cases that are discrete from the standard GRM, that will be utilized by survivors or their representatives, to ensure all GBV cases are reported and handled confidentially. PAPs and all workers/staff will be made aware of these mechanisms through awareness sessions and staff inductions respectively. All registration of the data will be confidential and anonymized.

GRM Monitoring and Implementation

It is important to monitor GRM to ensure that the grievances are addressed and resolved. The monitoring of the GRM implementation will be undertaken on a monthly basis by the client's team.

Monitoring will include:

1. Auditing the implementation of the GRM
2. Monitoring the formal and informal consultation activities conducted with the stakeholder groups with respect to GRM
3. Tracking feedback received from engagement activities
4. Recording and tracking commitments made to communities; and
5. Assessing the efficacy of the engagement activities in terms of the desired outcomes and the participation of the stakeholder groups.

GRM Reporting

The performance of the GRM will be reviewed on a quarterly basis during the implementation period. For the purpose of review, the quarterly reports will be considered for analysis and discussion. Based on these reports, a Grievance Redressal Report will be prepared.

Other Administrative Grievance Redress Mechanism

Kenya has is place institutions a justice system that provide grievance redress on environmental and land issues (including bio-physical and socio-economic) for which PAPs and stakeholders have a right to access at their own costs and at any time even without going through the internal, external GRM described in section 10.1.1 and 10.2. These include;

Environment and Land Court

A superior court to hear and determine disputes relating to the environment and the use and occupation of, and title to, land.

Land Acquisition Tribunal (The Tribunal)

A court of law that hears disputes related to the compulsory land acquisition process and in determining such disputes, confirm, vary, or quash the decision of the NLC. Tribunal has first instance jurisdiction to hear such disputes with the Environment and Land Court (ELC) exercising appellate jurisdiction.

National Environmental Tribunal

The National Environmental Tribunal is a quasi-judicial tribunal established pursuant to the provisions of the Environmental Management and Co-ordination Act, 1999 (EMCA). Its mandate generally is to hear any disputes regarding the exercise of power by the National Environmental Management Authority (NEMA).

National Environmental Complaints Committee

The National Environmental Complaints Committee (NECC) was established under Section 31 of the Environmental Management and Co-ordination Act, 1999. It was formerly known as the Public Complaints Committee (PCC) but its name changed in the EMCA (Amendment) No. 5 of 2015). It is an important institution in the assessment of the condition of the environment in Kenya. It plays an important role in the facilitation of alternative dispute resolution mechanisms relating to environmental matters.

CHAPTER TWELVE

12

RECOMMENDATIONS

The proposed project represents a significant investment in high quality housing development in Mombasa county. Such an investment is likely to positive impact the local economy of the area during the entire project cycle as well as spur additional investment into the area as discussed in the report.

With all the benefits factored in, the experts recommends the following:

1. The proponent must ensure compliance with all relevant county, national and international regulations. These include but are not limited to the bill of rights, EMCA, devolution laws, national environment policy, physical planning act cap 286, public health act cap 242, occupational health and safety act, water act cap 372, and the penal code cap 63.

2. Minimize negative environmental impacts resulting from the establishment of the project to meet the thresholds set by the relevant guidelines like EMCA, Water Act and others. These negative impacts include , air and noise pollution, increased water demand, and strain on existing infrastructure .

3. Maximize positive impacts as much as possible, as exhaustively outlined within the report. This will ensure the best possible environmental compliance and performance standards.

4. The proponent should go green. Rainwater harvesting and sinking a borehole are two options available to supplement and augment the water from NCWSC. Adoption of green energy (solar and wind) and use of building materials with green specifications.

5. The expert should attend all site meetings and ensure that all conditions of the NEMA license are implemented.

6. Ensure that the road leading to the site is always clean, and refurbish the road after the project is completed.

7. Proponent to undertake site restoration.

8. The proponent should get edge certification for green buildings so as to benefit from economic, social and environment efficiencies as well as enjoying lower costs of operations and higher demand.

The proponent should be allowed to implement the project provided the mitigation measures outlined in the report are adhered to and the developer adheres to the conditions of approval of the project.

CHAPTER THIRTEEN

13

CONCLUSION

This project is feasible from a perspective of economic, social, financial, and environmental evaluation. The expert has made observations and recommendations that heavily weigh in favor of the project.

a. The analysis of the project's alternative options showed that the project is necessary and should be implemented as soon as possible.

b. A comprehensive Environmental,Social Management and Monitoring Plan (EMMP) has been developed for full implementation of the project with minimal damage to the environment.

c. The proposed project is considered environmentally sound. Further, the project proponent is willing to guarantee that the potential impacts, whose mitigation measures have been discussed in this report and most of which have already been incorporated in the project design, will be effectively implemented.

Given the foregoing, the expert humbly requests NEMA to approve and license the project.

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