PROPOSED RIRUTA'S URBAN OASIS HOUSING PROJECT IN RIRUTA SUBLOCATION, RIRUTA LOCATION, DAGORETTI SOUTH SUBCOUNTY OF NAIROBI COUNTY

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDY REPORT

Submitted To:
NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY – NEMA, KENYA
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Proponent:

KEZA DEVELOPMENT LLP

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CERTIFICATION

Safe Environment Consultancy Ltd submits the following Environmental Impact assessment study report for the proposed Riruta's Urban Oasis Housing project in Riruta Sublocation, Riruta location, Dagoretti South Subcounty of Nairobi county

We, certify that the information provided is accurate and truthful.

Proponent:	Keza Development LLP
Assignment:	Environmental Impact Assessment Study for the Proposed Riruta's Urban Oasis housing project
Report Title:	EIA Study report

FIRM OF EXPERTS:

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Executive summary

According to UN-Habitat, affordable housing remains elusive and is a global challenge that affects virtually all households. Housing is enshrined in our Constitution as one of the basic social and economic rights.

"The plan" which outlines president William Ruto's commitments to the people of Kenya during his term as president estimates the requirement of new housing at 250,000 units a year, against a production of 50,000 units, translating to a deficit of 200,000 units and key among president William Ruto's priorities is to increase supply of new housing to 250,000 per annum and the percentage of affordable housing supply from 2 per cent to 50 per cent.

Keza Development LLP intends to put up a 391 housing units project under the name Riruta's Urban oasis which will be marketed and sold by Mi Vida. Mi Vida is a new residential developer created through a joint venture between Actis, a leading growth markets investor who have been active in the region for over 70 years and Shapoorji Pallonji Real Estate (SPRE), the real estate arm of one of India's largest conglomerates. Mi Vida was officially launched in July 2019 to address the shortage of middle-income housing, by delivering a minimum of 3,000 middle-income housing units over the next five years.

Riruta's Urban Oasis phase 1 will consist of 2 blocks of apartments(block A & B) with a total of 391 housing units for sale to interested buyers.

The project site is located in Riruta sublocation, Riruta Location, Dagoretti South Subcounty of Nairobi County on Plot No. NAIROBI/BLOCK66/6009.The site coordinates are S1^{O} 16'50.91539" E36"43'59.43036"

The estimated cost of the project is eight hundred sixty three million, two hundred and twenty nine thousand, six hundred and thirty and fifty four cent(863,229,630.54). Construction period is estimated to take 24 months.

The EIA study is a comprehensive evaluation conducted before the approval and implementation of development activities listed in Schedule II of EMCA Cap 387 which could have adverse impacts on both the natural and social environment. The EIA is expected to predict specific project areas that are likely to affect the environment negatively and also prescribe appropriate mitigation strategies in order to alleviate or at the least to minimize the level of environmental disturbance. The EIA especially through the prescribed Environmental Management Plan (EMP) usually recommends the activities which require regular monitoring through environmental audits.

Safe Environment Consultancy Ltd, a NEMA- registered firm of experts was appointed as a consultant to conduct, Environmental Impact Assessment (EIA) study of the proposed Riruta's Urban Oasis Housing Project in Riruta location of Nairobi county. The EIA study report is expected to inform the National Environment Management Authority (NEMA) in their decision making on matters related with the issuance of NEMA EIA license to the Proponent and the Contractor as stipulated by EMCA Cap 387.

The general steps followed during the assessment included;

- Preparation of EIA study TOR's (NEMA/TOR/5/2/558) for approval by NEMA which were approved ,

- Detailed review and analysis of project documents,
- Review of policies, legislative and regulatory framework for the EIA in Kenya,
- Physical inspection of the site,
- Socioeconomic impact baseline assessment,
- Climate Change risks and vulnerability assessment,
- Stakeholder engagement and public consultations,
- Comprehensive project impact analysis,
- Impact mitigation planning,
- Environmental management planning and preparation of an EMP and
- EIA report writing.

1. Key Environmental issues and potential Impacts

a) Positive impacts

- Income to professionals,
- Employment opportunities,
- Provision of market for supply of construction materials,
- Income for small food traders,
- Increased income for businesses and
- Growth of new businesses.

b) Key potential negative impacts and recommended mitigation strategies

The key potential negative impacts and proposed mitigation measures for the proposed project are summarized below:-

POTENTIAL IMPACTS	RECOMMENDED MITIGATION MEASURES
1. Air pollution	• Provide Personal Protective Equipment (PPEs) such as nose masks to the affected workers on site during construction and decommissioning phase, • Regular and prompt maintenance of construction machinery and equipment. This will minimize generation of noxious gases and other suspended particulate matter, • Control over areas generating dust particles. Such areas should be regularly cleaned or sprinkled with water to reduce dust, • Delivery trucks transporting sand and other construction material should be covered to avoid creating dusty conditions, • All construction vehicles and equipment should be switched off when not in use and running of engine when the vehicle is not in use should be discouraged, • All personnel working on the project should be trained prior to construction on methods of minimizing dust impacts during construction.
2. Occupational health and safety risk	• Securing workers who are on high heights, • Proper training of workers on the use of the construction equipment,

	• Presence of a trained first aider and well stocked first aid box at the site at all times, • Provision and enforcement of use of PPEs e.g, helmet, overalls, boots, gloves and goggles for employees and any person visiting the construction site. • Surrounding the site with a wall.
3. Soil Contamination	• All contaminated soils shall be excavated, treated and disposed of at the designated site.
4. Noise and vibrations	• Switching off the vehicles and other construction machinery when not in use, • Construction work should not be done at night, • Regular servicing of construction machinery so as to reduce noise caused by worn out parts, • Construction vehicle should reduce speed especially when approaching Havard school, • Noise in the construction site should not go beyond the recommended limits by EMCA (Noise and excessive vibration pollution) (control) regulations, 2009) and • Providing ear mufflers to construction workers.
5. Human Waste	• Provide sanitary facilities for workers at the site in compliance with employment Act, No. 11 of 2007.
6. Sexually transmitted diseases	• Workers to be sensitized on the consequences of social ills and promiscuous behaviors (over consumption of alcohol, STDs, HIV /AIDS etc.) • Provision of condoms to the workers.
7. Loss of biodiversity	• Restrict clearing of vegetation to the areas which will be constructed, • Planting and maintaining trees in other areas to compensate for tree which will be lost and • Avoid cutting trees that are in the boundary between the project site and Havard school unless there is a consent from Havard school proprietor.

8. Hydrology and water quality degradation	• Regular servicing of construction equipment to avoid leakages of petroleum products, • Correcting any leakage immediately • Cementing storage area for oil and other fossil fuels, • Immediate cleaning of any accidental spills, • Maintenance work of construction equipment should be carried out in a designated area (protected service bays fitted with oil filters.), • Develop a spill prevention and control plan to counter and manage emergencies that may occur/arise in the event of accidental spills.
9. Solid waste generation	• Use an integrated solid waste management system through the following options: i) waste source reduction, ii) material reuse and recycling, and, iii) disposal, • Provide waste collection sites and facilities within the site, • Dispose waste appropriately through NEMA licenced waste handlers and transporters, • Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste, • Recyclable materials such as metals should be sold to scrap metal recyclers, • Reusable materials such as wood/stone/roofing tiles should be reused.
10. Soil erosion	• Limit clearing of vegetation to the areas to be developed, • Compaction of excavated soil during excavation, • Revegetation of the areas left bare.
11. Climate change risk of flooding	• Ensure adequate drainage are constructed from the site and away from Ndwaru road which should be kept clear throughout to avoid localised flooding, • Ensure that no solid waste is left lying on the Riruta's Urban Oasis compound which can be carried by storm water into the drainage systems causing blockage,

	• Invest in water harvesting infrastructure at the project site to reduce storm water.
12. Generation of E-waste	• Avoid burning of E-waste, • Separate collection point for E-Waste should be provided by the property managers and sensitization should be done on how to handle E-waste, • E-waste should be delivered to E-waste handlers e.g E-waste Initiative Kenya
13. Electrical accidents	• Only allowing trained and certified workers to install, maintain, or repair electrical equipment, • No one should approach an exposed, energized or conductive part even if properly trained unless, -The worker is properly insulated from energized part with gloves or other approved insulation; or -The energized part is properly insulated from the worker and any other conductive object; or -All electrical installations should be performed by certified personnel.

2. Proposed Environmental Management Plan (EMP)

An elaborate EMP is provided in this report for purposes of the project, and covers the entire project life cycle including the planning stage, construction, operation and decommissioning. It also includes a comprehensive environmental monitoring plan.

3. Conclusion and Recommendation

The findings of the EIA based on the disclosed project details and the baseline site assessment indicated that the project is desirable and will support the realization of national development goals as outlined in a number of national strategies such as Vision 2030. The proposed Riruta's Urban Oasis Housing project in Riruta location in Nairobi County is in line with the spirit of Article 43 of the National Constitution of Kenya on the right to accessible and adequate housing. The project is also in line with the National Housing policy's,2016 overall goal of provision of adequate shelter and a healthy living environment at an affordable cost to all socio-economic groups in Kenya in order to foster sustainable human settlements. The proposed project will also contribute towards the realization of the goal of Kenya Vision 2030 of achieving affordable housing for all by 2030. At international level, Riruta's Urban Oasis Housing project will significantly contribute towards the realization of the UN-SDG-11 on making cities and human settlements inclusive, safe, resilient and sustainable by 2030.

The EIA process has established that the project will generate employment opportunities for both skilled and semi-skilled workers resulting directly from the construction and maintenance

of the Housing project. The project will also generate indirect employment opportunities for people who will be supplying construction materials to the site. The operation phase of the Project will significantly bridge the housing deficit in the country.

The project will not have high significant adverse environment impacts because the project will adopt proper mitigation measures which have been identified by the EIA consultant in order to avoid negative impacts of the project.

This Project is feasible from a social economic and financial evaluation perspective . The analysis of the project alternative options showed that the project is indispensable. Therefore, the project is necessary, and should be implemented. A comprehensive Environmental Management Plan (EMP) and Environmental Monitoring strategy has been developed which the proponent will implement to ensure minimal damage to the environment. We therefore, recommend approval of the project by NEMA because it:- a) is well within the spirit of the National Constitution, b) will support in the implementation of the National Housing Policy (2016).

In view of the findings of the EIA, the proposed project is considered as environmentally sound. Further, the project proponent is willing to guarantee that the potential adverse impacts whose means of mitigation have been disclosed in this report will be effectively implemented. On the basis of these findings, it is recommended that the proposed Riruta's Urban Oasis Housing project be approved based on the willingness by the proponent to implement the proposed project in strict adherence to the Environmental Management Plan (EMP) and Environmental Monitoring Plan. Further, NEMA should issue the proponent with an EIA license as required by Kenya's environmental laws.

Acronyms

ADHD	-	Attention deficit/hyperactivity disorder
AIDS	-	Acquired Immunodeficiency Syndrome
Cap	-	Chapter
CFCs	-	Chlorofluorocarbons
COPD	-	Chronic obstructive pulmonary disease
db	-	Decibels
EIA	-	Environmental Impact assessment
EMCA	-	Environmental Management and Coordination Act
EMP	-	Environmental Management Plan
FBO	-	Faith-based organizations
GCM	-	Global Climate Modelling
GoK	-	Government of Kenya
GoK	-	Government of Kenya
HFCs	-	Hydro fluorocarbons
HIV	-	Human immunodeficiency virus
HIV/AIDS syndrome	-	Human immunodeficiency virus/acquired immunodeficiency
IPCC	-	Intergovernmental Panel on Climate Change
MDA	-	Ministries, departments and agencies
MoE&F	-	Ministry of Environment and Forestry
MoH	-	Ministry of Health
MoWS&I	-	Ministry of Water and Irrigation
NCCRS	-	National Climate Change Response Strategy
NEAP	-	The National Environmental Action Plan
NEAP	-	National Environment Action Plan
NEMA	-	National Environment Management Authority
NHC	-	National Housing Corporation

PAHs	-	Polycyclic aromatic hydrocarbons
PM	-	Particulate matter
PPEs	-	Personal Protective Equipment
SDG	-	Sustainable Development goal
SEP	-	Stakeholders engagement plan
SPRE	-	Shapoorji Pallonji Real Estate
SR	-	Study Report
STDs	-	Sexually transmitted diseases
TOR	-	Terms of reference
TORs	-	Terms of reference
UN	-	United Nations
WHO	-	World Health Organization
WIBA	-	Work Injuries Benefits Act

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1: INTRODUCTION

1.1: Background

Keza development LLP intends to put up a 391 housing units project under the name Riruta's Urban Oasis which will be marketed and sold by Mi Vida. Mi Vida is a new residential developer created through a joint venture between Actis, a leading growth markets investor who have been active in the region for over 70 years and Shapoorji Pallonji Real Estate (SPRE), the real estate arm of one of India's largest conglomerates. Mi Vida was officially launched in July 2019 to address the shortage of middle-income housing, by delivering a minimum of 3,000 middle-income housing units over the next five years.

Riruta's Urban Oasis phase 1 will consist of 2 blocks of apartments (block A & B) with a total of 391 housing units for sale to interested buyers.

1.1.1: Project objective

The main objective of the project is to offer affordable and quality housing for middle lower income Kenyans.

1.1.2: Justification of the project.

According to UN-Habitat, affordable housing remains elusive and is a global challenge that affects virtually all households. Housing is enshrined in our Constitution as one of the basic social and economic rights.

"The plan" which outlines president William Ruto's commitments to the people of Kenya during his term as president estimates the requirement of new housing at 250,000 units a year, against a production of 50,000 units, translating to a deficit of 200,000 units and key among president William Ruto's priorities is to increase supply of new housing to 250,000 per annum and the percentage of affordable housing supply from 2 per cent to 50 per cent.

Mi Vida intends to build 391 housing units in Riruta in Nairobi County which will work towards reducing housing deficit in line with "Plan" housing commitment.

1.2: Principles, Objectives and Criteria of preparation of EIA Study report for Riruta's Urban Oasis Project

1.2.1: Principle of EIA

The main principles of EIA are:

i. Environmental concerns must be accounted for in all development activities,
ii. Public participation in the development of projects, policies, plans and programmes is important,
iii. Recognition of social and cultural principles traditionally used in the management of the environment and natural resources,
iv. International cooperation in the use and wise management of shared resources,
v. Intra-generational and inter-generational equity,
vi. Polluter-pays principle and
vii. The precautionary principle

1.2.2: EIA Terms of reference

The EIA study is a comprehensive evaluation conducted before the approval and implementation of development activities listed in Schedule II of EMCA Cap 387 which could have adverse impacts on both the natural and social environment. The EIA is expected to predict specific project areas that are likely to affect the environment negatively and also prescribe appropriate mitigation strategies in order to alleviate or at the least to minimize the

level of environmental disturbance. The EIA especially through the prescribed Environmental Management Plan (EMP) usually recommends the activities which require regular monitoring through environmental audits.

Safe Environment Consultancy Ltd, a NEMA- registered firm of experts was appointed as a consultant to conduct Environmental Impact Assessment (EIA) of the proposed Riruta's Urban Oasis Housing Project in Riruta location of Nairobi county. The EIA study report is expected to inform the National Environment Management Authority (NEMA) in their decision making on matters related with the issuance of a NEMA EIA license to the Proponent and Contractor as stipulated by EMCA Cap 387.

1.2.3: Objectives

The overall objective of EIA is to ensure that environmental concerns are integrated in all development activities in order to contribute to sustainable development.

The specific objectives are:

i. To identify potential environmental impacts of the proposed projects;
ii. To assess the significance of these impacts;
iii. To assess the relative importance of the impacts of alternative plans, designs and sites;
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 present results of the EIA in such a way that they can guide informed decision making.

1.2.4: Scope of the EIA

The scope of this EIA report covered the Project and associated works. For the purpose of assessing whether the project shall comply with the criteria of the set standards and regulations, the EIA study has addressed the key issues described below:

- Waste management,
- Noise and excessive vibration,
- Adjacent land use planning and compatibility,
- Occupational Health, safety and security,
- Storm water management,
- Effects of increased traffic,
- Socio-economic impacts,
- Ecological impacts including impacts on biodiversity,
- Environmental emergencies e.g oil spills,
- Levels of sanitation, water supply and water pollution,
- Fire hazards,
- Air quality and air pollution (local air quality) and
- General effects on the landscape and natural environment.

2.0: Approach and Methodology

The key steps which were followed in the EIA Study process are highlighted below:

2.1: Detailed review and analysis of project documents

This involved a detailed review and analysis of the project documents prepared by the proponent such as the project designs, bill of quantities and ownership documents .

2.2: Review of policies, legislative and regulatory framework for EIA in Kenya

This involved review and analysis of all environmental policies, laws, regulations and standards that are relevant to Riruta's Urban Oasis project, and in particular those that are concerned with environmental quality, workers and community health and safety and land use planning.

2.3: Collection of the Baseline data

The Consultant collected baseline information/data on the environmental, occupational health and safety, security and socio-economic characteristics of the project site, its surrounding and the county of Nairobi in general. This was collected through field visit and review of literature relevant to the project and project site. The data collected was used to describe the following aspects: -

a) Physical Environment,
b) Biological environment,
c) Occupational health and safety and
d) Security

2.4: Climate Change risks and vulnerability assessment

The climate change risk assessment was carried out from the following two dimensions; climate change risk affecting the project components and climate change risk exacerbated by the project components.

Climate Change risks and vulnerability assessment relied heavily on the following legal, regulatory, standards and instruments;

- Climate Change Act, 2016,
- United Nations Framework Convention on Climate change,
- National Climate Change Framework Policy, 2016 and
- National Climate Change Response Strategy, 2010

2.4.1: Defining geographical scope and project scope of climate change risk assessment

Data on specific activities and aspects of the project assessed for climate risk was obtained from the proposed project designs and field work survey. The process identified areas of the designs and geographical coverage which could reasonably be affected by extreme climate change or which could also exacerbate impacts of climate change. This was used in defining responsibility of monitoring climate change impacts of the project.

2.4.2: Collection of climate data, identification of climate stressors and scenarios

Historical baseline data on climate, climate stressors, climate scenarios and climate projections in the past 10 years was obtained from the following sources among other relevant sources;

- Coupled Model Inter-comparison Projects (CMIPs), overseen by the World Climate Research Program.
- Department of meteorological Department of Kenya
- Kenya National Adaptation Plan, 2015-2030

2.4.3: Climate change impacts assessment

The following steps were followed in identifying climate change impacts;

Step 1: The consultant identified and characterized the climate change impacts expected in the selected scenario. Identification of climate change impacts related to the project was done through expert judgement based on historical baseline data collected in Kenya on climate change impacts for similar scenarios in the past 10 years.

Step 2: The consultant identified the assets and components of the project and livelihoods which will be vulnerable to climate change impacts . This was done through review of relevant literature and site visit.

Step 3: The probability levels of occurrence of climate change impacts was obtained from the weather projections from "Coupled Model Inter-comparison Projects (CMIPs), overseen by the World Climate Research Program".

Step 4: Expected effects of impacts on the components of the project, livelihoods was obtained from similar scenarios in the country.

2.4.4: Development of risk matrix

The consultant prepared a risk matrix, which assigned each potential impact identified with a risk rating according to how likely it is to happen and what the consequences (severity) would be if it did happen.

2.4.5: Preparation for adaptation planning

After risks and vulnerabilities were clearly identified and prioritized, the consultant reviewed the adaptability measures that are in place for climate change risks identified in the areas of vulnerability in the project designs and in the geographical areas surrounding the site in order to identify the gaps. The consultant prepared adaptability measures for the identified risks with responsibility for implementation.

2.5: Stakeholder engagement and public consultations

The Consultant undertook a stakeholder analysis to identify persons/groups that may be affected by the project.

A reconnaissance mission was undertaken in the project area on 17th March 2023 during which preliminary stakeholder mapping was undertaken. The mapping identified the following stakeholder profiles for the project. Table 1 provides a preliminary list of stakeholders for Riruta's Urban Oasis project as identified during reconnaissance mission.

Table 1: Stakeholders characteristics of Keza Riruta Oasis Housing

Stakeholder	Characteristic of the stakeholder	Level of impact	
		Directly Affected	Indirectly Affected
Business Community at Ndwaru road	Located within the project site		
Religious institutions	Located within the project site		
Learning institutions	Located within the project site		
Residential buildings	As above		

2.6: Impact assessment, analysis and development of Environmental and social Management and monitoring plan

The impact assessment was undertaken in terms of a) impact significance b) magnitude c) status d) footprint, e) duration and f) probability of the predicted change using a prescribed list of environmental indicators as was identified during site inspection.

An Environmental and social management plan was developed with details and actions required to effectively implement the mitigation measures identified and recommended in the EIA. The EMP identified management actions that need to be implemented in planning, construction phase**,** operation and decommissioning phase.

3.0: Environmental and social regulatory and institutional framework

The sustainable implementation of Riruta's Urban Oasis Housing project will heavily depend on dedicated compliance with the obligations in existing policies, legal frameworks and strategies at the interface between the housing sector and the environment. This will require substantial collaboration amongst the various institutions in-charge of the interacting sectors. The Government of Kenya has put in place a wide range of policy and legal frameworks to avoid, minimize or mitigate the negative environmental and social challenges which are likely to originate from development projects. The policies and legal frameworks governing environmental protection and conservation in Kenya are derived from relevant obligations in national and international frameworks which the Republic of Kenya has ratified. The most supreme instrument is the National Constitution (2010) which in Article 42 ensures the right to a clean and healthy environment for all Kenyans. Article 70 on enforcement of environmental rights empowers citizens to ensure the prevention of acts that are harmful to the environment.

The National Environment Policy (2014) and the Environmental Management and Co-ordination Act 1999 (Amendment 2015), Cap 387 and its subsidiary regulations will regulate the project in order to ensure the overall goal of environmental sustainability in all the phases of the project. Keza Development LLP will be expected to comply with all the other relevant environmental and social obligations in sectoral policies and legal frameworks which are relevant to the project. This section highlights the various governance instruments to be used in the implementation of the Riruta's Urban Oasis project including the institutional frameworks.

(a) Relevant National Policies

Box 1: List of policies

i. The Constitution of Kenya
i. Environment and Development Policy (Sessional Paper No.6 of 1999)
i. Sessional Paper No. 10 of 2014 on the National Environment Policy
v. National Housing policy for Kenya Session Paper No. 3, 2016
v. National Policy for Disaster Management, 2009
i. National Policy on Occupational Safety and Health, 2012
i. National HIV and AIDS Policy, 2009
i. National Gender and Development Policy, 2000 (GoK, 2000)
x. Sessional Paper No. 10 of 2012 on Kenya Vision 2030
x. National Land use Policy (2009)
i. National Environmental Sanitation and Hygiene Policy (2007)
i. Sessional Paper No. 3 of 2016 on National Climate Change Framework Policy
i. Policy for the prevention of HIV infections among key populations in Kenya (2016)
v. National policy on peace building and conflict management

(b) Relevant legal frameworks and subsidiary regulations

Box 2: List of environmental legal frameworks and subsidiary regulations

i. Environmental Management and Coordination Act (EMCA) No. 8 of 1999, Revision 2015
ii. Environmental (impact assessment and audit) regulations, 2003 (Legal Notice 101)
iii. Environmental Management and Coordination (Noise and Excessive vibration pollution Control) Regulations (Legal Notice No. 61), 2009

v. Environmental Management and Coordination (Air Quality) Regulations, 2014)
v. Environmental Management and Coordination (Waste management regulations 2006)
vi. Environmental Management and Coordination (Water quality) Regulations, 2006 (Legal Notice 121)
vii. Environmental Management and Coordination (Controlled Substances), 2007
iii. Water Act, 2016
x. Occupational Safety and Health Act. 2007
x. Public Health Act, Cap 242 (GoK, 1986)
xi. Employment Act, No. 11 of 2007
xii. Work Injuries Benefits Act (WIBA), No. 13 of 2007
iii. HIV and AIDS Prevention and Control Act No. 14 of 2016
v. The Land Act, 2012
v. National Construction Authority Act
vi. Planning and Building regulations,2009
vii. County Government of Nairobi By laws

(c) National Strategic Plans

Box 3: List of national strategies and action plans

i. Kenya Vision 2030
ii. National Water Master Plan 2030
iii. National Biodiversity Strategy and Action Plan (NBSAP), 2021-2030
v. National Climate Change Response Strategy (NCCRS) 2010
v. National Environment Action Plan (NEAP) 2009-2013

(d) NEMA Guidelines

Box 4: NEMA Guidelines

i. National Guidelines on sand harvesting
ii. E-waste guideline Draft
iii. Asbestos guidelines
iv. EIA EA Guidelines

The role of the above instruments in the Riruta's Urban Oasis Housing project are highlighted below as follows:
Table 2: National policies
Table 3: Legal frameworks
Table 4: National strategic plans

Table 2: National policies and institutional framework

Policy	Relevance and application to Riruta's Urban Oasis Housing project	Coordinating agents
1. Environment and Development Policy (Sessional Paper No.6 of 1999)	The Policy aims to provide a framework for an integrated approach to sustainable management of Kenya's environment and natural resources and specifically integrate environmental management with economic growth, poverty reduction and improving livelihoods.	NEMA
2. National Housing policy for Kenya Session Paper No. 3, 2016	It requires developers to set procedures for safe development of hillsides and they should also ensure Environmental Impact Assessment has been applied on sources of building materials, such as quarries inorder to check against negative impacts on the environment.	NHC
3. Sessional Paper No. 10 of 2014 on the National Environment Policy	Advocates for environmental protection by ensuring the undertaking of EIA for all private and public projects with a potential for adverse impacts.	MoE&F
4. Sessional Paper No.1 of 1999 on National Policy on Water Resources Management and Development	Emphasizes the importance of engaging WRUAs in water abstraction and sharing activities. It prescribes the undertaking of EIA in water-related development activities.	MoWS&I
5. Sessional Paper No. 3 of 2016 on National Climate Change Framework Policy	The policy aims to enhance adaptive capacity and build resilience to climate variability and change, while promoting low carbon development pathways.	MoE&F
6. National Environmental Sanitation and Hygiene Policy (2007)	s4.3 of the policy advocates for the protection of the environment from pollution and its negative effect on human health.	MoH
7. National Land use policy 2017	The overall goal of the national land use policy is to provide legal, administrative, institutional and technological framework for optimal utilization and productivity of land related resources in a sustainable and desirable manner at national, county and community levels.	Ministry of Land and Physical planning
8. National Policy for Disaster Management, 2009	The policy provides for an integrated and coordinated Disaster Risk Management that focuses on preventing or reducing the risk of disasters, mitigating their severity, improves preparedness, rapid and effective response to disasters and post-disaster recovery.	Ministry of special programs
9. Policy for the prevention of HIV infections among key populations in Kenya (2016)	The Policy provides a broad framework within which all stakeholders, including Government ministries, departments and agencies (MDA), civil society organizations (CSO), faith-based organizations (FBO) and development partners should work collaboratively towards the	MoH

	reduction of HIV infections among the key populations.	
10. National Policy on Occupational Safety and Health, 2012	The policy mainly seeks to address various challenges related to occupational safety and health in the country, provide guidelines for key legal and institutional reforms and a framework for mainstreaming occupational safety and health at workplaces.	Directorate of Occupational Safety & Health Services
11. National policy on Gender and Development Sessional Paper No. 02 of 2019	The goal of the policy is to create a just, fair and transformed society free from gender-based discrimination in all spheres of life practice.	Ministry of Public Service, Youth and Gender
12. National policy on peace building and conflict management	The aim of the policy is to guide the works and operations of stakeholders in peace building and conflict management. It refocuses peace building and conflict management efforts and practices towards measures that increase the potential for peaceful coexistence and human security as precursors for sustainable development, and a just and peaceful society.	County Commissioner

Table 3: Legal and institutional framework

Legal framework	Relevance and application in Housing project	Enforcement Authority
1. Environmental Management and Coordination Act (EMCA 1999, rev 2015), CAP 387)	The Act serves as the umbrella environment law which applies in all sectors including housing. The law requires the undertaking of EIA for all proposed projects with a potential for adverse impacts in accordance with the classification in Schedule II of the Act. The high-risk projects are expected to submit an EIA Study Report (SR) to NEMA head office in Nairobi. Finally, project proponents are expected to undertake regular environmental audit and monitoring every 5 years for low-risk projects, every 3 years for medium risk projects and every 12 months for high-risk projects.	NEMA
2. Environmental Management and Coordination (Integrated impact assessment and audit) Regulations, 2003 (Revision 2018)	This regulates the undertaking of EIA and EAs in Kenya for subjectable projects related to Part IV, Part V and the Second Schedule of the Environmental Management and Coordination Act (EMCA Cap 387).	NEMA
3. Environmental Management and Coordination (Water quality) Regulations, 2006 (Legal Notice 121)	The regulations apply to water use in all sectors with a key objective of prohibiting discharge of effluent into the environment contrary to the established standards. The regulations further provides guidelines and standards for the discharge of poisons, toxins, noxious, radioactive waste or other pollutants into the environment in line with the third Schedule of the regulations of EMCA Cap 387.	NEMA

4. Environmental Management and Coordination (Waste management) Regulations, 2006	The regulations apply to management of all categories of wastes including housing and domestic related waste.	NEMA
5. Environmental Management and Coordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations (2009)	The regulations provide for the conservation and sustainable use of wetlands and riparian zones which are considered as government land (30 metres measured from the high water mark on both sides of any wetland and is to be left in its natural state) in both private or public land and their resources in Kenya.	NEMA
6. The Environmental Management and Coordination (Air Quality)) Regulations (2006)	The objectives of these Regulations are to provide for prevention, control and abatement of air pollution to ensure clean and healthy ambient air. The general prohibitions state that no person shall cause the emission of air pollutants listed under Second Schedule (Priority air pollutants) to exceed the ambient air quality levels as required and stipulated under the provisions of the Third Schedule (Emission limits for controlled and non-controlled facilities) and First Schedule (Ambient air quality tolerance limits).	NEMA
7. Water Act, No. 43 of 2016	Part IV: Addresses the issues of water supply including regulation of rights, conservation and proper use of water resources. This includes the allocation of water abstraction and borehole drilling permits.	WRA
8. National Construction Authority Regulations, 2014	The regulation requires all construction works, contracts or projects either in the public or private sector to be registered in accordance with National Construction Authority. It also requires that no person should carry out any business of a contractor unless the person is registered by the Board under this Act.	NCA
9. Public Health Act, Cap 242, 1986	The Act makes provisions for securing and maintaining good standards of public health and lays down rules relative to, among other things protection of public water supplies, the prevention and destruction of mosquitos and the abatement of nuisances including nuisances arising from sewerage.	County Government of Nairobi
10. Work Injuries Benefits Act (WIBA), No. 13 of 2007	This act provides for compensation for employees on work related injuries and diseases contacted in the course of employment and for connected purposes. The act includes compulsory insurance for employees. The act defines an employee as any worker on contract of service with the employer.	Directorate of Occupational Safety & Health Services
11. The Physical and land use Planning Act 12 of 2019	The Act requires the county governments to prepare land use and physical development plans which should be adhered to by all the developers. The objectives of the plans among others is to guide the use and management of natural resources and to enhance environmental protection and conservation, prohibit or control the use and development of land and buildings in the interests of proper and orderly development of its area.	County Director of Physical and Land Use Planning

12. Health Act of 2017	The Act mandates the national health system to ensure that measures for managing environmental risk factors to curtail occurrence and distribution of diseases are put in place and implemented. In particular such measures shall target— (a) the reduction of disease burden arising from poor environmental hygiene, sanitation, occupational exposure and environmental pollution; (b) the reduction of morbidity and mortality of waterborne, foodborne and vector transmitted diseases, and mitigate the health effects of climate change.	MoH
13. Occupational Health and Safety Act of 2007	The Act sets out the responsibilities of each stakeholder. Specifically, the occupier is required to provide safe and healthy working environments, set up and maintain safety management systems, register with and annually renew registration of the workplace with the Directorate of Occupational Safety and Health Services, and provide all the necessary information including occupational diseases and ill health to the Director for furtherance of research and maintenance of databases to ensure workplace operate within the law as far as safety and health are concerned. This Act applies to all workplaces where any person is at work, whether temporarily or permanently. The purpose of this Act is to: a) Secure the safety, health and welfare of persons at work; and b) Protect persons other than persons at work against risks to safety and health arising out of, or in connection with, the activities of persons at work	Directorate of Occupational Safety & Health Services
14. Climate Change Act No. 11 of 2016	An Act of parliament to provide for a regulatory framework for enhanced response to climate change; to provide for mechanisms and measures to achieve low carbon climate development and for connected purposes.	National Climate change council
15. H I V and A I D S prevention and control Act No. 14 of 2006	The object and purpose of this Act is to— (a) promote public awareness about the causes, modes of transmission, consequences, means of prevention and control of HIV and AIDS; (b) extend to every person suspected or known to be infected with HIV and AIDS full protection of his human rights and civil liberties by:- (i) prohibiting compulsory HIV testing save as provided in this Act; (ii) guaranteeing the right to privacy of the individual; (iii) outlawing discrimination in all its forms and subtleties against persons with or persons perceived or suspected of having HIV and AIDS; (iv) ensuring the provision of basic healthcare and social services for persons infected with HIV and AIDS; (c) promote utmost safety and universal precautions in practices and procedures that carry the risk of HIV transmission; and	National Aids Control Council

	(d) positively address and seek to eradicate conditions that aggravate the spread of HIV infection.	
16. Employment Act, No. 11 of 2007	This act looks at the welfare of the employees including the provision of safe and clean working environments and sanitary facilities.	Ministry of labour
17. County laws, rules and nuisances	County governments through county assemblies are responsible for the formulation of various environmental and natural resources related by-laws which apply to various sectors including Housing sectors. The following laws are enforced by the county government of Nairobi; • The county government of Nairobi requires you to get a permit before cutting down of a tree or trees. • Every building should be painted at least once every year • A building owner should ensure installation of security lights in the front of the building	County Government of Nairobi

Table 4: National strategies and institutional framework

Policy	Relevance and application in housing project	Coordinating agency
1. Kenya Vision 2030	s4.6 provides the vision for the environment which includes ensuring clean and healthy environment and reducing pollution and waste related hazards	Vision 2030 Delivery Secretariat
2. National Water Master Plan 2030	s6.2 provides the national water allocation priorities as follows:- 1st Priority - Water reserve (apportionment) for ecological functions and basic human needs 2nd Priority - Existing domestic, industrial, irrigation and hydropower demand and existing inter-basin transfers 3rd Priority - New domestic and industrial water demands 4th Priority - New livestock, wildlife and inland fishery water demands 5th Priority - New irrigation water demands	MoWS&I
3. National Biodiversity Strategy and Action Plan (NBSAP), 2021-2030	The vision of the NBSAP is to reduce biodiversity loss, promote the value of biodiversity and improve community livelihoods. Strategic target 12 is on identification, control and eradication of invasive alien species introduction pathways to prevent infestations	MoEF
4. National Climate Change Response Strategy (NCCRS), 2010	The strategy aims at addressing the challenges posed by climate variability and change in all sectors including Housing sector	MoEF

4.0 PROJECT DESCRIPTION

4.1 Design of the project

Phase 1 of Riruta's Urban Oasis housing project will consist of 2 blocks of apartments(block A & B) with a total of 391 housing units.

4.1.1: Block A

Block A will consist of a total of 12 levels, 3 levels of parking and 9 levels of houses totaling to 135 housing units in block A. Each level will have a total of 15 housing units as shown on table 5 below.

Table 5: No. of housing units in Block A

Unit type	Floor size	Number of units per floor	Number of floors	Total number of units in block A
2 Bedroom units	61SQM	2	9	18
1 Bedroom units	40SQM	9	9	81
Studios type 1	24SQM	2	9	18
Studios type 2	20SQM	2	9	18
Total number of houses in Block A				**135**

4.1.2: Block B

Block B will consist of 1 level of parking on ground floor and 8 levels of 32 housing units per level totalling to 256 units as shown on table 6 below.

Table 6: No. of housing units in block B

Unit type	Floor size	Number of units per floor	Number of floors	Total number of units in block A
2 Bedroom units	61SQM	6	8	48
1 Bedroom units	40SQM	14	8	112
Studios type 1	24SQM	8	8	64
Studios type 2	20SQM	4	8	32
Total number of houses in Block A				**256**

4.2: Cost of the project

The estimated cost of the project is eight hundred sixty-three million , two hundred and twenty nine thousand, six hundred and thirty and fifty four cent(863,229,630.54).

4.3: Project Activities.

The activities related to the project planning, implementing, operation and decommissioning are as follows:-

4.4: Pre-construction Phase

The most crucial step of the project was to identify suitable land for the project requirements and acquiring it for the purpose of the project. The parcel of land title number Nairobi/Block/66/6009 in Riruta location which initially belonging to Kanare Ltd was identified and acquired by Keza Development LLP.

The proponent choose professional consultants for the project such as architects, engineers, environmental consultants, structural engineers, quantity surveyors, legal advisors among others . The output of the project consultants were project designs, budgets, schedules, and labor projections. They also identify potential risks and develop solutions to ensure optimal use of resources. Other activities involved in this phase includes setting up of project site offices and employment of support staff such as security.

4.5: Construction phase

The construction work will involve ground clearing, excavation, laying of foundation and installation of all the structures. The construction phase s is expected to take 24 months.

4.5.1: Site preparation

4.5.1.1 Ground clearing

Removal of a section of the vegetation on the area of the proposed site will be done. The proposed site is covered with, grass, trees, shrubs and other undergrowth in between the trees which will be cleared to pave way for the structures to be constructed or installed.

Plate 1: Section of vegetation which will be cleared

4.5.1.2: Excavation

This will involve digging and removal of the earth on the areas where the foundations of the buildings will be constructed, pavements, parking, perimeter wall and a park area. There will be removal of a large area of the top soil before the actual stripping for the foundations. There will also be stripping for laying down the foundations of the perimeter wall that will be used to fence the site.

4.5.2: Construction of structures

Construction activities will involve laying of foundation, framing , masonry work, electrical and plumbing, roofing, exterior and interior finishing, woodworks and fixture fitting, painting and

pavement installations.

4.5.2.1: Foundation laying

A concrete foundation will be laid on the excavated area for building structures supported by steel beams.

4.5.2.2:Masonry work

Once laying of foundation and framing is complete, masonry work will begin .
The masons will bind the bricks using cement mortar, leaving space for the windows, and doorways.

4.52.3: Electrical and Plumbing Work

At this point the initial installing of pipes and wires under the floors, ceilings, and walls will be done to enable drywall, insulation, and ceiling installation. The point and pipe ends will be left out and finished later with plumbing fixtures and electrical fittings work. The buildings will be connected to Nairobi City County Sewerage system.

4.5.2.4:Roofing

Once the basic structure is done, roofing support beams will be installed and then the roof will be fixed. Roofing at this level will protects the interior from the weather elements, preventing damage and disruptions.

4.5.2.5: Interior and exterior finishing

Exterior finishing will involve plastering the external and internal parts of the building to give it a smooth look, fixing of tile and terrazzo, ceiling and the final electrical work of installing electrical fixtures.

4.4.2.6: Woodwork and fixture fittings

At this time the plumbing fittings in the kitchen and bathrooms will be fixed. Toilets, sinks, shower heads, cabinets, windows, doors, staircase railings, doors and windows handles/locks will be fitted too.

4.5.2.7:Paint work

At this point the house will be painted and the process will start by smoothing the surfaces, sealing, putting the undercoat and finally the finishing coat.

4.5.2.8: Pavement

Pavement will be laid for the parking area and the drainages will also be constructed.

4.5.3: Other non-construction activities

The other non-construction activities that will take place during the construction phase is repair and maintenance of construction machineries, eating of food and drinking, cleaning activities of construction equipment.

4.5.4: Construction materials and resulting waste

This section examines the materials to be used in the construction of Riruta's Urban Oasis project in Riruta Location of Nairobi County . It involves a systematic analysis of the materials that will be used, their products or by products including wastes generated. Table 7 shows the materials that will be used and the waste which will be generated.

Table 7: Material used during construction and waste generated

Construction Activity	Material & Equipment used	Output	By product	Waste Generated
Cutting grass, vines and small shrubs	Slasher	Clear ground ready for marking	None	Grass, leaves, vines
Logging	Power saw	Clear ground ready for marking	Noise	Logs, tree branches, twigs, tree stumps
	Power saw lubrication oil	Clear ground ready for marking	Oil spills, noise	Empty lubrication containers
Excavation	Excavation machine	Open trenches ready for laying of foundation	Dust, noise	Heaps of soil
Foundation laying	Sand	Concrete	Sand dust	Dried small pieces of concrete
	Ballast	Concrete	Ballast dust	Pieces of ballast
	Steel beams	Concrete	None	Steel beam off cuts
	Cement	Concrete	Cement dust	Hard small pieces of concrete
	Water	Concrete	None	Hard small pieces of concrete
	Vibrator	Compressed concrete	Noise, particulate matter	Hard small pieces of concrete
	Concrete mixer	Concrete	Noise, particulate matter	Hard small pieces of concrete
Plumbing	Pipes, manholes, adhesive glues	Plumbing system	-	Pipe off cuts
Electrical work	Cables, Light holders, switches, sockets	Electrical systems	-	Cables off cuts
Roofing	Steel beams, poly carbonated roofing material	Roof	-	Pieces of steel beams, offcuts from poly carbonated roofing materials

Exterior and interior finishings	Cement Marble, glass, ceramic tiles, toilets, basins, sinks, taps, doors, and window, handles, steel, adhesives	Partial finishings	Cement dust	Pieces of broken ceramic tiles and chip, loose marble and glass chips, diesel offcuts, packaging materials(paper, plastic, metal)
Woodwork and fixture fittings	Wood and wood products such as block boards, screws, adhesives	Kitchen and bedroom cabinets	-	Wood offcuts, packaging materials
Paint work	Paint, sandpaper, turpentine	Painted building	Volatile Organic compounds(VOC'S)	Metal, plastic and paper packaging materials, pieces of used sand paper
Paving	Marble, cabro slabs, Compressing machine	Paved compound	-	Broken pieces of cabro slabs
Repair and maintenance of construction equipment	Oil, fossil fuels, spare parts such as tyres and metal parts, water for cleaning construction equipment	Operational construction equipment	-	Packaging materials, worn out spare parts, waste water
Consumption of food	Food and drinks packaging	Nourished workers	-	Food packaging materials

4.6: Operation phase

The average household size in Kenya was 3.9 members according to the last census done in the country in 2019. Nairobi City was the county with the smallest households size of an average of 2.9 people. The size of households in Kenya was forecast at 4.32 members in 2021, expected to decrease to 4.25 members in 2025 . Assuming that the 391 housing units will have an average of 4.25 members then the total number of people in Keza Houses on full occupation will be 1,661.75. During this phase the owners of the house or their tenants will move in their houses with their furniture, clothing, electrical appliances, kitchen utensils, food stuffs, pets among other household items and occupy the houses. The following activities will take place during the operation phase;

4.6.1: Cooking
Cooking will involve acquiring the ingredients and preparing them either by sorting, cutting into the required sizes and washing before subjecting it to a source of heat. The cooking inputs that will be in play will include but not limited to cooking oil or fat, vegetables, dry food stuffs ,dairy products spices, seasonings, heat, meat among others.

4.6.2: Refrigeration
A survey conducted and published by Alexander Kunste on "Household appliances ownership in Kenya 2022"between 07 April 2022 to 15 June 2022 with a respondent of 1,047 showed that 67% of the respondents' own fridges. Fridges are used to preserve foods and they will be brought in by the occupiers of the house.

4.6.3: Cleaning activities
Cleaning is a dominant activity in households mainly through showering, washing of clothing , cleaning of dishes and cleaning of surfaces. Cleaning activities mainly consumes water and detergents.

4.6.4: Medication and treatment
Most of the patients on visiting the hospitals for outpatient and inpatient treatment receive medication to take at home. Some of the patients with wounds are dressed in the hospital and remove them at home. The medication is in the form of capsules, tablets, syrups, inhalers and insulin injections. Other patients self-medicate themselves using medicine bought across the counters.

4.6.5: Work and entertainment
Digital appliances such as computers, printers, television, among others will be used. On certain occasions the occupiers of the house will hold informal parties and various gatherings with family and friends. These activities will involve consumption of food, alcoholic and non-alcoholic beverages. Table 8 shows the activities which will take place in the houses during the operation phase and the resulting waste;

Table 8: Activities and resulting waste during the operation phase

Operation Activity	Material & Equipment used	Output	By product	Waste Generated
Cooking and consumption of food	Cooking oil or fat, vegetables ,dry food stuffs, dairy products spices, seasonings, heat, meat, Kerosene fuel, charcoal	Food	Carbon dioxide	Food packaging materials, used cooking oil, vegetable remains, food remains, broken cutlery, human liquid and solid waste.
Refrigeration	Refrigerator	Preserved food	chlorofluorocarbons (CFCs),Hydro fluorocarbons(HFCs)	E-waste

Cleaning and grooming activities	Detergent, soaps, water, bleaches, fabric , softeners, body oils, lotions, shaving creams, deodorants, toothpastes, shoe polish, nail polish, synthetic hair extensions, diapers	Well-groomed persons and clean and tidy houses	-	Waste water, packaging materials, used diapers, used sanitary pads, broken wooden furniture, worn-out clothes, broken toys and plastic furniture
Medication and treatment	Tablets, inhalers, capsules, syrups, syringes, gauzes, bandages	Treated persons	-	Medical waste such as used syringes, medicine packaging such as empty inhalers, blister packs, syrup bottles, envelopes and unused medicine.
Working and entertainment	Computers, printers, phones, television, play stations, alcoholic and non-alcoholic drinks	Entertainment and work	Noise	E-waste

4.7: Decommissioning phase

Once the construction work is complete, decommissioning of the contractor's campsite will take place. Decommissioning of the sales office will also take place once all the houses are fully sold. Decommissioning of Riruta's urban Oasis houses may become necessary due to unavoidable reason. It would technically involve removal of the occupiers of the houses and their belongings and all other installations and fixtures of the building and demolition of the building, and removal of the pavements. This would result in generation of wood, rubble, aggregate, ceramic, steel, broken plastic pipes, manhole covers, roofing materials among others.

4.8: Alternative

The consideration of alternatives is one of the more proactive sides of environmental impact assessment – enhancing the project design through examining options instead of only focusing on the more defensive task of reducing adverse impacts of a single design. This calls for the comparison of feasible alternatives for the proposed project site, technology, and/or operational alternatives. Alternatives have been compared in terms of their potential environmental impacts, capital and recurrent costs, suitability under local conditions, and acceptability by neighbouring land users.

4.8.1: No Project Option

Without the project, the status quo remains. This means that the proponent will not develop the project and the land will remain in its natural status and 391 affordable housing units will not be constructed and the burden of availability of affordable housing units will not be minimized and the proponent and the home owners who intend to buy the units for leasing will not earn income from the project .

Environmentally, the option has no adverse effects. Economically, the option discourages local development and thus hinders socio-economic development. The option is therefore rejected because it promotes only one domain of sustainable development which focuses on protection of the integrity and resilience of natural systems but discourages the socioeconomic domain which emphasizes on the socioeconomic fulfilment of individual and group aspirations and the enrichment of human relationships.

4.8.2: Alternative location

One of the factors that the proponent of the project put into consideration while selecting a site for the project is a location in an urban lower middle-class neighbourhood in order to meet their objective of providing affordable housing. Other considerations were availability of an ample size of land to meet their preconceived number of housing units and other expected expansions in the future, ideal topography that would not lead to flooding of the site and which would easily facilitate draining of storm water, access to a good motorable road and availability of public sewer system. The proponent chooses the proposed site Nairobi/Block66/6009 in Riruta location of Dagoretti South Subcounty because it met the above requirements because it is located in an urban lower middle-class neighbourhood, and the land measures 1.38379 acres and thus it is adequate for the proposed development. It has an ideal elevation with a slope and there is a public sewer system in proximity to the site. The site is served by Ndwaru tarmac road which is off Naivasha road and the owners of the land were willing to sell the land to the proponent.

All the other available sites considered for the project could not meet the requirements of the proponents for the proposed development and thus they were rejected in favour of the proposed site.

4.8.3: Design of the project

There are so many design considerations for housing in an urban setup which the proponent considered before coming up with the proposed design. The project has 3 designs of studios, 1 bedroom and 2 bedroom units which will meet the needs of the population of the area. The material consideration for the construction of the housing units were affordability of the materials, availability and durability which the proposed materials meet.

4.8.4: The preferred option

The preferred option of constructing 391 housing units for Keza project has the following benefits among others; a) It will generate income to the proponent, and the house owners who will be leasing their houses for income, b) it will create employment, c) It will reduce the problem of inadequate affordable housing, f). It will lead to opening up of other businesses.

Mitigation measures, including best construction management practices, has been recommended in the Environmental Impact assessment study report, and when diligently implemented will help to protect the physical, ecological and socio-economic environment of the project area. Commitments included in the EIA Study Report, as well as licenses and other authorizations that would be issued, are designed to avoid environmental damage in accordance with the Environmental Management and Co-ordination Act, 1999.

5.0 BASELINE INFORMATION.

5.1: Project Location.

The project site is located in Riruta sublocation, Riruta Location, Dagoretti South Subcounty of Nairobi County on Plot No NAIROBI/BLOCK66/6009. The site coordinates are S1^{O} 16'50.91539" E36"43'59.43036". Riruta lies in between Ngong Racecourse on the east, Kawangware on the west, Kabiria on the south and Westlands on the north. Access to the site is through Naivasha road to the West of the site and then into Ndwaru road which is north of the site. Figure 1 shows the location of the project site.

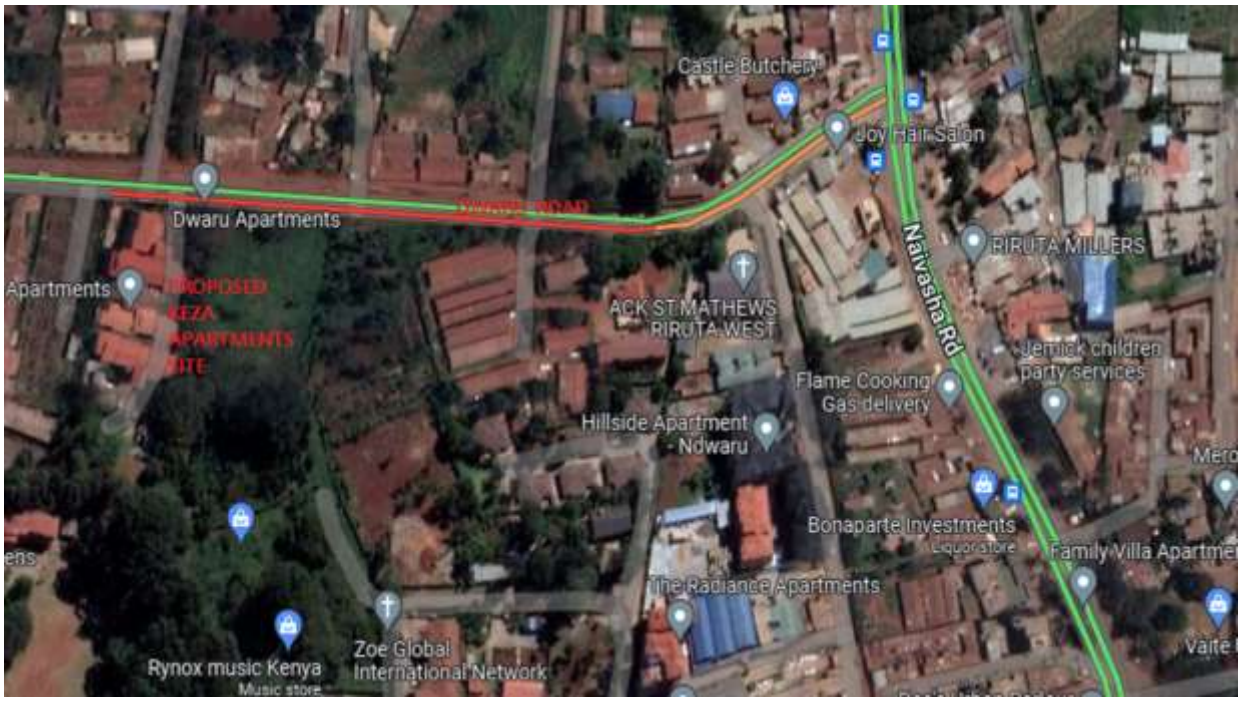


Figure 1:Location of Riruta's Urban Oasis Housing project

5.2: Topography and drainage

The project land is generally characterized by mild undulating terrain with a slight slope towards North of the site which is Ndwaru road. The estimate terrain elevation above sea level is 1828 metres. Plate 2 below shows the photo of the project site.

Plate 2: Riruta Urban Oasis Housing proposed project site

5.3: Population

Nairobi City County is one of the 47 counties of Kenya. With a population of 4,397,073 in the 2019 census, it is the third smallest yet the most populous of the counties, also serving as the capital of Kenya. Out of the 11 administrative sub counties of Nairobi during the 2019 National Housing Census, Dagoretti sub county was the fourth most populated county with a total population of 434,208 with a population density(No. per Sq. Km^2) of 14,908.

5.4: Geology and Soils

Geological history of Nairobi has been dominated by the volcanic activity since Miocene time. The evolution of Nairobi area has therefore been mainly controlled by the volcanic activity that accompanied the rift valley formation. The soils at the site are red soils with good physical conditions for plant growth.

5.5: Climatic Conditions

The climate data presented in this report consists of historical and projected temperature and precipitation data for Nairobi County which has been obtained from World Bank climate change knowledge portal. Climate projection data is modelled data from the global climate model compilations of the Coupled Model Inter-comparison Projects (CMIPs), overseen by the World Climate Research Program.

5.5.1: Historical data

5.51.1: Temperatures

The mean monthly temperature for Nairobi Kenya between 1991-2020 ranged between 17.07^0C and 20.55^0C with the highest temperature been experienced in the month of March while the lowest being experienced in the month of July. Table 9 below shows the Minimum, mean temperature and maximum monthly temperature for Kenya for the period between 1991-2020.

Table 9: Temperature data for 1991-2020

	Months											
	Jan	**Feb**	**Mar**	**April**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Min Temperature	12.76^{0}C	12.91^{0}C	14.06^{O}C	14.97^{0}C	14.01^{0}C	12.33^{0}C	11.24^{0}C	11.44^{0}C	11.89^{0}C	13.32^{0}C	13.86^{0}C	13.21^{0}C
Mean temperature	19.54^{0}C	20.12^{0}C	20.55^{0}C	20.2^{0}C	18.99^{0}C	17.54^{0}C	16.65^{0}C	17.07^{0}C	18.48^{0}C	19.71^{0}C	19.22^{0}C	19.03^{0}C
Max temperature	26.38^{0}C	27.4^{0}C	27.09^{O}C	25.58^{0}C	24.03^{0}C	22.81^{0}C	22.1^{0}C	22.75^{0}C	25.09^{0}C	26.14^{0}C	24.63^{0}C	24.92^{0}C

5.5.1.2: Precipitation

Table 10 shows the mean monthly precipitation experienced between 1990 and 2020 in Nairobi. The highest mean precipitation experienced was 181.88mm in the month of April while the lowest was 6.67mm which was experienced in the month of January.

Table 10: Mean monthly Precipitation for the period 1990-2020

Month	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Temp	6.67 mm	48 mm	85.98mm	181.88mm	132.00mm	28.46mm	17.89mm	20.64mm	21.19mm	71.62mm	145.5mm	96.54mm

Figure 2 below shows the relationship between temperatures and precipitations.

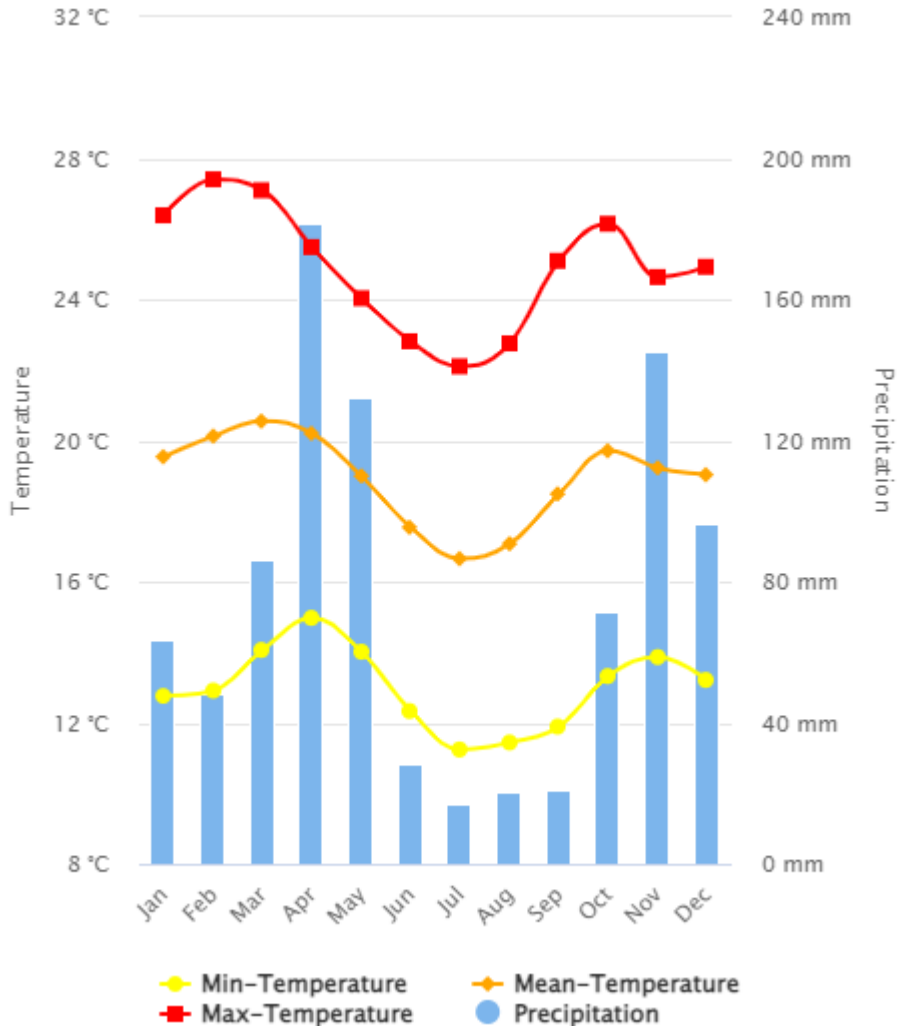


Figure 2: Relationship between temperatures and precipitations.

5.5.2:Projected climatology data

5.5.2.1: Temperatures

Climate projection data is modeled data from the global climate model compilations of the Coupled Model Inter-comparison Projects (CMIPs), overseen by the World Climate Research Program. Table 11 shows the projected mean monthly temperatures for the period 2020-2039. The reference period is 1995-2014 using SSP1-1.9 scenario,cams-csm1-0 . Figure 3 shows the relationship between the historical mean monthly temperatures and the projected mean monthly temperatures.

Table 11: Projected mean monthly temperatures

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean temperature	23.49	27.76^{0}C	25.59^{0}C	23.92^{0}C	22.45^{0}C	21.63^{0}C	21.12^{0}C	21.89^{0}C	22.86^{0}C	23.15^{0}C	22.62^{0}C	22.63^{0}C

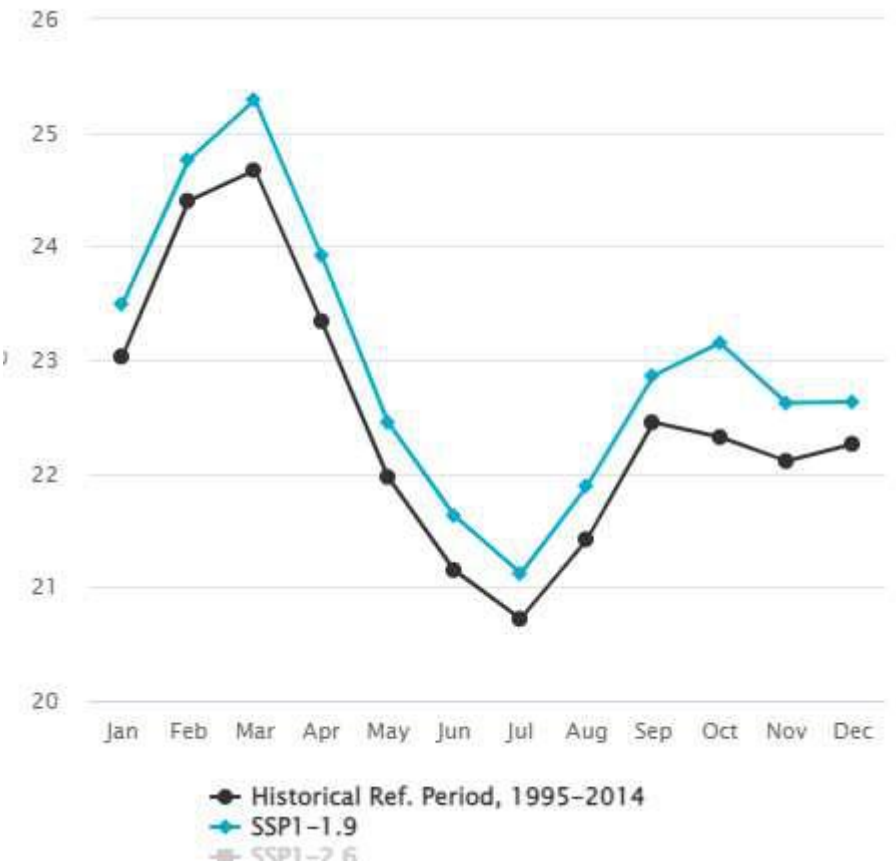


Figure 3: Projected climatology of mean temperature for 2020-2039

5.5.2.: Precipitation

Table 12 shows the expected mean monthly precipitation for 2020-2039 for Nairobi, Kenya. The reference period is 1995-2014 using SSP1-1.9 scenario,cams-csm1-0.

Table 12: Projected climatology of precipitation for 2020-2039 for Nairobi

	Jan	**Feb**	**Mar**	**April**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Mean precipitation	91.56mm	43.95mm	59.28mm	101.31mm	7.78mm mm	7.78mm	6.57mm	5.51mm	20.27mm	59.86mm	107.47mm	107.42mm

Figure 4 shows the relationship between the historical mean monthly precipitation and the projected mean monthly precipitation.

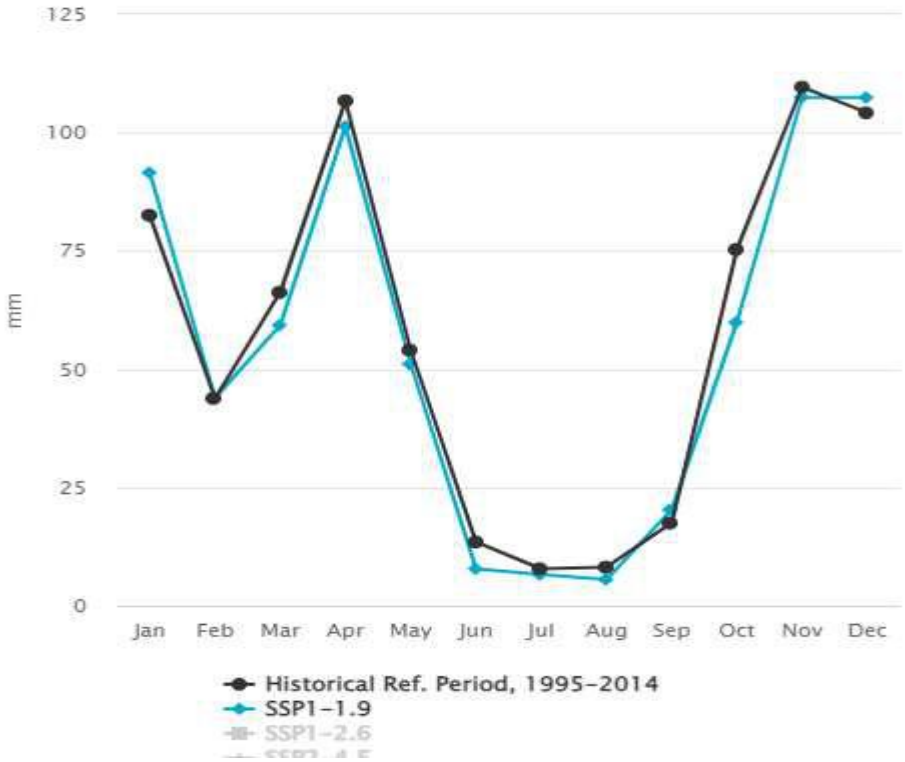


Figure 4: Projected climatology of precipitation for 2020-2039 for Nairobi Kenya

5.6: Ecological setting

The project site is covered by indigenous trees and grass. The following exotic and indigenous trees and shrubs were found at the site; *croton megalocarpus, markhamia lutea, grevillia robusta, Commiphora eminii, globulus Labill, Olea hochstetteri* and *Ficus natalensis*. The land is habitat to birds and other fauna such as snails. There is an over 70 years old Ficus natalensis(mugumo tree)at the site. Plate 3 and 4 shows the flora and fauna found at the site.

Plate 3: Trees and other vegetation at the site

Plate 4: Fauna found at the site:

5.7: Hydrology and drainage

The main rivers in Nairobi County are Nairobi River, Ngong River and Kabuthi River. These rivers are highly polluted as open sewers and industrial waste is directed towards them. Nairobi dam, which is along the Ngong River, and Jamhuri dam are the main water reservoirs in the County. The site is located approximately one Kilometre from a tributary of Nairobi river which is also polluted by sewage and solid waste.

5.8: Current land use of the project site

The land for the proposed project is covered with trees, shrubs, grass and other vegetation. A section of the land has seven graves of family members who have sold the land to Keza Development LLP. The piece of land holding the graves will remain with Kanare Ltd .The proponent intends to put a perimeter wall around the grave site in order to protect and preserve the grave site according to the wishes of the family members and to also separate the project from the graves. Plate 5 shows the seven graves at the grave site.

Plate 5: Graves at the site

The land is zoned as agricultural land and the proponent has applied for change of use of the land from agricultural to residential purpose and has been granted the approval. Attached in the annex find the approval from Nairobi City County.

5.9: Surrounding land use

The surrounding land is used for mixed purposes such as agricultural, residential, commercial, educational, religious among other uses.

5.9.1: Agricultural purposes

Bananas are being grown in the adjacent land by the owner of the land. Plate 6 shows the neighbouring agricultural use of the land.

Plate 6: Banana farming in the adjacent land.

5.9.2: Residential housing purposes

The site is surrounded by housing units such as Dwaru Apartments and Fraemy Apartments to the North; Hillside apartments to the East; Radiance Apartments, Riruta Panorama Apartments, Riruta Gardens houses, Greywoods Residency, Santa Maria Apartments and Ndwaru Apartments to the South East; Swamp Apartments, Marx Apartments, Northwood Apartments 1 to the South; Fiddie and Ashane Garden Apartments to the South West. Plate 7 shows the use of the surrounding land for residential purposes.

Plate 7: Dwaru Apartments adjacent to the site

5.9.3: Businesses

There are businesses surrounding the sites notably general merchandise shops, butcheries, restaurants, hotels, green groceries shops, bars, hair salons, milk bars, clothing businesses, furniture shops, barber shops and gas depot. Plate 8 shows the business along Ndwaru road.

Plate 8: Businesses along Ndwaru road

5.9.4: Learning institution

The learning institutions surrounding the site are Harvard school-Riruta which is adjacent to the site. Other institutions include Ndwaru Road Royal Academy, Bensesa Academy Primary school, Dream Education Centre Organization, High Peak Preparatory Academy.

Plate 9: Learning institutions adjacent to the proposed site

5.9.5: Religious institutions

The churches in the project area are Beulah Springs of Joy Church and Deliverance Church Kikuyu road, The Door Christian Fellowship Church Ndwaru road, PCEA Car Wash Church, KAG Church to the South West of the site; Riruta All Nations Gospel Church to the West; MRC Mispa Revival Church to the North West; ACK ST. Mathews Riruta West to the North East, Zoe Global International Network Church of Christ South East of the site.

Plate 10: Church near the project site

5.10: Infrastructure

Infrastructure is the underlying foundation for a County's development. This section describes the various infrastructural facilities in proximity to the project site .

5.10.1: Road network

The project site is well served by tarmac road which is in good condition. Access to the site is through Ndwaru road which connects to Naivasha road . Plate11 shows Ndwaru Road access road.

Plate 11:Ndwaru tarmac road

5.10.2: Communication
The site is well served by all the major telecommunication networks in the country notably Safaricom, Airtel and Telkom.

5.10.2: Energy
The main sources of energy in Nairobi county are electricity, LPG, diesel, kerosene and petrol. The site is connected to electricity by KPLC. There are petrol stations along Naivasha road supplying diesel, petrol, LPG and kerosene. LPG gas is also being supplied by small scale traders along Ndwaru road.

5.11: Water and sanitation
The site is within an area that is supplied by water from Nairobi Water and sewerage company. The surrounding area of the project site are served by Nairobi county sewerage system. The proponent intends to connect the project to the City County sewerage system and sink a borehole to supply water to the residents. Plate 12 shows a manhole for City County of Nairobi adjacent to the site.

Plate 12: Manhole adjacent to the proposed site

6. STAKEHOLDER ENGAGEMENT AND PUBLIC PARTICIPATION

6.1: Introduction

The Constitution of Kenya, 2010 provides that every Kenyan has the right to have the environment protected for the benefit of the present and future generations through legislation and other measures. Article 10 and 69 of the Constitution recognizes public participation as a principle of governance and gives the state a responsibility to encourage public participation in the management, protection and conservation of the environment.

According to EIA regulations, beneficiaries and members of the public living within new or improvement project sites (both public and private) are consulted to seek their views and opinions regarding the projects before they are implemented. Consultative Public Participation is therefore an important process in EIA studies.

6.2: Objectives of the Stakeholder Engagement and Public Participation (SEPP)

- Informing stakeholders and members of public of the project
- Gaining their views, concerns and values
- Taking account of public inputs in decision making
- Influencing project design
- Obtaining local knowledge
- Increasing public confidence
- Improving transparency and accountability in decision making
- Reducing conflict

6.3: Stakeholder characteristics

Consultation was done through rapid interaction with the stakeholders, followed by discussion and filling in questionnaires where they expressed their views on the projects and gave their recommendations to be implemented by the proponent. A meeting was conducted with a total of 27 local residents and those doing business in the project area at the Riruta's Urban Oasis Housing project site at Riruta location in Nairobi County. Mobilisation for stakeholder engagement meeting was done through the area chief. **Table 13** below shows the stakeholder consultation program and the mode of consultation. *(Attached in the annex find minutes for the meeting and a list of participants)*

Table 13: Stakeholders consultation program

Stakeholder Category	Date of Consultation	Mode of consultation
Keza Development LLP Employees	17th March 2023 & 14th April 2023	Questionnaires and Interview
Area Chief Mr. George Ogago	17th March 2023 & 14th April 2023	Interview
Havard school	20th April 2023	Interview & Questionnaire
ACK Riruta West	20th April 2023	Interview & Questionnaire
Local residents and business owners	12th April 2023	Meeting and questionnaire

6.4: Areas of focus during the public consultation

Stakeholder consultation focused on key areas of environmental, social and economic impacts. The consultation addressed the following issues; (a) Benefits of the project, (b) Environmental

concerns and, (c) Suggestions for addressing any concerns . **Table 14** shows the issues raised by the different categories of stakeholders and the proposed

Plate 13: Courtesy call at the chief's Office

Table 14: Issues raised by the different categories of Stakeholders

Stakeholder	Benefits	Concerns	Suggestions by Stakeholders
Keza Development employees	• Growth of the urban area • Job Opportunities • Provision of affordable accommodation	• Occupational Health and safety concerns during project phases	• Give job opportunity to neighboring residents • Promote youth in the area
Havard school-School Manager Pamela Grania	• Growth of population of learners because of the number of households which will occupy the houses.	• Noise pollution during construction • Security of the school which is adjacent to the site could be compromised. • Overload of sewer line by the project • Dust emissions affecting the learners. • Injury to the school children • Loss of trees that are in the boundary • Instability of Harvard school buildings due to vibrations during excavation work.	• Fence off the site before construction starts. • Consider constructing during school holidays to avoid noise disruptions. • Ensure that no Harvard school tree is lost and incase there is need to cut a tree belonging to Havard school, then consultation must be done before any tree is cut.
Ndwaru Road Royal Academy	• The school will benefit by getting more learners from Riruta' s Urban Oasis residents. • The affordable housing can enable the parents to pay school fees with ease.	• Insecurity • Air pollution • Increased crime rate. • Traffic jam	• The houses should be affordable and have a flexible payment plan • The security of the proposed area of the project should be worked on.
ACK Riruta West Church-Rev. Isaac Kabue(Vicar)	• Business will flourish. • Creation of affordable housing. • There will be growth of church membership. • The project will boost the economy of the area. • Employment creation	• Increase in solid waste whose management is already a challenge in the area • Overload of electric power which is inadequate for the existing users in the area.	• Provide employment to the local community through the church. • Give a good payment plan for the houses to enable many local people acquire houses.

		• Traffic jam because of the increased number of household with the vehicles • Damage of Ndwaru tarmac road by heavy trucks transporting construction materials • Hope the Developers are trustworthy and that they will deliver the houses they have promised and in the same quality.	
Local community and business owners	• It will create many business opportunities. • Job creation. • Affordable housing • The value of the land in the area will go up.	• Overload of the sewer system which is already not in good condition because of leakages and illegal connections • Exposure to gaseous emission.	• Ensure the locals get jobs in the project. • Assist the community to clean up the sewage system. • The developers should ensure that the houses are affordable and they will give the local community first priority.

Based on the stakeholders consultation exercise, Riruta's Urban Oasis Housing project will be beneficial in the following ways.

i. Provision of affordable housing
ii. Growth of population of learner in the neighbouring schools because of the number of households which will occupy the houses.
iii. Businesses will flourish
iv. The project will boost the economy of the area.
v. Employment creation
vi. There will be growth of church membership in the neighbouring churches.
vii. The value of the land in the area will go up.

However, the stakeholders expressed their concerns on the following negative impacts of the project and gave their suggestions for mitigating the impacts which is presented on **Table 14** above.

- Generation of large quantity of waste.
- Noise especially during construction phase which could affect learning in the adjacent Harvard school.
- Health and safety concern of the workers and the learners from Harvard school.
- Overload of Sewer system.
- Generation of dust which could affect the learners of Harvard school.
- Compromised security because of influx of workers in the neighbourhood.
- Damage of Ndwaru road by heavy trucks transporting large quantities of construction materials to the site.
- Traffic jam at the junction of Naivasha road from Ndwaru road during peak hours in the occupation phase of the project.
- High noise levels .

Plate 14: Filling of questionnaires

Plate 15: Selected photos of Stakeholder's and public consultation Meetings

"Attached in the annex find written submissions made by relevant stakeholders and minutes for the meeting"

7.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The proponent of the proposed project acknowledges the fact that the proposed project activities will have some impacts on the biophysical environment, health and safety of its workers and members of the public, and socio-economic wellbeing of the local communities. Thus, the main focus will be on reducing the negative impacts and maximizing the positive impacts associated with the project activities through a programme of continuous improvement.

An environmental management/monitoring plan has been developed to assist the proponent in mitigating and managing environmental impacts associated with the life cycle of the project. Based on the environmental impact assessment study the following are some of the impacts expected from the implementation of the project.

7.1: Impacts during planning phase

7.1.1: Positive impacts

(i) Income to professionals

Income will be earned by firms providing professional services such as engineering, survey and environmental consultancy.

(ii) Employment

Employment opportunities was created in the construction of the project sales office which is already in place and the contractor's site office which is yet to be constructed.

7.1.2: Negative impacts

(i) Insecurity

The project area might experience an influx of job seekers in the neighboring areas looking for employment thereby compromising security of the area.

7.2: Impacts during construction phase

7.2.1: Positive impacts

The following are the expected positive impacts of the project during the construction phase of Riruta's Urban Oasis Housing project:

(i) Employment opportunities

One of the main positive impacts during projects construction phase is the availability of employment opportunities to casual workers, construction engineers, masons, carpenters, joiners, electricians, metal welders and plumbers.

(ii) Provision of market for supply of construction materials

The project will require supply of sand, cement, building stones, hardcore stones, crushed rock (gravel/ ballast), steel and wooden fixtures and fittings, glass, timbers, roofing tiles and paint among others. This project will provide ready market to the suppliers such as companies and individuals with such materials.

(iii) Income for small food traders

The project will provide ready market for small traders selling food to construction workers.

7.2.2: Negative impact during the construction phase

(i) Air pollution

Largest particles called coarse particles (particles with diameter between 2.5 μm and 10 μm) will mainly consist of particulate matters from dust during excavation work and construction

materials such as cement, sand and stones. The finer particles (i.e., $PM_{2.5}$) will be derived from primary sources (e.g., combustion of fuels from construction machinery such as vehicles, cranes, vibrators among others. Both $PM_{2.5}$ and PM_{10} are capable of penetrating deep into the lungs but $PM_{2.5}$ can even enter the bloodstream, primarily resulting in cardiovascular and respiratory impacts, and also affecting other organs, *(WHO, 22 September 2021).* The risk factor of ambient air pollution are cancer, asthma, cardiovascular diseases, chronic obstructive pulmonary disease(COPD), diabetes and congenital anomalies.

(ii) Generation of Noise and vibrations pollution

Equipment for excavation and vibrators for compression of concrete can generate considerable noise and vibrations which could negatively affect the construction workers and learners of Harvard school which is adjacent to the site and Ndwaru road Apartments. Noise is an underestimated threat that can cause a number of short- and long-term health problems, such as for example sleep disturbance, cardiovascular effects, poorer work and school performance, hearing impairment *(WHO, 27 April 2010).* The WHO guidelines for community noise recommend less than 30 A-weighted decibels (dB(A) in bedrooms during the night for a sleep of good quality and less than 35 dB(A) in classrooms to allow good teaching and learning conditions.

(iii) Occupational health and safety risks

The project might pose health and risk to the construction workers. The following may be sources of accidents;

- Falling materials from the building,
- Fall of workers from the top of building,
- Injuries from construction machinery,
- Risk of loose earth and construction materials entering the eyes,
- Risk of falling in the excavated area before laying of foundation,
- Inhalation of dust from construction sites and
- Impairment of hearing due to noise from construction equipment.

(iv) Human waste

The wastes generated by the construction crew can have disastrous effects on the local environment if not disposed appropriately.

(v) Sexually transmitted diseases

Construction workers will come from communities with different cultural and welfare backgrounds. There is therefore possibility that the local community could be affected negatively by presence of migrant communities. For example the construction workers may not necessarily be accompanied by their spouses and as such young girls and women from the local community could be lured to engage in unprotected sexual intercourse by the workers with serious implications on the health of the local community such as infections by sexually transmitted diseases such as AIDS among others.

(vi) Loss of biodiversity

The project site is covered by trees, majority of which are indigenous. The site is a habitat for microorganisms and birds. The project will affect the existing landscape by removing existing grass and trees, excavation of the ground to pave way for the foundation and construction work. It will affect the views that people have from their homes, cars as they drive past the

site which was previously covered by trees, shrubs and other vegetations. The whole project will generate some amount of spoil. This may lead to loss of aesthetic value of the sites if the spoil is left on site for long before removal. Figure 5 shows the vegetation which will be lost.

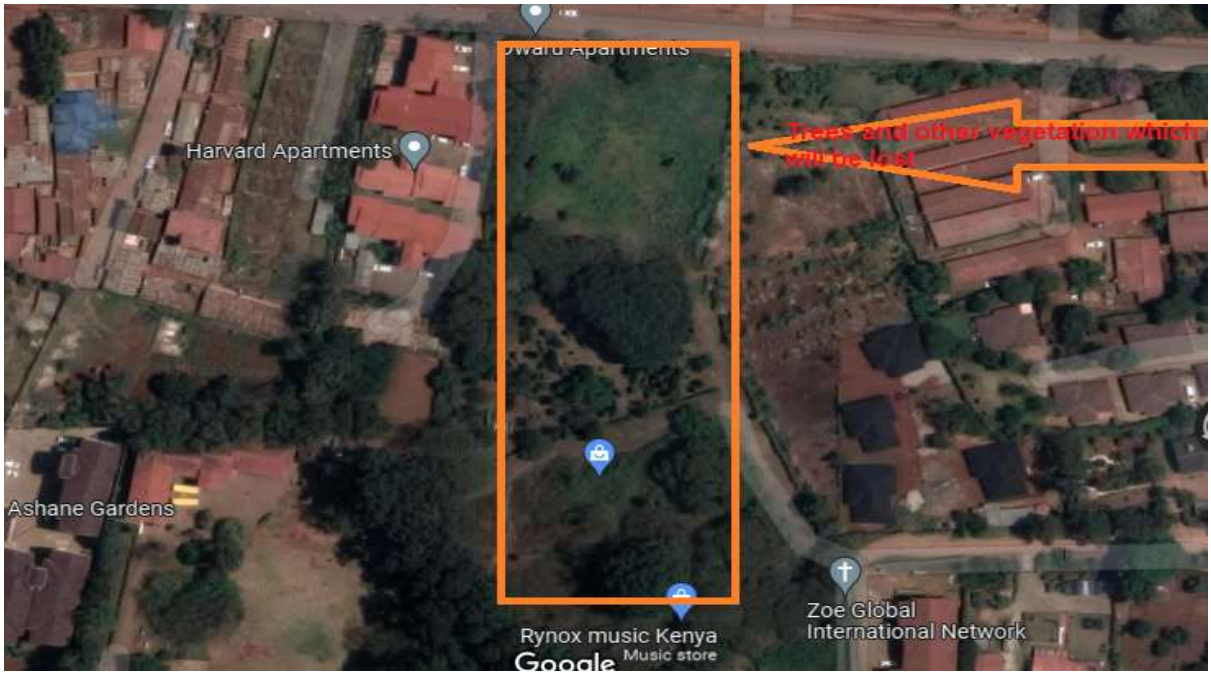


Figure 5: Area which will loose vegetation

(vii) Temporary traffic jam

Traffic jam may occasionally occur due to the slow speed that is associated with vehicles ferrying construction materials especially sand and stones.

(viii) Hydrology and water quality degradation

Project related operations could lead to surface water quality degradation. Contaminated soil from excavated site, accidental spills as a result of leaks from petroleum products, coupled with the normal leaking and dripping of oil, grease and solvents from the construction equipment and vehicles transporting materials to the construction sites could contaminate surface water if carried by storm water to Nairobi river tributary which is located about 1 kilometer from the site.

(ix) Solid waste generation

Large quantity of solid waste will be generated from soil excavations, construction material remains, construction materials packaging, food remains from workers and food packaging. Inappropriate dumping of excavated soil carried by storm water can cause blockage of surface drainages while food packaging and remains can be a source of households' pests and rodents.

(x) Soil erosion

Excavated soil left on the site during the construction phase could be easily washed away to the neighbouring Ndwaru road and its environ.

7.3: Impacts during project operations

7.3.1: Positive impacts during operation phase

(i) Income to the developers

The project developers will earn income from the sale and management of Riruta's Urban Oasis houses.

(ii) Provision of housing space

The project will provide housing space to over 391 families, thus reducing the burden of affordable housing that the government is experiencing.

(iii) Employment creation

Employment will be provided to security guards, cleaners among others in the apartments during occupation phase.

(iv) Increased income for businesses

The businesses along Ndwaru road will benefit from increased number of customers from the residents of Riruta's Urban Oasis project who will be consumers of the products and services they offer such as vegetables, fruits and dry grains among others . Other businesses in the area which will benefit from the project are waste handlers businesses, transport businesses, salon, entertainment and barber businesses.

(v) Growth of new businesses

New businesses will be started along Ndwaru road due to the expected increase of population of Riruta's Urban Oasis residents.

7.3.2: Negative impacts during operation phase

(i) Increased surface storm water

Increased storm water quantities due to increased impervious surface area from the roofs of the new buildings and the parking space which could cause flooding along Ndwaru road.

(ii) Generation of Liquid and solid domestic waste

Domestic wastes include papers, glass, metals, plastics, textiles, vegetable remains, fruit peels, bones, meat, chicken, fish, cardboard, old books, broken furniture, broken cutlery, old toys and cans. Waste water will be produced from the lavatories and from the kitchen.

(iii) Generation of E-waste

E-waste is electronic products that are unwanted, not working, and nearing or at the end of their "useful life." The following are the list of E-waste likely to be generated by Riruta's Urban Oasis project during the operation phase;

Microwaves, home Entertainment devices, electric cookers, heaters, fans, old cell phones, smartphones, desktop computers, computer Monitors, laptops, circuit boards, hard drives DVDs, stereos, televisions, video game Systems remote controls and television remotes.

According to WHO, E-waste consists of over 1,000 harmful substances, including lead, mercury, nickel, brominated flame retardants and polycyclic aromatic hydrocarbons (PAHs). Expectant mother, exposure to toxic e-waste can affect the health and development of her unborn child for the rest of its life. Potential adverse health effects include negative birth outcomes, such as stillbirth and premature births, as well as low birth weight and length. Exposure to lead from e-waste recycling activities has been associated with significantly reduced neonatal behavioural neurological assessment scores, increased rates of attention deficit/hyperactivity disorder (ADHD), behavioural problems, changes in child temperament, sensory integration difficulties, and reduced cognitive and language

scores*(WHO)* . Other adverse child health impacts linked to e-waste include changes in lung function, respiratory and respiratory effects, DNA damage, impaired thyroid function and increased risk of some chronic diseases later in life, such as cancer and cardiovascular disease (WHO).

(iv) Electrical accidents

The houses will be powered by a comprehensive power supply system including, wiring electrical system sockets and switches which will power electronics in the houses. Potential impacts during operation include accidental electrocution of those residing in the house while working with the electronics powered by electricity .

(v) Climate change impacts

Global Climate Modelling (GCM) data indicates that the mean monthly temperatures in Nairobi is projected to increase by between 0.8 and 1.5°C by the 2030s and 1.6°C to 2.7°C by the 2060s.

Warmer temperatures are especially important for precipitation because the Clausius-Clapeyron-Relationship dictates that for every 1ºC of increased air temperature, that air's potential to carry moisture increases by 7%. Thus, *the warmer the air, the much more moisture it "can" carry*, and therefore if rain were to form, much more water could be tapped into. *https://climateknowledgeportal.worldbank.org/country/kenya/extremes*.

Kenya and Nairobi county has experienced extreme precipitation in the past. Nairobi has a 1.22 change factor which shows how much more likely extreme precipitation event is likely to return in the next five years. One of the risk of climate change is flooding from high levels of rainfalls. According to State of Climate of Kenya,2020 prepared by Kenya Meteorological Department, roads and bridges were damaged as a result of the floods witnessed during the short rains season. Riruta' s urban Oasis Housing project site slopes towards Ndwaru road. The land where the proposed project will be developed is covered with trees, bushes and grass and thus allowing a sizeable amount of water to seep into the ground. Construction of roofs and pavements by Keza Development will lead to flow of storm water from the site in addition to storm water from other areas towards Ndwaru road which could lead to flooding of the road and damage of the road.

(vi) Traffic jam

Traffic jam may be experienced at the junction of Naivasha road from Ndwaru road during peak hours in the occupation phase of the project due to the increased numbers of households at Ndwaru road by 391 on completion and occupation of Riruta's Urban Oasis project. The dwellers will move in with their vehicle which they will use to transport them to work in the morning or to various other destinations in addition to the other road users in the area.

(vii) Medical waste

Medical waste will include unused and expired medicine such as capsules, tablets, syrups, inhalers, insulin injections, used syringes, bandages, medicine packaging such as empty inhalers, blister packs, syrup bottles, envelope among others.

(vi) Air pollution

Air pollution will occur from carbon dioxide from combustion of petroleum products used to run motor vehicles of the occupants, cooking using LPG, kerosene, charcoal. Air pollution is likely to be caused by chlorofluorocarbons (CFCs),Hydro fluorocarbons during refrigeration.

7.4: Impacts during decommissioning

7.4.1: Positive impacts during decommissioning phase

The following are the positive impacts during decommissioning phase -

(i) Rehabilitation of the environment

Appropriate rehabilitation will be carried out to restore the site to its original status or to a better state than it was originally. This will include replacement of topsoil and re-vegetation, which will lead to improved visual quality of the area where there was contractors site and sales office it if the environment is restored to preconstruction state.

(ii) Employment opportunities

Temporary employment opportunities will be created for the demolition of the sales office and the contractors site.

(iii) Reduced negative environmental impacts of operation

All other negative impacts listed under the operations section will drastically reduce if the decommissioning of the houses takes place and the site goes.

7.4.2: Negative impacts during decommissioning phase

The following are the negative impacts during decommissioning phase of the proposed project;

(i) Solid waste generation

Demolition of the sales office and the contractor's camp site will result in large quantities of solid waste. The waste will contain the materials used in construction including concrete, metal, drywall, wood, glass, paints, adhesives, sealants and fasteners. Although demolition waste is generally considered as less harmful to the environment since they are composed of inert materials, there is growing evidence that large quantities of such waste may lead to release of certain hazardous chemicals into the environment.

(ii) Dust emission

Large quantities of dust will be generated during demolition works. This will affect demolition workers as well as the neighboring residents of Ndwaru road Apartments and Learners and staff of Harvard school.

(iii) Soil Contamination

Soil could be contaminated by oil and grease spills from demolition machinery.

(iv) Occupational health and safety risk

Accidents could be experienced by workers during the decommissioning activities.

(v) Noise and vibrations

Noise could be experienced from the demolition work.

7.5: Impact analysis

Table 15 shows impact analysis of Riruta's Urban Oasis Housing project .

Table 15: Impact analysis matrix

Description of the impact	**Status**		**Magnitude**			**Footprint**			**Duration**				**Probability**		
	+ve	**-ve**	**Low**	**Medium**	**High**	**Site**	**Local**	**Region**	**Short term**	**Medium term**	**Long term**	**Permanent**	**Unlikely**	**Probable**	**Definite**
	Planning phase														
Income to professionals	√		√				√		√						√
Employment	√		√				√		√						√
Insecurity		√	√				√			√				√	
	Construction phase														
Description of the impact	**Status**		**Magnitude**			**Footprint**			**Duration**				**Probability**		
	+ve	-ve	Low	Medium	High	Site	Local	Region	Short term	Medium term	Long term	Permanent	Unlikely	Probable	Definite
Employment opportunities	√			√			√	√	√						√
Market for supply of construction materials	√			√			√	√	√						√
Income for small food traders	√		√				√		√					√	
Air pollution		√		√		√	√		√						√

Noise		√	√			√	√		√						√
Workers' safety		√	√			√			√					√	
Human waste		√	√			√			√						√
Sexually transmitted diseases		√		√			√	√				√		√	
Loss of biodiversity		√		√		√						√			√
Hydrology and water quality degradation		√	√				√	√	√					√	
Solid waste generation		√		√		√	√		√						√
Soil erosion		√	√				√		√					√	
	Occupation Phase														
Description of the impact	**Status**		**Magnitude**			**Footprint**			**Duration**				**Probability**		
	+ve	-ve	**Low**	Medium	High	Site	Local	Region	Short term	Medium term	Long term	Permanent	Unlikely	Probable	Definite
Income to the developers	√				√			√		√					√

Provision of housing space	√							√				√			√
Employment creation	√						√				√				√
Increased income for businesses	√			√			√				√				√
Growth of new businesses	√			√			√				√				√
Increased surface storm water		√		√		√	√			√					√
Generation of Liquid and Solid domestic waste		√			√	√	√				√				√
Generation of E-waste		√			√	√	√				√				√
Electrical accidents		√	√			√					√			√	
Climate change impacts		√		√			√				√				√
Traffic jam		√		√			√				√			√	
		√													

	Decommissioning phase														
Description of the impact	**Status**		**magnitude**			**Footprint**			**Duration**				**Probability**		
	+ve	**-ve**	Low	Medium	High	Site	Local	Region	Short term	Medium term	Long term	Permanent	Unlikely	Probable	Definite
Rehabilitation of the environment	√			√		√			√						√
Employment opportunities	√		√				√		√						√
Reduced negative environmental impacts of operation	√		√			√			√						√
Solid waste generation		√	√			√	√		√						√
Dust emission		√	√			√	√		√					√	
Soil Contamination		√	√			√			√					√	
Occupational health and safety risk		√	√			√			√					√	
Noise and vibrations		√		√		√	√		√						√

7.6:Mitigation measures

7.6.1: Planning phase

(a) Insecurity

Recommended Mitigation measures

- The contractor should vet the workers he is employing at the site.
- Once all the positions have been filled the, the contactor should put a notice of "All vacancies are filled" to avoid job seekers from loitering around the site.
- Scanning all the workers coming and leaving site.
- Ensuring that the workers have employment and national identification card with them at all times.
- Loitering should be prohibited around the project site.

7.6.2: Construction phase

(a) Air pollution

Recommended Mitigation measures

- Immediate prohibition of any burning of waste at the site.
- Provide Personal Protective Equipment (PPEs) such as nose masks to the affected workers on site during construction phase.
- Regular and prompt maintenance of construction machinery and equipment. This will minimize generation of noxious gases and other suspended particulate matter
- Control over areas generating dust particles. Such areas should be regularly cleaned or sprinkled with water to reduce dust.
- Delivery trucks transporting sand should be covered to avoid creating dusty conditions.
- All construction vehicles and equipment should be switched off when not in use and running of engine when the vehicle is not in use should be discouraged.
- All personnel working on the project should be trained prior to construction on methods of minimizing dust impacts during construction.

(b) Noise

Recommended Mitigation measures

- Switching off the vehicles and other construction machinery when not in use.
- Regular servicing of construction machinery so as to reduce noise caused by worn out parts.
- Construction vehicle should reduce speed especially when approaching Harvard school .
- Providing ear mufflers to construction workers.
- Noise in the construction site should not go beyond the recommended limits by EMCA (Noise and excessive vibration pollution) (control) regulations, 2009) shown on table 16 .

Table 16:Maximum Permissible Noise Levels for constructions sites

Facility	Maximum Noise Level Permitted (Leq) in dB(A)	
	Day	Night
(i) Health facilities, educational institutions, homes for disabled etc.	60	30
(ii) Residential	60	35
(iii) Areas other than those prescribed in (i) and (ii)	75	65

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

(c) Occupational Health and safety risks

Recommended Mitigation measures

- Securing workers who are on high heights.
- Proper training of workers on the use of the construction equipment.
- Presence of a trained first aider and well stocked first aid box at the site at all times.
- Provision and enforcement of use of PPEs e.g. helmet, overalls, boots, gloves and goggles for employees and any person visiting the construction site.

(d) Human Waste

Recommended Mitigation measures

- Provide sanitary facilities for workers at the site in compliance with employment Act, No. 11 of 2007

(e) Sexually transmitted diseases

Recommended Mitigation measures

- Workers to be sensitized on the consequences of social ills and promiscuous behaviors (over consumption of alcohol, STDs, HIV /AIDS etc.)
- Provision of condoms to the workers

(f) Loss of biodiversity

Recommended Mitigation measures

- Restrict clearing of vegetation to the areas which will be constructed.
- Compensating trees lost during construction by replanting tree in other areas.
- Avoid cutting trees that are in the boundary between the project site and Harvard school unless there is a consent from Harvard school proprietor.

(g) Hydrology and water quality degradation

Recommended Mitigation measures

- Minimise spillage of petroleum products.
- Regular servicing of construction equipment
- Correcting any leakage immediately.
- Cementing storage area for oil and other fossil fuels.
- Immediate cleaning of any accidental spills
- Maintenance work of construction equipment should be carried out in a designated area (protected service bays fitted with oil filters.)
- Develop a spill prevention and control plan to counter and manage emergencies that may occur/arise in the event of accidental spills.

(f) Solid waste generation

Recommended Mitigation measures

- Excavations should be restricted to the areas where foundations will be laid only.

- Use an integrated solid waste management system through the following options: i) waste source reduction, ii) material reuse and recycling, and, iii) disposal.
- Dispose waste more responsibly in appropriate designated dumping sites.
- Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste.
- Provide waste collection sites and facilities within the site.
- Recyclable materials such as metals should be sold to scrap metal recyclers.
- Reusable materials such as wood/stone/roofing tiles should be reused.
- Plant matter should be composted for use as manure.
- Waste bins should be provided during construction.

(h) Soil erosion

Recommended Mitigation measures

- Limit clearing of vegetation to the areas to be developed.
- Compaction of excavated soil during excavation.
- Revegetation of the areas left bare.

7.6.3.Operation Phase

(a) Climate change risk -Flooding

Recommended Mitigation measures

- Ensure adequate drainage are constructed from the site and away from Ndwaru road which should be kept clear throughout to avoid localised flooding.
- Ensure that no solid waste is left lying on the Riruta's Urban Oasis compound which can be carried by storm water into the drainage systems causing blockage.
- Invest in water harvesting infrastructure at the project site to reduce storm water flow.

(b) Generation of Liquid and Solid domestic waste

Recommended Mitigation measures

- Well managed waste collection and disposal system should be put in place by providing a system of collection and storing in separate container/bin/basket and then collected by licenced waste handlers.
- Inorganic wastes should be sold to licenced waste dealers (plastic, cans, glasses etc.)
- Burning of materials should not be done.
- The developer should obtain authorization from Nairobi City County to connect the building to their sewerage system.
- Monitoring of effluent discharge should be done according to EMCA (Waste Water regulations) and a licence for that discharge should be obtained from NEMA.

(c) Generation of E-waste

Recommended Mitigation measures

- Avoid burning of E-waste
- Separate collection point for E-Waste should be provided by the property managers and sensitization should be done on how to handle E-waste.

- E-waste should be delivered to the E-waste management handlers e.g E-waste Initiative Kenya

(d) Electrical accidents

Recommended Mitigation measures

- Only allowing trained and certified workers to install, maintain, or repair electrical equipment.
- No one should approach an exposed, energized or conductive part even if properly trained unless:

  -The worker is properly insulated from energized part with gloves or other approved insulation; or

  -The energized part is properly insulated from the worker and any other conductive object; or

  -The worker is properly insulated and insulated from any other conductive object (live-line work).
- All electrical installations should be performed by certified personnel and supervised by an accredited person.

(e) Medical waste

Recommended Mitigation measures

- Avoid burning of medical waste
- Separate collection point for medical waste should be provided by the property managers and sensitization should be done on how to handle medical waste.
- Medical waste should be collected by licenced medical waste handlers for incineration.

7.6.4. Decommissioning phase
(a) Solid waste generation

Recommended Mitigation measures

- Use an integrated solid waste management system through the following options: i) waste source reduction, ii) material reuse and recycling, and, iii) disposal.
- Well managed waste collection and disposal system should be put in place by providing a system of collection and storing in separate container/bin/basket and then collected by licenced waste handlers.
- Inorganic wastes should be sold (plastic can, glasses etc.).
- Burning of materials should not be done.

(b) Air pollution

Recommended Mitigation measures

- Providing dust masks to demolition workers.
- Reducing the speed of vehicle transporting the debris.
- Switching off the vehicles and other demolition machinery when not in use.
- Regular servicing of demolition machinery so as to reduce emission

(d) Accidental spillage and leakage of petroleum products and oils

Recommended Mitigation measures

- Timely maintenance of equipment.
- Spill containment measures should be put in place.
- Emergency spill response procedures to be put in place.

(e) Occupational health and safety risk

Recommended Mitigation measures

- Securing workers who are on high heights.
- Proper training of workers on the use of the demolition equipment.
- Presence of a trained first aider and well stocked first aid box at the site at all times.
- Provision and enforcement of use of PPEs e.g. helmet, overalls, boots, gloves and goggles for employees and any person visiting the demolition site.

(f) Noise and vibrations

Recommended Mitigation measures

- Providing ear mufflers to demolition workers.
- Reducing the speed of vehicle carrying demolition waste materials at noise sensitive areas such as schools and churches.
- Switching off the vehicles and other demolition machinery when not in use.
- Regular servicing of demolition machinery so as to reduce noise

8.0: ENVIRONMENTAL MANAGEMENT PLAN

8.1 Introduction

The aim of the environmental management plan (EMP) is to detail the actions required to effectively implement the mitigation measures identified for the negative impacts predicted and recommended in the EIA. These actions are required to minimize negative impacts and enhance positive impacts associated with Riruta's Urban Oasis Housing project. The EMP actions present the commitments made by the proponent, Keza Development LLP for addressing the impacts of the project.

a) Planning and design phase

Refers to the stage when the feasibility studies are being undertaken, the project description is being developed and the housing project is being designed.

b) Construction phase

This will commence after the EIA licence for the project has been issued and Keza Development LLP has taken the decision to implement the project.

c) Operations

This is the phase during which the Riruta's Urban Oasis Houses will be ready for occupation and people have moved into the houses.

d) Decommissioning phase

Decommissioning happens once the construction work is complete and the contractor no longer requires the campsite and he has to demolish it . Decommissioning of the sales office will also take place once all the houses are fully sold. Decommissioning of Riruta's Urban Oasis Houses may also become necessary due to unavoidable reason.

The objectives of the EMP are as follows:

- To ensure that the project will operate in compliance with applicable national environmental legal requirements throughout the full cycle;
- To outline the institutional measures required to prevent, minimize, mitigate and compensate for adverse environmental and social impacts, or to enhance the project beneficial impacts.
- To indicate the key players to be engaged in the various environmental issues associated with the project.

8.2: Management action

The EMP provides clear environmental management actions to be undertaken throughout the project cycle. The various actions that need to be implemented to ensure that environmental objectives are met are described in the EMP.

8.3: Roles and responsibilities

The successful implementation of the EMP is however dependent on clearly defined roles and responsibilities for each of the management actions given. Roles have been ascribed to the relevant parties such as the following:

a) Contractor
b) Developer – Keza Development LLP
c) Property manager

8.4: Environmental Management Plan

The negative impacts, mitigation measures, and allocation of costs and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts for Riruta's Urban Oasis Housing Project are provided below for the; a) project planning stage b) construction stage, c) operational stage, and d) decommissioning stage.

Table 17*:* Environmental Management Plan (EMP)

Pre construction phase				
POTENTIAL DIRECT IMPACTS	**MANAGEMENT/MITIGATION MEASURES**	**MONITORING**	**RESPONSIBILITY**	**ESTIMATED COST(KSHS)**
Insecurity	• The contractor should vet workers before employment. • Once all the positions have been filled the, the contactor should put a notice at the entrance of the site indicating that "All vacancies are filled" to avoid job seekers from loitering around the site. • Scanning all the workers coming and leaving site. • Ensuring that the workers have employment and national Identification card with them at all times. • Loitering should be prohibited around the project site.	Insecurity incidences	Contractor	100,000.00

CONSTRUCTION				
POTENTIAL DIRECT IMPACTS	**MANAGEMENT/MITIGATION MEASURES**	**MONITORING**	**RESPONSIBILITY**	**ESTIMATED COST(KSHS)**
Air pollution	• Prohibition of any burning of waste at the site • Provide Personal Protective Equipment (PPEs) such as nose masks to the affected workers on site during construction phase • Regular and prompt maintenance of construction machinery and equipment. • Control over areas generating dust particles. Such areas should be regularly cleaned or sprinkled with water to reduce dust. • Delivery trucks transporting construction materials should be covered to avoid creating dusty conditions • All construction vehicles and equipment should be switched off when not in use and running of engine when the vehicle is not in use should be discouraged • All personnel working on the project should be trained prior to construction on methods of minimizing dust impacts during construction.	Particulate matter	Contractor	50,000.00

Noise	• Providing ear mufflers to construction workers. • Switching off the vehicles and other construction machinery when not in use. • Construction work should not be done at night. • Regular servicing of construction machinery so as to reduce noise caused by worn out parts. • Construction vehicle should reduce speed especially when approaching Harvard school . • Noise in the construction site should not go beyond the recommended limits by EMCA (Noise and excessive vibration pollution) (control) regulations, 2009)	Noise levels	Contractor	30,000.00
Occupational health and safety risks	• Securing workers who are on high heights. • Proper training of workers on the use of the construction equipment. • Presence of a trained first aider and well stocked first aid box at the site at all times. • Provision and enforcement of use of PPEs e.g., helmet, overalls, boots, gloves and goggles for employees and any person visiting the construction site.	• Number of accidents • Presence of Accident/incident register	Contractor	100,000.00
Human Waste	• Provide sanitary facilities for workers at the site in compliance with employment Act, No. 11 of 2007.	• Presence of clean toilet or pit latrine at the site	Contractor	30,000.00

Sexually transmitted diseases	• Workers to be sensitized on the consequences of social ills and promiscuous behaviors (over consumption of alcohol, STDs, HIV /AIDS etc.) • Provision of condoms to the workers	Well stocked condom dispenser on site and sensitization materials	Contractor	50,000.00
Loss of biodiversity	• Restrict clearing of vegetation to the areas which will be constructed. • Compensation of trees lost by replanting other trees in other areas. • Avoid cutting trees that are in the boundary between the project site and Harvard school unless there is a consent from Harvard school proprietor.	No. of trees lost and No. of trees planted	Proponent & Contractor	60,000.00
Hydrology and water quality degradation	• Minimise spillage of petroleum products • Regular servicing of construction equipment • Correcting any leakage immediately. • Cementing storage area for oil and other fossil fuels • Immediate cleaning of any accidental spills • Maintenance work of construction equipment should be carried out in a designated area (protected service bays fitted with oil filters.)	Spill incidences	Contractor	250,000.00

	• Develop a spill prevention and control plan to counter and manage emergencies that may occur/arise in the event of accidental spills.			
Solid waste generation	• Excavations should be restricted to the areas where foundations will be laid only. • Use an integrated solid waste management system through the following options: i) waste source reduction, ii) material reuse and recycling, and, iii) disposal • Dispose waste more responsibly in appropriate designated dumping sites • Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste • Provide waste collection sites and facilities within the site • Recyclable materials such as metals should be sold to scrap metal recyclers. • Reusable materials such as wood/stone/roofing tiles should be reused. • Plant matter should be composted for use as manure	• Quantity of waste Generated • Quantity of waste reused • Quantity of waste recycled • Quantity of waste composted • Quantity of waste collected for disposal	Contractor & Proponent	200,000.00

	• Waste bins should be provided during construction.			
Soil erosion	• Limit clearing of vegetation to the areas to be developed. • Compaction of excavated soil during excavation • Revegetation of the areas left bare	Handling of Excavated soil	Contractor	20,000.00

OPERATION PHASE				
POTENTIAL DIRECT IMPACTS	**MITIGATION MEASURES**	**MONITORING**	**RESPONSIBLE PARTY**	**ESTIMATED COST (KSH)**
Climate change risk -Flooding	• Ensure adequate drainage are constructed from the site and away from Ndwaru road which should be kept clear throughout to avoid localised flooding. • Ensure that no solid waste is left lying on the Riruta's Urban Oasis compound which can be carried by storm water into the drainage systems causing blockage. • Invest in water harvesting infrastructure at the project site to reduce storm water flow.	Incidences of Flooding	Property Managers	-
Generation of Liquid and Solid domestic waste	• Well managed waste collection and disposal system should be put in place by providing a system of collection and storing in separate	• Quantity of waste Generated • Quantity of waste	Property Manager	200,000.00

	container/bin/basket and then collected by licenced waste handlers. • Inorganic wastes should be sold to licenced waste dealers (plastic, cans, glasses etc.) • Burning of materials should not be done. • The developer should obtain authorization from Nairobi City County to connect the building their sewerage system. • Monitoring of effluent discharge should be done according to EMCA (Waste Water regulations) and a licence for that discharge should be obtained from NEMA.	reused • Quantity of waste recycled • Quantity of waste composted • Quantity of waste collected for disposal		
Generation of E-waste	• Avoid burning of E-waste • Separate collection point for E-Waste should be provided by the property managers and sensitization should be done on how to handle E-waste. • E-waste should be delivered to the E-waste management handlers e.g E-waste Initiative Kenya	• Quantity of E-waste Generated • Quantity of E-waste collected for disposal	Property Manager	60,000.00

Electrical accidents	• Only allowing trained and certified workers to install, maintain, or repair electrical equipment. • No one should approach an exposed, energized or conductive part even if properly trained unless: -The worker is properly insulated from energized part with gloves or other approved insulation; or -The energized part is properly insulated from the worker and any other conductive object; or -The worker is properly insulated and insulated from any other conductive object (live-line work). All electrical installations should be performed by certified personnel and supervised by an accredited person.	• No of electrical accidents	Property managers	-
Medical waste	• Avoid burning of medical waste • Separate collection point for medical waste should be provided by the property managers and sensitization should be done on how to handle medical waste. • Medical waste should be collected by licenced medical waste handlers for incineration	• Quantity of E-waste Generated • Quantity of E-waste collected for disposal	Property managers	As per charges of incenerators

DECOMMISSIONING PHASE				
POTENTIAL DIRECT IMPACTS	**MANAGEMENT/MITIGATION MEASURES**	**MONITORING**	**RESPONSIBILITY**	**ESTIMATED COSTS [KSHS]**
Solid waste generation	• A solid waste management plan should be put in place by providing a system of collection and storing in separate container/bin/basket and then collected by licenced waste handlers. • Inorganic wastes should be sold to licenced waste dealers (plastic, cans, glasses etc.) • Burning of materials should not be done. The developer should obtain authorization from Nairobi City County to connect the building their sewerage system.	• Amount of waste generated • Handling of different waste	Demolition contractors	200,000.00
Air pollution	• Providing dust masks to demolition workers • Reducing the speed of vehicle transporting the debris • Switching off the vehicles and other demolition machinery when not in use • Regular servicing of demolition machinery so as to reduce emission	Air quality	Demolition Contractor	Normal demolition budget

Occupational health and safety risk	• Securing workers who are on high heights.; • Proper training of workers on the use of the demolition equipment • Presence of a trained first aider and well stocked first aid box at the site all the time • Provision and enforcement of use of PPEs e.g., helmet, overalls, boots, gloves and goggles for employees and any person visiting the demolition site.	• Number of accidents • Presence of Accident/incident register	Demolition contractor	50,000.00
Soil Contamination	• All contaminated soils shall be excavated, treated and disposed of at the designated site	Incidences of soil contamination	Demolition contractor	-
Noise and vibrations	• Providing ear mufflers to demolition workers • Reducing the speed of vehicle carrying demolition waste materials at noise sensitive areas such as schools and churches • Switching off the vehicles and other demolition machinery when not in use • Regular servicing of demolition machinery so as to reduce noise	• Complains from the neighbours • Noise levels during events	Demolition contractor	-

9: Conclusion and Recommendation

The findings of the EIA based on the disclosed project details and the baseline site assessment indicated that the project is desirable and will support the realization of national development goals as outlined in a number of national strategies such as Vision 2030. The proposed Riruta's Urban Oasis Housing project in Riruta location of Nairobi County is in line with the spirit of Article 43 of the National Constitution of Kenya on the right to accessible and adequate housing. The project is also in line with the National Housing policy, overall goal of provision of adequate shelter and a healthy living environment at an affordable cost to all socio-economic groups in Kenya in order to foster sustainable human settlements. The proposed project will also contribute towards the realization of Kenya Vision 2030 goal of achieving affordable housing for all by 2030. At international level, Riruta's Urban Oasis Housing project will significantly contribute towards the realization of the UN-SDG-11 on making cities and human settlements inclusive, safe, resilient and sustainable by 2030.

The EIA process has established that project will generate employment opportunities for both skilled and semi-skilled workers resulting directly from the construction and maintenance of the Housing project. The project will also generate indirect employment opportunities for people who will be supplying construction materials to the site. The operation phase of the project will significantly bridge the housing deficit in the country.

The construction of Riruta's Urban Oasis houses will not have highly significant adverse environment impacts because the project will adopt proper mitigation measures which have been identified by the EIA consultant in order to avoid negative impacts of the project.

This Project is feasible with stable economic benefit and strong anti-risk capacity. The analysis of the project alternative options showed that the project is indispensable. Therefore, the project is necessary, and should be implemented. A comprehensive Environmental Management Plan (EMP) has been developed of which the proponent will implement to ensure minimal damage to the environment. We therefore, recommend the project for NEMA approval because it:- a) is well within the spirit of the National Constitution, b) will support implementation of the National Housing Policy (2016).

In view of the findings of the EIA, the proposed project is considered as environmentally sound. Further, the project proponent is willing to guarantee that the potential adverse impacts whose means of mitigation have been disclosed in this report and most of them have already been incorporated in the project design will be effectively implemented. On the basis of these findings, it is recommended that the proposed Riruta's Urban Oasis Housing project be approved based on the willingness by the proponent to implement the proposed project in strict adherence to the Environmental Management Plan (EMP) and Environmental Monitoring Plan. Further, NEMA should issue the proponent with an EIA license as required by Kenya's environmental laws.

References

Kenya Gazette Supplement Acts 2000, Environmental Management and Coordination Act Number 8 of 1999. Government Printer, Nairobi

Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003. Government printer, Nairobi

Kenya gazette supplement Environmental Management and Coordination (Water Quality) Regulations, 2006. Government printer, Nairobi

Kenya gazette supplement Environmental Management and Coordination (Waste Management) Regulations, 2006. Government printer, Nairobi

Kenya gazette supplement Environmental Management and Coordination (Excessive Noise and Vibration Control) Regulations, 2009. Government printer, Nairobi

Kenya Gazette Supplement Acts Building Code 2000 Government Printer, Nairobi

Kenya Gazette Supplement Acts Land Planning Act (Cap. 303) Government Printer, Nairobi

Kenya Gazette Supplement Acts Local Authority Act (Cap. 265) Government Printer

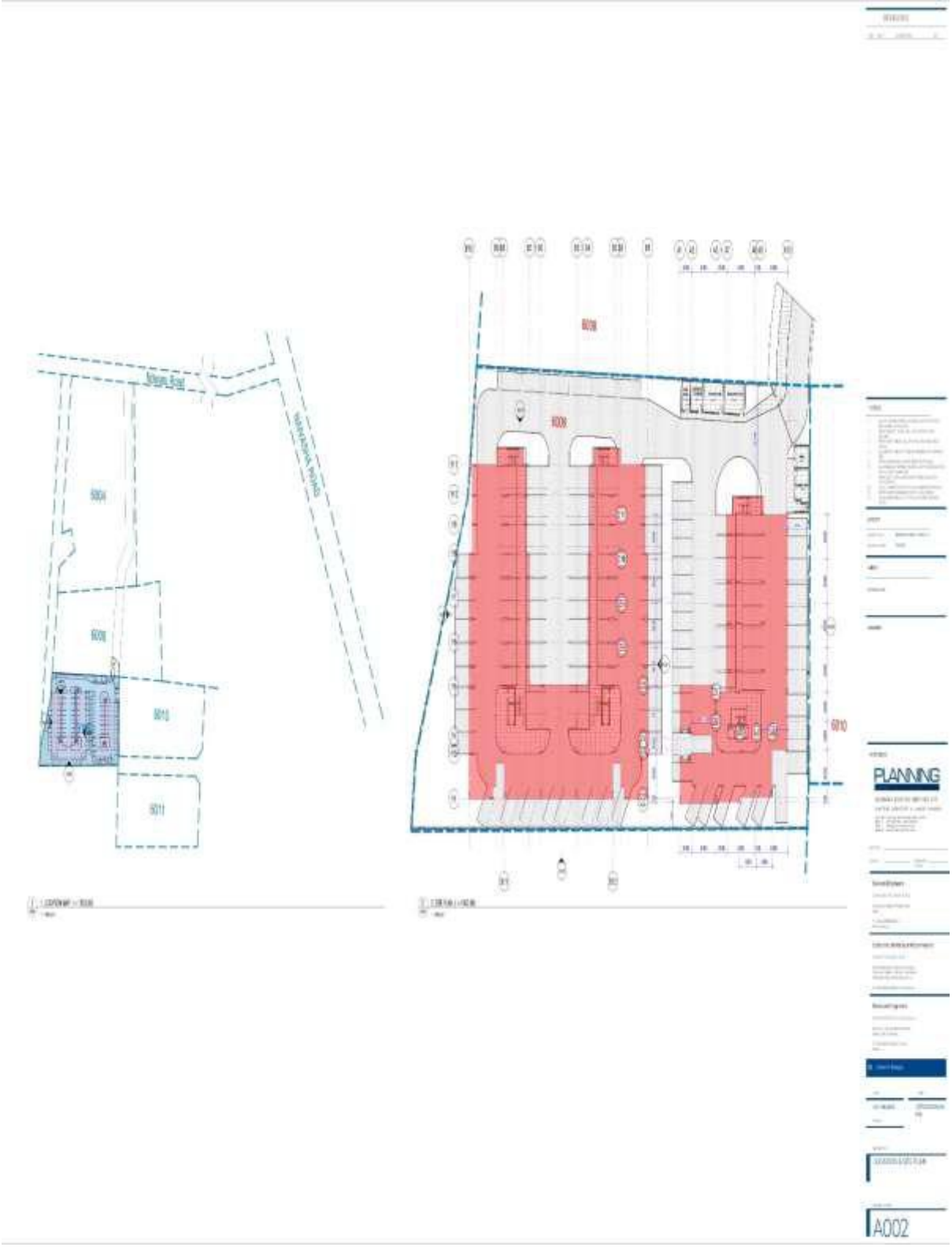
Kenya Gazette Supplement Acts Physical Planning Act, 1999 Government printer, Nairobi

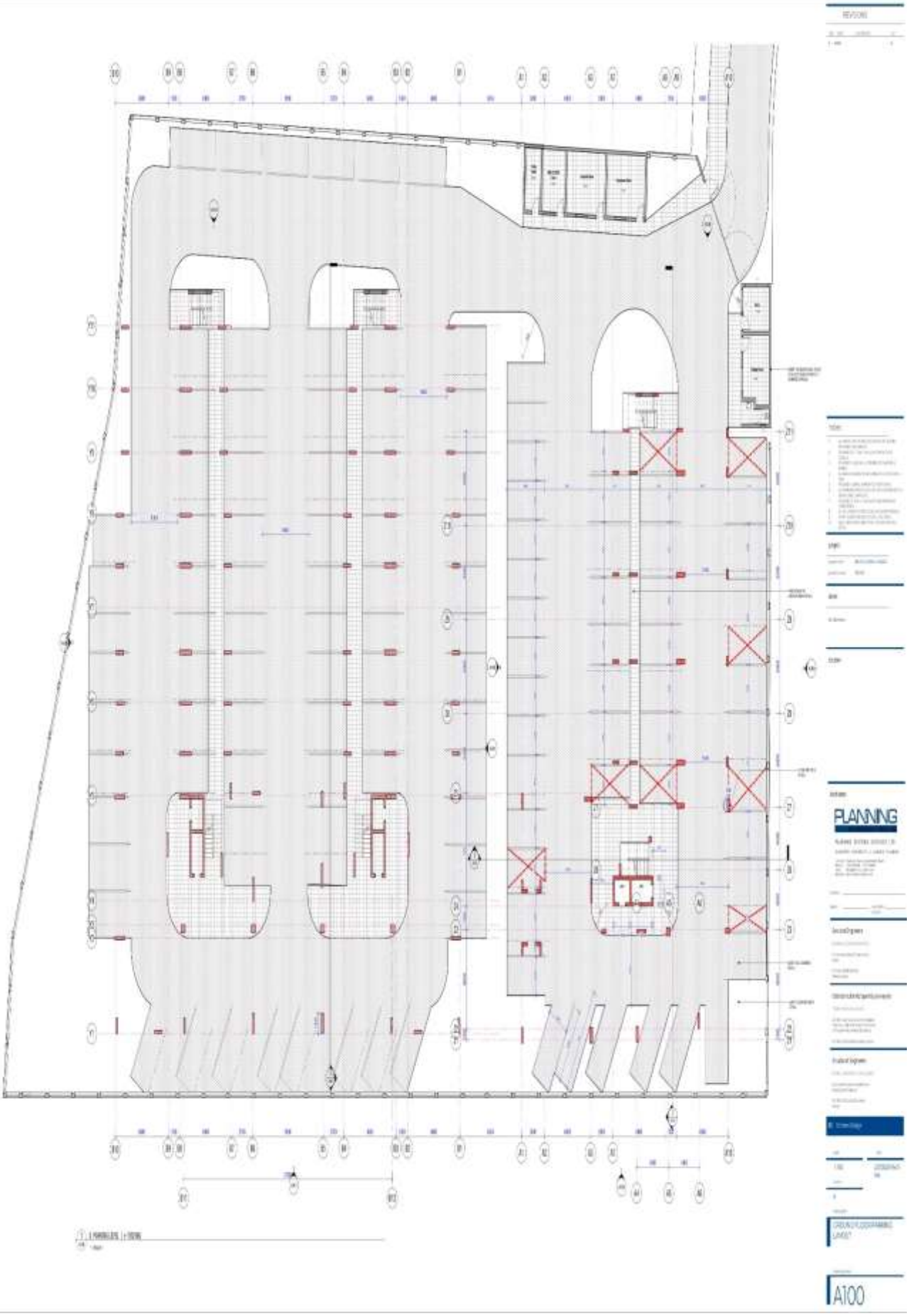
Kenya Gazette supplement Acts Public Health Act (Cap. 242) government printer, Nairobi.

National Environment Secretariat 1985, Mombasa District Environmental Assessment

ANNEXES

ANNEXURE 1: DESIGNS

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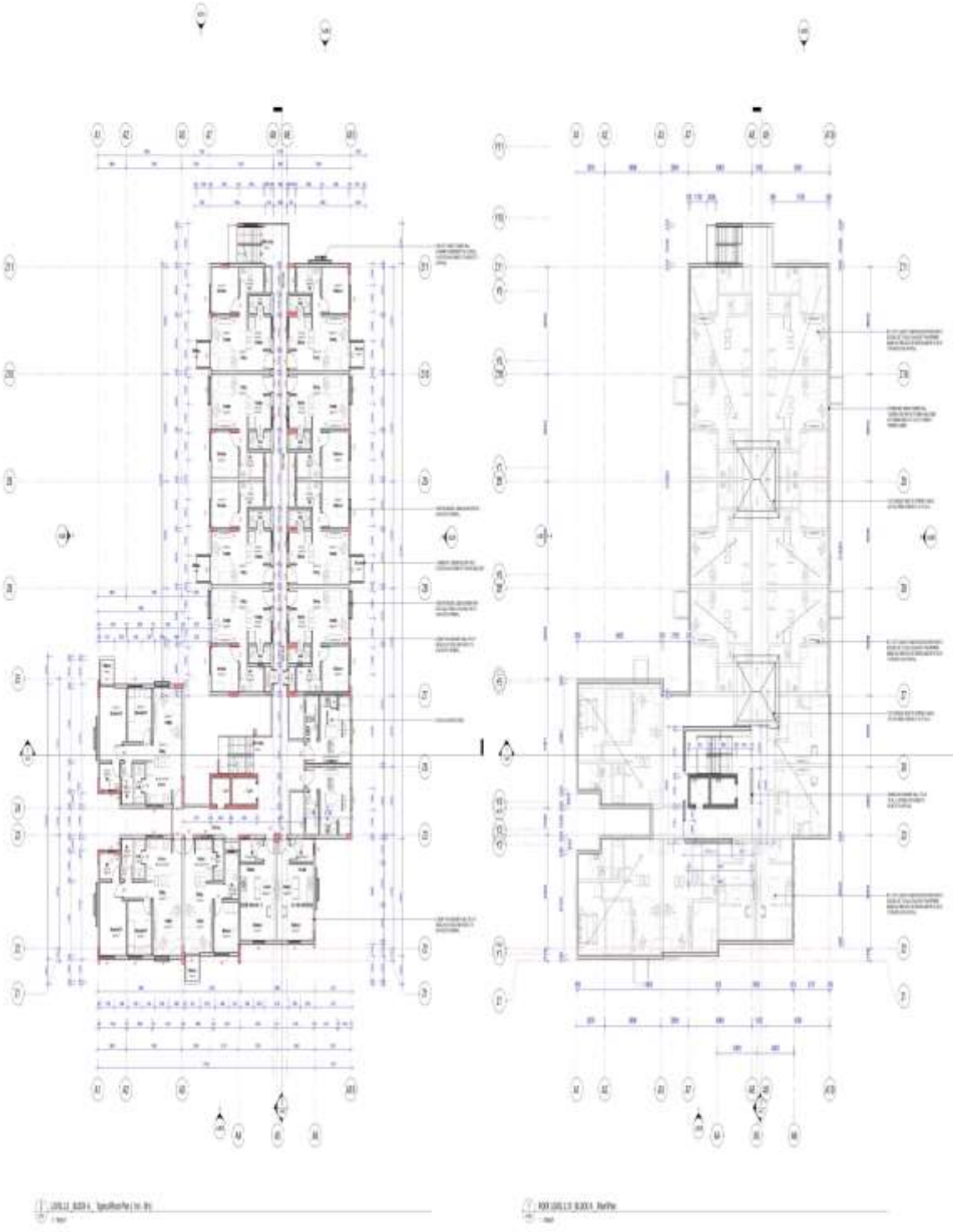


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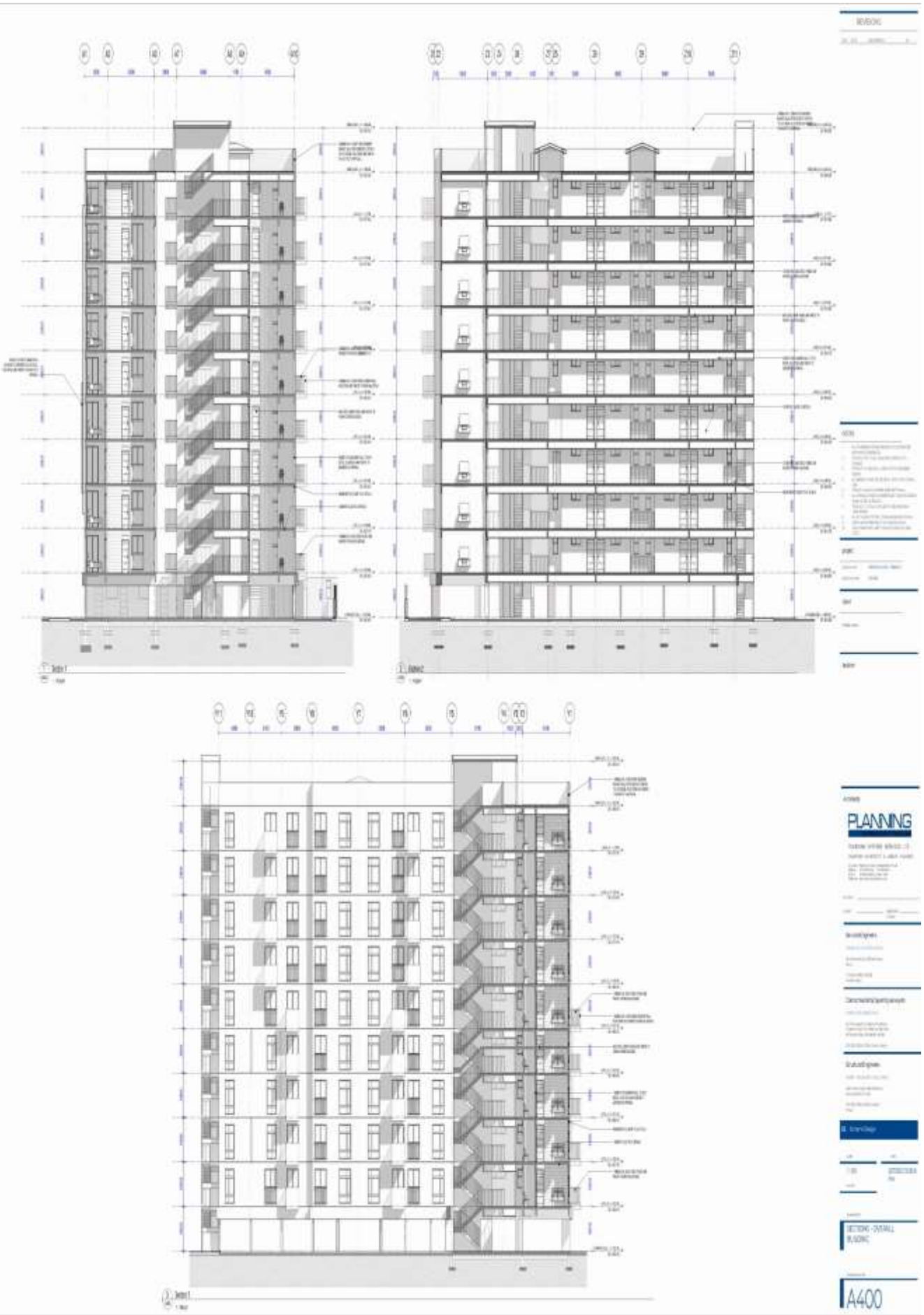
PLANNING
A400

ANNEXURE 2:LAND OWNERSHIP DOCUMENTS

Form LRA 21 (r.31(2))

REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

THE LAND REGISTRATION (GENERAL) REGULATIONS, 2017

Serial Number 0000330

REPUBLIC OF KENYA

Certificate of Title

Title No. NAIROBI/BLOCK66/6009

Area 0.56 HA (APPROXIMATE)

This is to-certify that .....

KANARE LIMITED - PVT-AAAGPO7

.....

is (are) now registered as the absolute proprietor(s) of the land comprised in the above-mentioned title, subject to the entries in the register relating to the land and such of the overriding interests set out in section 28 of the Land Registration Act as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the NAIROBI ..... Land Registry this 26th day January, 2023

Registrar

Name ..... Stamp No. .....

Signature .....

J. M. Mwinzi 240

THE REPUBLIC OF KENYA

No. **PVT-AAAGPO7**

CERTIFICATE OF INCORPORATION

I hereby **CERTIFY** that,

KANARE LIMITED

is on this date **13 April 2017** Incorporated under the Companies Act, 2015 and that the Company is a **PRIVATE COMPANY LIMITED BY SHARES.**

.....

Registrar Of Companies

This is a system generated certificate. To validate this document send the word **BRS** to **21546**

KANARE
LIMITED

Kikuyu Road, Dagoretti, Nairobi
P.O. Box 21017 - 00505
E-mail: kanareltd@gmail.com

KANARE LIMITED
P. O. BOX NUMBER 21017-00505
NAIROBI

Date: 31st January, 2023

Keza Development LLP
The Courtyard,
General Mathenge Drive, Westlands
P.O. Box 43233-00100
Nairobi

Attention: Samuel Kariuki

Advance copy via E-mail: sk@mividahomes.com

Dear Sirs,

Keza by Mi Vida – Consent and Confirmation of No Objection

We refer to the duly executed sale agreement between Kanare Limited and Keza Development LLP (Keza) (the Agreement) pursuant to which we have agreed to sell and Keza has agreed to buy the parcel of land known as **NAIROBI BLOCK 66/6009** (formerly known as DAGORETTI/RIRUTA/6009) (the Property).

In our capacity as the legal and registered owner and pending the transfer of title to the Property to Keza, we confirm that we have no objection and where appropriate have given the necessary consents and licenses to Keza for the purposes of:

a) accessing the Property for planning/survey purposes and/or any other purposes related to the proposed residential development on the Sale Property in accordance with its rights under the Agreement;

b) marketing and selling the apartments proposed to be constructed in the residential development on the Property, entering into letters of offer and agreements for sale in respect of the sale of the apartments with prospective purchasers and receiving initial deposits on account of the purchase price of those apartments; and

c) undertaking certain works on the Sale Property including the construction of a marketing billboard/hoarding around the cadastral boundaries of the Sale Property.

We confirm that this letter and the contents thereof remain valid for a period of twelve (12) months from the date hereof.

Yours faithfully,

.....

Ms. Serah Wairimu Mukiri
Director
For and on behalf of Kanare Limited.

ANNEXURE 3: CHANGE OF LAND USE DOCUMENT

FORM PLUPA/DC/8 **SN: SUB-005885**

City Hall Way, City Hall
www.nairobi.go.ke

P.O.Box 30075-00100
Nairobi, KENYA

NAIROBI CITY COUNTY

THE PHYSICAL AND LAND USE PLANNING ACT (No. 13 of 2019)

Registered Number of Application **PLUPA-COU-000865-N**

NOTIFICATION OF APPROVAL OF APPLICATION

TO **Kanare Limited**

Through **Eric K. Mumbi**
Physical Planner, Reg. No: 0191

Your application number as above, submitted on **28th, February 2023**

For permission to carry out **Change Of Use - New** from **Agricultural** to **Multi dwelling units (Apartments)** on

L.R. / Parcel No **DAGORETTI/RIRUTA/6009** with Coordinates **-1.2817, 36.7334**

Situated in **Dagoretti-Riruta, Riruta** in **Dagoretti South** Sub-county

Along **0.56** has been **APPROVED** on **23rd, March 2023**

By the Urban Planning Technical Committee tabled under Item No **94**

For the reasons/subject to the conditions appended overleaf.

Date **23rd, March 2023**

For CECM Built Environment and Urban Planning

CC:
The National Land Commission, Nairobi
The Land Registrar
The Director General - Physical and Land Use Planning, Nairobi
The Director of Surveys, Nairobi
The Secretary, State Department of Lands, Ministry of Lands & Physical Planning

ANNEXURE 4:PROJECT BILL OF QUANTITIES

Tower Cost
CONSULTANTS LIMITED
Quantity Surveying, Project Management,
Contracts and Construction Claims Consultancy

AK- 119 House No. 3
Slip Road off Waiyaki way,
P.O. Box 27555 - 00506,
Nairobi - Kenya.
+(254) 0786 869 816
info@towercost.co.ke
www.towercost.co.ke

9th March 2023.

Keza Development LLP.
P.O. Box 43233-00100
Nairobi, Kenya.

Dear Sir,

RE: PROPOSED RESIDENTIAL DEVELOPMENT, RIRUTA, OFF NAIVASHA ROAD FOR KEZA DEVELOPMENT LLP

PROJECT COST ESTIMATE.

Refer to the above project.

We have prepared Cost Estimates for the above project and amounts to Kenya Shillings *Eight Hundred Sixty Three Million, Two Hundred Twenty Nine Thousand, Six Hundred and Thirty Cents Fifty Four.* ***(Kshs. 863,229,630.54)*** as per attached breakdown.

Please note that these figures are inclusive of 16% VAT and are exclusive of professional fees and loose furniture.

We do trust the above is in order.

Yours faithfully,

TOWER COST CONSULTANTS LTD.
QUANTITY SURVEYORS AND BUILDING ECONOMISTS
P.O. Box 27555 - 00506,
NAIROBI.

Joseph Kungu
For: Tower Cost Consultants Ltd

Joseph Kungu (B.A. Bldg. Econ (Hons)) Reg. Q. S.: MAAK (QS) M.C.I. (Arb)

ANNEXURE 5:EIA/EA LICENCE OF THE FIRM

FORM 7 (r.15(2))

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/18576

Application Reference No: NEMA/EIA/EL/24423

M/S **SAFE ENVIRONMENT CONSULTANCY LIMITED**
(individual or firm) of address
P.O. Box 1975 - 00100 NAIROBI

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts** registration number **1318**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **1/13/2023** Expiry Date: **12/31/2023**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001:2015 Certified

ANNEXURE 6:EIA/EA LICENCE OF THE LEAD EXPERT

FORM 7 (r.15(2))

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/18577

Application Reference No: NEMA/EIA/EL/24428

M/S **CATHERINE NJERI WAWERU**
(individual or firm) of address
P.O. Box 1975 - 00100 NAIROBI

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
General
registration number **1298**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **1/13/2023** Expiry Date: **12/31/2023**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001:2015 Certified

REPUBLIC OF KENYA

IN THE MATTER OF THE OATHS AND STATUTORY DECLARATIONS ACT

CHAPTER 15 OF THE LAWS OF KENYA

AFFIDAVIT

I, **CATHERINE NJERI WAWERU also known as CATHERINE NJERI MUIGAI,** a resident of Nairobi within the Republic of Kenya and of Post Office Box Number, 1975-00100 Nairobi do hereby make oath and state as follows:-

1. **THAT** I am an adult female of sound mind and thus competent to swear this Affidavit.

2. **THAT** I am a Kenyan citizen and the holder of National Identity Card No. 21735255.

3. **THAT** the name appearing on my former National Identity Card is **CATHERINE NJERI WAWERU** while in my current National Identity Card my name is cited as **CATHERINE NJERI MUIGAI.**

4. **THAT** I changed my name from **CATHERINE NJERI WAWERU** to **CATHERINE NJERI MUIGAI** and applied for a new National Identity Card which was issued on 25th August 2014.

5. **THAT** I swear this Affidavit conscientiously confirming that **CATHERINE NJERI WAWERU** and **CATHERINE NJERI MUIGAI** are all my names and refer to one and the same person the same being true to the best of my knowledge, information and belief and in accordance with the Oath and Statutory Declaration Act Chapter 15 Laws of Kenya.

SWORN BY THE SAID
CATHERINE NJERI WAWERU
also known as CATHERINE NJERI MUIGAI)
AT NAIROBI)
This day of 2015)
)
BEFORE ME)
)
)
COMMISSIONER FOR OATHS)

Deponent

JOSIAH M M OMOSA
ADVOCATE & COMMISSIONER FOR OATHS
P.O. Box 41703-00100

DRAWN & FILED BY:
Mwangi & Guandaru
Advocates
Vision Plaza 3rd floor, room 16
P.O Box 55903-00200
Mombasa Road
NAIROBI.

ANNEXURE 7:MINUTES OF STAKEHOLDERS' ENGAGEMENT MEETING AT KEZA PROJECT SITE

MINUTES OF STAKEHOLDERS' MEETING FOR CONSULTANCY ON ENVIRONMENTAL IMPACT ASSESSMENT STUDY OF RIRUTA'S URBAN OASIS HOUSING PROJECT

HELD ON FRIDAY 14TH APRIL 2023 AT RIRUTA'S URBAN OASIS PROJECT SITE ALONG NDWARU ROAD IN RIRUTA LOCATION OF NAIROBI COUNTY

PRESENT: Refer to the signed attendance list attached

AGENDA

1. Preliminaries
2. Introduction of Environmental Impact assessment study
3. Presentation of the project
4. Issues raised by the stakeholders
5. A.O.B

MIN 1: Preliminaries

The meeting was called to order at 12.00 Pm and started with a word of prayer .

The Assistant Chief Madam Orpha Bosibori welcomed everyone to the meeting and asked the stakeholders to introduce themselves. She also welcomed the consultants and asked them to introduce themselves and present the agenda of the meeting.

MIN 2: Introduction of Environmental Impact assessment study

The Lead Expert Catherine Muigai made the following presentation in Swahili.

"Environment is the pillar of the order of human life because it is on the environment that we build our houses, we build roads, we do business, we grow food, we get drinking water, children play on, it gives us air and many other things. In short, we need a better environment for human life.
In 1999, our country Kenya passed a law called Environmental Management and Coordination Act. That law requires certain projects that are listed in that Act to undergo an environmental impact assessment by professionals registered by NEMA.
The assessment of the projects is to ensure that all projects comply to environmental laws.
NEMA issued a procedures to be followed by environmental experts when they review projects in 2003, and one of those procedures is to consult stakeholders of the projects and those who live near the proposed project. And that is why we have come today to inform you about the Riruta's urban Oasis project, to take your opinion and your suggestion which we will put in a report that will be sent to NEMA"
The Lead Expert invited the project director Mumo Kianga to introduce the project to the stakeholders.

Min 3:Project description

Mumo started by introducing the team of staff from Keza Development LLP who were at the site and invited Kennedy Otieno to make a presentation of the project to the stakeholders. Kennedy Otieno made the following presentation;

"We have done research and we have realized that we have shortages of houses. The government is working on increasing affordable housing . Keza has come to fill the gap that is there in housing. The land for the project is from the upper side to the lower side where Ndwaru road is located. Keza Development LLP will ensure that the residents get an opportunity to own the houses we are developing.
The project will lead to improvement of livelihoods through growth of businesses in the area such as transport, provision of employment to plumbers, masons and electricians. The project will give employment to young people who have national Identification card to reduce idleness which leads to delinquent behaviors."

Mumo clarified that the company who owns the project is Mi Vida while Keza Development LLP are the developers. He went ahead to inform the stakeholders that development of the project could not happen without their support.

Min 3:Issues raised by the stakeholders

Name	**Issues raised**	**Response by Keza Development LLP**
Francis Gichuhi	We have a problem of illegal connection of sewer and other people are even connecting the sewer to the river.	**Mumo Kianga:** We have a problem with sewer lines in Nairobi and the old sewer lines are leaking and they have not been repaired.
Caroline Wanjiru	Will there be cleaning of the sewer line because people have been blocking it with papers and plastics?	**Kennedy Otieno**: When we will be connecting our project to the sewer lines, we will visit Nairobi City County for authorization and for them to unblock any blocked sewer lines in the area.
Wesley Marwa	Are the houses for sale or rental ? Is Keza reliable?	**Mumo Kianga:** We have built so many houses in so many places and we have a good record of reliability. The houses are for sale but the people who are buying the houses can opt to rent them out.
Orpha Bosibori	Are the houses affordable or they are for specific people.	**Kennedy Otieno:** The houses are affordable and one could approach their chama for

		money to purchase the houses. We have house of as low as 2,000,000.00 each . We are allowing buyers to make monthly payment. You can even buy one house as a chama and then share the proceeds from rent charged from the houses.
George Ogago- Chief	Will there be jobs for the casuals and professionals from the area?	**Mumo Kianga:** Job opportunities will be provided to the locals depending on their qualification.
Simon Muruga	Kenya is a corrupt country. Which restrictions will you put to ensure that the poor people afford the houses and not only the rich can afford?	**Kennedy Otieno:** National housing has restrictions of those getting affordable housing depending on their income. For you to purchase you will need to bring your identification documents e.g the identification card and pin.

MIN 5: Any Other Business

The lead Expert asked the stakeholders to register themselves in the attendance register provided and those who had issues of concern that they were unable to raise to write them down on the questionnaires provided.

There being no other business, the meeting ended at 1:30Pm with a word of prayer .

Minutes submitted by: Catherine Muigai

NEMA Registered EA/EIA Lead Expert

.....

Minutes approved by: George Ogago,

Chief Riruta Location

SENIOR ASSISTANT CHIEF
SATELLITE SUB-LOCATION
RIRUTA LOCATION
DAGORETI SUB-COUNTY

9/5/23

.....

ANNEXURE 8: SELECTED STAKEHOLDERS' QUESTIONNAIRE

Stakeholder's Questionnaire Form

Keza development LLP is a housing development agency which intend to construct 2 blocks of apartments on a parcel of land title number Nairobi/Block/66/6009 in Riruta location of Nairobi County. Safe Environment Consultancy Ltd has been contracted to conduct an Environmental and social impact assessment study of the project.

This is a requirement by the Environmental Management and Coordination Act, 1999 (rev.2015) and the Environmental (Impact Assessment and Audit) regulations, 2003. Stakeholder's participation and consultation is necessary during environmental and social impact assessment study exercise as it allows the stakeholders to give their views, opinions and concerns regarding the project. As a stakeholder of the project, we invite you to provide the following information and to give your objective opinion, views and concerns on the project.

1. Benefits of the project

The school can get learners from the project.
The affordable houses can anable the parent to pay the school fees with easy.
The project will enlighten the air.

2. Concerns of the project

Insecurity
Overpopulation of the air.
Can increase the crime rate.
It can create a lot of truffic jam.

3. Recommendation for the project.

- The houses should be affordable and have a flexible payment plan.
- The security of the proposed area of the project should be worked on.

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ✓ 2. Doing Business near the proposed site ✓

3. Working near the project site ✓ 4.Other .....

Name: Collins Auma Nabe **ID No:** 28250561

Signature: [signature] **Date:** 20th April 2023

Occupation: Teacher **Location:** Nduaru Road of Nairobi Road.

Mobile Phone No 0701213262 / 0795209053 **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Benefits of the project

✓ Employment Creation.
✓ Development and improved infrastructure.

2. Concerns of the project

✓ Sewage disposal.

3. Recommendation for the project.

✓ It is a good idea and we hope it will be of benefit to the Community.

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ✓ 2. Doing Business near the proposed site ✓

3. Working near the project site..... 4.Other .....

Name: Benard Kwoni **ID No:** 33987968

Signature: **Date:** 14/02/2022

Occupation: Rider **Location:** Riruta

Mobile Phone No 0115463691 **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Benefits of the project
   Business will flourish, creation of employment
   Creation of affordable housing
   growth of church membership
   The project will boost economy of the area
2. Concerns of the project
   increase in solid waste, overload of electric power which is inadequate, traffic jam, damage of Ndwaru road due to heavy construction trucks transporting materials
3. Recommendation for the project.
   Provide employment to the local community through the church
   give good payment plan for the houses to enable many local community acquire houses

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site .... 2. Doing Business near the proposed site..................

3. Working near the project site........................4.Other VICAR A.C.K. RIRUTA IHESI

Name: REV. ISAAC [illegible] ID No: 24012939

Signature: [signature] Date: 20th April 2023

Occupation: [illegible] Location: RIRUTA

Mobile Phone No. 0724162285 County: NRB.

ANGLICAN CHURCH OF KENYA RIRUTA NGETI PARISH 20 APR 2023 P.O. BOX [illegible] CHURCH, NDWARU ROAD

Thank You for Your Input

(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Benefits of the project

At least provide opportunity Fo so many who are not having job in our community

2. Concerns of the project

Ensure the environment will stay clean and healthy fo the surrounding
- Always listen to the duplex and concern of those around

3. Recommendation for the project.

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ...✓... 2. Doing Business near the proposed site.....

3. Working near the project site..... .....4.Other .....

Name: Mercy wanjiru **ID No:** 21776353

Signature: Mercy **Date:** 16th April

Occupation: Business **Location:** Riruta

Mobile Phone No..... **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Benefits of the project

- Growth of population of learners

2. Concerns of the project

- Noise pollution - during construction
- Security - during construction
- Over load on sewer line
-

3. Recommendation for the project.

- Please put wall fence before commencement of project
- Consider excavation during school holiday
- Ensure Havard trees are not affected

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ..... 2. Doing Business near the proposed site.....

3. Working near the project site..... 4.Other School next to property

Name: Pamela Grania **ID No:** 21871350

Signature: [signature] **Date:** 20/4/2023

Occupation: Teacher **Location:** Kikuyu RD - Havard School

Mobile Phone No. 0720487442 **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Benefits of the project

to create jobs
to provide residence
Development.
urban growth.

2. Concerns of the project

if it has any effect on people around
to check if the environment is conducive

3. Recommendation for the project.

to provide job
to promote youths around the area.

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ...X... 2. Doing Business near the proposed site.....

3. Working near the project site..... .....4.Other .....

Name: Josephine Andeso Nicholla **ID No:** 28328612

Signature: ..... **Date:** 14th April 2023.

Occupation: Sales & Marketing **Location:** Hawaru

Mobile Phone No. 0706802883 **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Benefits of the project

Growth of the Urbans.

Job opportunities.

2. Concerns of the project

If I break my leg on the site what is my benefit.

3. Recommendation for the project.

To give job opotionities to the nearest residens.

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ✓ 2. Doing Business near the proposed site.....

3. Working near the project site..... 4.Other .....

Name: Margaret Irene **ID No:** 31497985

Signature: **Date:** 14/04/2023

Occupation: Sale rep **Location:** ndwara road

Mobile Phone No 0715532408 **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Benefits of the project

- Creates job opportunities
- Development & growth to the society
-

2. Concerns of the project

It provide opportunity to the innocent Kenyan to earn an living.

3. Recommendation for the project.

To provide many job opportunities to young people

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ✓ 2. Doing Business near the proposed site.....

3. Working near the project site..... 4.Other .....

Name: TERESIA WANJIKU NJOROGE **ID No:** 29432695

Signature: **Date:** 12/4/2023

Occupation: Sales/Marketing **Location:** MDUARU

Mobile Phone No. 0707777157 **County** NAIROBI

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Positive view of the project
   It will create employment to the youths
2. Concerns of the project
   None
3. Recommendation for the project.
   It should be approved

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site yes 2. Doing Business near the proposed site yes

3. Working near the project site ..... 4. Other .....

Name: Silva Mbaga **ID No:** Waiting card

Signature: **Date:** 17/3/2023

Occupation: student **Location:** Riruta

Mobile Phone No. 0717315904 **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

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1. Positive view of the project
   Many people will get a job
2. Concerns of the project
   No Concerns
3. Recommendation for the project.
   The project is should approved

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ..... 2. Doing Business near the proposed site.....
3. Working near the project site..YES..... 4.Other .....

Name: [illegible] **ID No:** OP 0349288

Signature: [signature] **Date:** 17.3.2023

Occupation: SECURITY OFFICER **Location:** RIRUTA

Mobile Phone No. 0793622693 **County** [illegible]

Thank You for Your Input
(Safe Environment Consultancy Ltd)

Stakeholder's Questionnaire Form

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1. Positive view of the project
   The Project is important to us because it will lead to employment as a labour
2. Concerns of the project
   It may cause an increase in water demand
3. Recommendation for the project.
   for me I recommend for the Project to be approved

Relationship with Keza Housing project (Tick):

1. Residing near the proposed project site ..... 2. Doing Business near the proposed site.....
3. Working near the project site..... .....4.Other .....

Name: Jemimah Wafula **ID No:** 35672843

Signature: [signature] **Date:** 17/03/2023

Occupation: Security guard **Location:** RIRUTA

Mobile Phone No. 0748493822 **County** Nairobi

Thank You for Your Input
(Safe Environment Consultancy Ltd)

TRANSPORT REIMBURSEMENT

STAKEHOLDERS' MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT STUDY OF RIRUTA'S URBAN OASIS HOUSING PROJECT

VENUE: RIRUTA'S URBAN OASIS PROJECT SITE ALONG NDWARU ROAD DATE: 14TH APRIL 2023

	NAME /JINA	ID NUMBER /NAMBA YA KITAMBULISHO	TELEPHONE NUMBER /NAMBA YA SIMU	SIGNATURE /SAHIHI
1	GEORGE OGAMO	8627605	0722226364	
2	ORPHA BOSIBORI ARORA.	14545032	0724888959	
3	CAROLINE WANJIRU MUHORO	26758HQ	0701325406	
4	WILSON MWANIGI	24960892	0723169232	
5	Edgar . ENEYAR	40827568	0796578609	
6	MERCY WANJIRU NYAGO	2176353	0716347635	
7	MARY WANJIRU NYAMURI	33078694	0719221295	
8	EVALYNE WAYUA MUTUKU	29095724	0716145955	
9	JANE WANJIKU Mjoroge	24496796	0727303697	
10	AGNETA MINAYO	20625220	0713637482	
11	HELLEN NDUTA	36320100	0711235502	
12	purity obiero	36766720	0794010124	
13	LUCY WAMBUI WAITHIRA	23913249	0723626297	
14	ESTHER Wanjiru Gikau	24206099	0723136236	

15	KELVIN R. EDWARD	28215242	0716752070	
16	Mercy Kwitimu	32589131	0704468816	
17	KENNEDY SARIA	39163153	0725677911	
18	Benard Kweni	33987968	0715463691	
19	Francis Cichobi	29117646	0723907945	
20	SIMON MURUGA	21676065	0722997043	
21	Robert Mungai	35527335	0703862165	
22	WESLEY MANWA	28625670	0110426238	
23	SAMWEL KAMAU	27725161	0702908221	
24	Mary Waitimu	25764430	0715770667	
25	Mulunge NZOKA	29274354	0758676921	
26	ELIZABETH wambui	35521006	0765365637	
27	DAVID KARANJA	30975310	0700361246	
28				
29				
30				

TRANSPORT REIMBURSEMENT

STAKEHOLDERS' MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT STUDY OF RIRUTA'S URBAN OASIS HOUSING PROJECT

VENUE: RIRUTA'S URBAN OASIS PROJECT SITE ALONG NDWARU ROAD DATE: 14TH APRIL 2023

	NAME /JINA	ID NUMBER /NAMBA YA KITAMBULISHO	TELEPHONE NUMBER /NAMBA YA SIMU	SIGNATURE /SAHIHI
1	LUMO KIANGA	25059031	0717186320	
2	KENNEDY OTIENO	27377538	0722178454	
3	VICILINE ATIEHO	29838322	0706022372	
4	JOHN MBARIA	27309256	0720772108	
5	Diana OKech.	30012558	0711546451	
6	MARIA SILUNGI	32960803	0723270426	
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