ENVIRONMENTAL IMPACT ASSESMENT STUDY REPORT FOR PROPOSED GOLF COURSE HOTEL DEVELOPMENT ON LR NO. KSM/KANYAWEGI/9676 LISUKA VILLAGE, KANYAWEGI SUB-LOCATION, SOUTH WEST KISUMU LOCATION, KISUMU WEST SUB COUNTY, KISUMU COUNTY

(NEMA TOR 382)

GPS COORDINATES: Latitude: -0.113272˚, Longitude: 34.650983˚

Proponent:	**Consultant:**
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MARCH, 2022

Document Authentication

This Environment and Social Impact Assessment (ESIA) Study for the above mentioned project have been prepared by Gomake Consultancy Company Ltd (NEMA Registered and licensed EIA/EA Firm of Experts) in consultation with the Rambara Company Ltd (Project Proponent).

This ESIA has been done with reasonable skills, care and diligence in accordance with the Environmental Management and Coordination Act 1999 and the Environmental (Impact Assessment and Audit) Regulations 2003.

We the undersigned, certify that the particulars given in this ESIA Study Report are correct, complete, accurate and righteous to the best of our knowledge and will be sufficient to provide adequate and informative Environmental and Social Impact Assessment on the Rambara Company Ltd Development.

PROJECT PROPONENTS

RAMBARA COMPANY LTD
P.O. BOX 897, 40100
Kisumu, Kenya

Signature……Date……

EIA/EA FIRM OF EXPERTS

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Signature……Date……

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Abbreviations

CIDP	County Integrated Development Plan
Covid-19	Corona Virus Disease
CSR	Corporate Social Responsibilities
EA	Environmental Audit
EDL	Effluent Discharge License
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EMP	Environmental Management Plan
EMS	Environmental Management System
ETP	Waste water treatment plant
LTP	Leachate Treatment Plant
Ha	Hectare
ICT	Information Communication Technology
ILO	International Labour Organisation
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KES	Kenya Shillings
KISIP	Kenya Informal Settlement Improvement Projects
KPLC	Kenya Power & Lighting Company Limited
KRB	Kenya Roads Board
KUP	Kisumu Urban Projects
KURA	Kenya Urban Roads Authority
KWS	Kenya Wildlife Services
LPG	Liquefied Petroleum Gas
LR No	Land registration number
LVEMP II	Lake Victoria Environmental Management Project
MDG's	Millennium Development Goals
MW	Mega Watts
NCA	National Construction Authority
NEAP	National Environment Action Plan
NEMA	National Environmental Management Authority
OSHA	Occupational Safety and Health Act
PCM	Public Consultation Meeting
pH	Potential of Hydrogen
PPE	Personal Protective Equipment
TOR	Terms of Reference
UNCED	United Nations Conference on Environment and Development
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
WRA	Water Resources Authority

Non-Technical Summary

Introduction

The Proponent, Rambara Company Ltd (RCL) has proposed to implement Proposed Golf Course Hotel Development on LR No. KSM/KANYAWEGI/9676 Lisuka Village, Kanyawegi Sub-Location, South West Kisumu Location along the shores of Lake Victoria, Kisumu County. The proposed development consist of a five storey building that will host offices, auditoriums, conference & meeting rooms, shops and restaurants, shoreline protection and landscaping and waste water treatment plant including associated infrastructure such as drainage system and access roads.

The proponents' decision to develop the Proposed Golf Course Hotel Development is largely fueled by the high demand for conference tourism at the Lakeside City of Kisumu and the larger western Kenya. With a range of modern conference facilities and break away rooms, the proposed project is set to attract key regional and international meetings thus boosting business travel and conference tourism and the potential profits/return to investments.

To comply with the requirements of the Environmental Management and Co-ordination Act (EMCA) of 2015 and the Environmental Impact Assessment and Audit Regulations 2003, the project proponent has commissioned Gomake Consultancy Company Ltd to prepare an Environmental and Social Impact Assessment (EIA) Project Report. The environmental study was commissioned in January, 2022 after the approval of the TOR. Public consultation process was done during the project report phase and repeated during the full study phase including consultation with WRA as the lead agency in charge of the riparian land that borders the project site along Lake Victoria.

Terms of Reference

The Terms of Reference for this assessment are based on the Environmental Impact Assessment and Audit Regulations dated June 2003. The TOR was submitted to NEMA and given reference number TOR 382 which was reviewed and approved by NEMA on the 20th January 2022, copy of which is attached to this report.

Project location and scope

The proposed site is located in Kanyawegi Village Kisumu South West Location, Kisumu West Sub County, Kisumu County on LR No. KSM/KANYAWEGI/9676 registered in the name of the Proponent, Rambara Company Ltd. See Appendices for a copy of land ownership document.

The site is located on coordinates: **Latitude: -0.113272˚, Longitude: 34.650983**˚.

The building shall consist of the following facilities:

Ground Floor

- Auditorium (1no.)
- Offices (3no.)

- Restaurant, dining and kitchen (1no.)
- Shops
- Exhibition and Multipurpose spaces
- Toilets (both male and female)
- Parking, access and service roads outside the building.

1st Floor

- Auditorium (1no.)
- Conference rooms (5no.)
- Restaurant (1no.)
- Dining Terrace area (1no.)
- Executive lounge
- Board meetings (2no.)
- Toilets (both male and female)

2nd Floor

- Conference rooms (3no.)
- Terrace (2no.)
- Offices (3no.)
- Toilets (both male and female)

3rd Floor

- Conference rooms (2no.)
- Terrace (1no.)
- Toilets (both male and female)

4th Floor

- Conference rooms (1no.)
- Terrace (1no.)
- Toilets (both male and female)

5th Floor

- Terrace (2no.)

The floors will be connected with stair cases and lifts. The facility will use electricity as a source of power (KPLC) and the main water supply will be from the borehole on site. The water will be stored in elevated tanks. The proponent will however harvest rain water and storage will be on an underground tank.

Since the project area is not connected to the sewer line, the proponent will construct a wastewater treatment facility within the project site to serve the Golf Course Hotel project and other anticipated developments.

Legal and regulatory compliance

Rambara Company Ltd is committed to comply with all applicable legal provisions and regulations which have been reviewed in the report:

- The Constitution of Kenya (2010)
- Environmental Management & Coordination Act, 1999 (Amended 2015) and Subsidiary Regulations
- Environmental Management and Co-ordination (Waste Management) Regulations 2006
- Environmental (Impact Assessment and Audit) Regulations, 2003
- EMCA (Water Quality) Regulations, 2006
- EMCA (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009
- Environmental Management and Coordination (Air Quality) Regulations, 2014
- Land Act 2012
- Physical and Land Use Planning Act, 2019
- The Public Health Act (Cap 242)
- The Occupational Safety and Health Act, 2007
- The Water Act, 2016 and The Water Resources Management Rules, 2007
- The County Governments Act 2012
- Employment Act 2007
- Sustainable Development Goals (SDGs)

Public Participation

Legal Notice of 101 of June 2003 requires that all environmental and social assessment process in Kenya to incorporate Public Consultation.

PCMs – The Consultant in collaboration with the national government led by the area Chief carried out public participation on the proposed Golf Course Development project. The meetings were held at the project site on two different days, one during the project report level on 4th November 2021 and the other one during the full study level on the 18th February 2022. In their consultations, the community sensitization meetings targeted in general all community members within the project area

The meeting minutes capturing the respondents views/opinions and suggestions are attached to this study report.

Project Impacts:

Construction phase

Project impacts and their mitigation measures have been discussed in the report and they include:

- Procurement of construction materials:
- Employment opportunities
- Enhancement of local economy / More cash in circulation
- Occupational health and safety hazards
- Energy utilization:

- Water Utilization
- Waste production:
- Influx of construction workers into the area:
- Construction traffic:
- Archaeological findings:

Operation phase

- Increased pressure on infrastructure – Stressed up service provision
- Pollution – Environmental Degradation
- Drain blockages – Back flooding
- Vector and rodents breeding grounds – Vulnerability to diseases
- Electricity consumption – pressure on supply
- Reduction in biodiversity in the area due to altered habitats
- Destruction of wetlands
- Limitation of grazing land for animals
- Reduction of area of arable land for food crops
- Possible changes in soil quality / soil erosion
- Possibility of human disease outbreaks (e.g. cholera) due to poor effluent and sewage disposal
- Employment opportunities
- Occupational health and safety hazards
- Improvement of infrastructure and social amenities through CSR activities
- Water supply and consumption

Decommissioning phase Impacts

- Solid Waste Generation
- Dust
- Noise and Vibration
- Labour work
- Occupational Health and Safety Hazards

Project Alternatives

Project alternatives discussed in the report include:

- Site alternative
- Alternative Design and project phasing
- Alternatives to Technology and Construction Materials
- "No Project" Alternatives

Conclusion

This ESIA Study Report has been prepared to provide sufficient and relevant information on the proposed project to enable NEMA to establish whether activities of the project are likely to have significant adverse environmental impacts. Mitigation measures have been proposed for identified impacts in this report and an Environmental Management Plan

(EMP) for the implementation of the proposed measures has been presented. The EMP presented in this report is a tool to be used by the Project Team during the construction, hand-over and operation periods.

1. INTRODUCTION AND SCOPE OF STUDY

1.1 Introduction

The Proponent, Rambara Company Ltd (RCL) has proposed to implement Proposed Golf Course Hotel Development on LR No. KSM/KANYAWEGI/9676 Lisuka Village, Kanyawegi Sub-Location, South West Kisumu Location along the shores of Lake Victoria, Kisumu County. The proposed development consist of a five storey building that will host offices, auditoriums, conference & meeting rooms, shops and restaurants, shoreline protection and landscaping and waste water treatment plant including associated infrastructure such as drainage system and access roads classified by NEMA as medium risk projects under tourism and related infrastructure and shopping centres, commercial centres and complexes, business premises, shops and stores not exceeding ten thousand square meters.

The project was however upgraded to a full study considering the location of the project and it needed a wider public consultations.

The proponents' decision to develop the Proposed Golf Course Hotel Development is largely fueled by the high demand for conference tourism at the Lakeside City of Kisumu and the larger western Kenya. With a range of modern conference facilities and break away rooms, the proposed project is set to attract key regional and international meetings thus boosting business travel and conference tourism and the potential profits/return to investments.

1.2 Background and Rational of the EIA

To comply with the requirements of the Environmental Management and Co-ordination Act (EMCA) of 2015 and the Environmental Impact Assessment and Audit Regulations 2003, the project proponent has commissioned Gomake Consultancy Company Ltd to prepare an Environmental and Social Impact Assessment (EIA) Project Report. The environmental study was commissioned in January, 2022 after the approval of the TOR. Public consultation process was done during the project report phase and repeated during the full study phase including consultation with WRA as the lead agency in charge of the riparian land that borders the project site along Lake Victoria.

1.3 Scope

As a requirement by the Environmental Management and Coordination (Amendment) Act 2015, of Kenya, a project proponent is required to undertake an Environmental Impact Assessment study before undertaking any project highlighted in Schedule 2 of the Act. This study undertakes to fulfil this requirement. This study is necessary at the planning stages of the undertaking to ensure that significant impacts on the environment are taken into consideration during the design, construction, operation, and decommissioning of the facility.

The project scope included literature review; detailed and updated description of the project design and proposed implementation schedule, costs, as well as suitable alternative

options; an in-depth analysis of the environmental and social baseline conditions; an outline of policy, legal and institutional framework governing the sector with specific focus on agro-processing; inclusive public participation and meaningful stakeholder engagement; establishment of details of significant environmental and social impacts associated with the construction, operation, decommissioning or after-use plans and post-decommissioning of the project; recommend appropriate mitigation measures for all adverse environmental and social impacts and enhancement of the benefits; and develop an Environmental and Social Management Plan (ESMP) for all the project's phases giving specific actions, responsibilities, cost estimates, timeframes and monitorable indicators.

1.4 Terms of Reference

The Terms of Reference for this assessment are based on the Environmental Impact Assessment and Audit Regulations dated June 2003. The TOR was submitted to NEMA and given reference number TOR 382 which was reviewed and approved by NEMA on the 20th January 2022, copy of which is attached to this report.

1.5 Methodology

After preliminary visits to the proposed site, the following were carried out in the preparation of this document:

i) Observations, discussions with stakeholders and lead agencies
ii) Documentary review of the nature of the proposed project;
iii) Policy and legal frameworks, social and environmental setting of the area;
iv) Checklists were prepared to identify possible environmental and human safety issues, photography, etc;
v) Review of the project designs and implementation plans and comprehensive discussions with the project proponent;
vi) Report writing

2. PROJECT DESCRIPTION

2.1 Project Objectives

The primary objective of this Project is to provide a modern world class waterfront development with a range of modern conference facilities and break away rooms is set to attract key regional and international meetings thus boosting business travel and conference tourism and the potential profits/return of investments. The development will also create opportunities to the small and medium enterprise business people to do business.

2.2 Proposed Project Components

The building shall consist of the following facilities:

Ground Floor

- Auditorium (1no.)
- Offices (3no.)
- Restaurant, dining and kitchen (1no.)
- Shops
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The floors will be connected with stair cases and lifts. The facility will use electricity as a source of power (KPLC) and the main water supply will be from the borehole on site. The water will be stored in elevated tanks. The proponent will however harvest rain water and storage will be on an underground tank.

Since the project area is not connected to the sewer line, the proponent will construct a wastewater treatment facility within the project site to serve the Golf Course Hotel project and other anticipated developments.

2.3 Project Implementation

The project will be implemented in the four phases: design, construction, operation and decommissioning.

2.3.1 Design Phase

This phase is the concept of the planned development and the designing of a structure which was envisaged to be functional and to take care of every environmental concern such as liquid and solid wastes and security. This has already been completed.

2.3.2 The Construction Phase

This phase will be based on the building standards, code and all other relevant regulations applicable in Kenya. All the proposed works will follow standard environmental guidelines, health and safety measures.

The construction of the building walls, foundation, floor pavement, and drainage system, among other component of the project will involve minimal masonry works and related activities. General masonry and related activities will include concrete mixing, plastering, and slab construction, construction of foundation and curing of fresh concrete surfaces. These activities are known to be labour intensive hence may be supplemented by machinery such as concrete mixers.

i) Roofing and sheet metal works

Roofing activities will include laying of iron sheets, and structural steel to the roof and fastening the roofing materials to the roof.

ii) Electrical Works

Electrical work during both construction and operation will involve installation of electrical gadgets and appliances including electrical cables, lighting apparatus, sockets etc.

2.3.3 The Operational Phase

Completion of construction activities will be followed by occupation of the facility by the tenants and visitors to the facility. Both solid and liquid wastes will be produced during this phase of the project. To manage solid wastes (domestic), the proponent will avail litterbins/receptacles within the facility for temporary storage. A NEMA registered solid waste handler will be contracted to manage the solid waste from the site to recycling facilities and to the County approved dumping sites. Liquid wastes from the toilets will be channelled to a waste water treatment plant within the site.

Grounds men will be hired to do repairs, painting and landscaping of open spaces. The activities to be carried out during the operation phase of the proposed project include: occupation of the residential units by the various tenants. The proponent will run and manage the project during its operational phase and ensure that the recommendations in this report and the laid down Environmental Management Plan are adhered to. The facility will be connected to power from the national power grid.

2.3.4 Decommissioning Phase

At the end of the operational life of the building, all the equipment and waste materials from the construction/equipment installation will be removed from the site. The materials that can be reused will be separated and used for other construction work and others disposed of appropriately. The areas not intended for parking of vehicles will be landscaped and planted with beautiful vegetation to improve the aesthetics of the surrounding.

3. BASELINE INFORMATION

3.1 Location

The proposed site is located in Kanyawegi Village Kisumu South West Location, Kisumu West Sub County, Kisumu County on LR No. KSM/KANYAWEGI/9676 registered in the name of the Proponent, Rambara Company Ltd. See Appendices for a copy of land ownership document.

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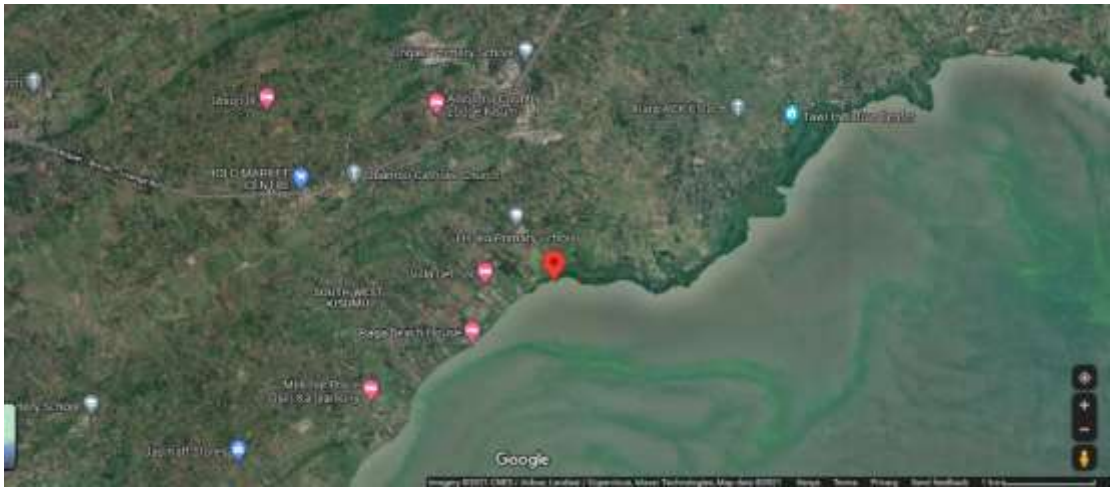


Figure 1: Google map showing location of the facility

(*Source: google earth*)

3.2 Project's surrounding

The proposed project site is located off Kisiany – Bondo Road near Lisuka Primary School in Kanyawegi Village Kisumu South West Location, Kisumu West Sub County, Kisumu County. Surrounding the project are other commercial and residential developments including Villa Del Sol.

3.2.1 WRA Riparian Land Demarcation

According to the water resources management rules 2007, "Unless otherwise determined by a Water Resources Inspector, the riparian land adjacent to a lake, reservoir or stagnant body of water is defined as a minimum of two meters vertical height or thirty meters horizontal distance, whichever is less, from the highest recorded.

Following the above determination, the riparian area for the proposed project land was established from the highest flood level and demarcated using newly installed Beacons on 6th January 2022. The proponent was advised to comply with the requirement that he should not exercise the following proscribed activities highlighted in the seventh schedule of the water resources management rules 2007 within the riparian area:

i) Tillage or cultivation;
ii) Clearing of indigenous trees or vegetation;

iii) Building of permanent structures;
iv) Disposal of any form of waste within the riparian land;
v) Excavation of soil or development of quarries;
vi) Planting of exotic species that may have adverse effect to the water resource
vii) Or any other activity that in the opinion of the Authority and other relevant Stakeholder may degrade the water resource.

During the pegging exercise, the Riparian area was demarcated to be 30m from the high flood levels. The pegs were then placed and marked with the standard WRA pegging painted white and inscribed with blue. (WRA Riparian demarcation report is annexed to this report).

3.3 Kisumu County overview

Kisumu County is one of the 47 counties created through the devolved system of governance by the Constitution of Kenya 2010 delineated as County number 42. The population is estimated at 1,224,531 persons as at 2018. The county has a diverse background comprising of urban and rural set-ups as well as rich ethnic, racial and cultural diversity with the Luo being the dominant community. The county's strategic position serves as a gateway for Kenya into the rest of the African Great Lakes region. It is located on the shores of Lake Victoria and serves as the main commercial and transport hub for the Western part of Kenya and the East African region.

The county hosts the third largest city in Kenya, Kisumu City, which serves as the County's headquarters. There are five major urban centres; Ahero, Katito, Muhoroni, Chemilil, and Maseno. Other emerging fast-growing centers include Awasi, Pap-Onditi, Holo, Kombewa and Sondu.

The major economic activities of the residents are trade, farming and fishing.

3.4 Position, Size and Demographic Features

The County is bordered by Homa Bay County to the South, Nandi County to the North East, Kericho County to the East, Vihiga County to the North West, Siaya County to the West and surrounded by the second largest freshwater lake in the World; Lake Victoria. Kisumu County covers approximately 567 km^2 on water and 2086km^2 land area, representing 0.36% of the total land area of Kenya's 580,367km. Kisumu has a population of 1,155,574 (according to the 2019 National Census). Kisumu West Sub County where the project is situated has a population of 172,821 on a land area of 212.90 km^2

3.5 Physiographic and Natural Conditions

3.5.1 Physical and topographic features

The county's topography is undulating and characterized by Kano-Plains which is a flat stretch lying on the floor of the Rift Valley, the Nyabondo Plateau and the over-hanging huge granite rocks at Riat hills, Maseno and Seme areas. Due to flash flooding, the Kano-Plains have rich alluvial soils which favour agricultural production in horticulture and rice. Granites on the other hand, find their use essentially in the building and road construction industry.

The county is endowed with the second largest freshwater lake in the world; L. Victoria with two major rivers; Nyando and Sondu-Miriu and seven permanent rivers, Awach-Kano, Oroba/Ombeyi, Kibos, Awach-Seme, Kisian, and Mugru, in its catchment. These resources provide a big potential for development of blue economy. Impala sanctuary, Ndere is land, the legendary Luanda Magere and Kit-Mikayi sites are among the unique topographical features.

3.5.2 Ecological Conditions

Kano Plains is predominantly black cotton soil which is poorly drained and unstable though suitable for rice, horticulture and sugarcane production. Seme and the lower parts of Nyakach Sub-counties are dominated by lake sediments, commonly sand and clay soils while Kisumu West Sub-county and upper-Nyakach are predominantly red-loamy soils suitable for agricultural production. The lake shores are generally swampy and offer fertile ground for horticulture and fish breeding.

3.5.3 Climatic Conditions

The climate of the County is generally warm with minimal monthly variation in temperatures between 23^0C and 33^0C throughout the year. The rainfall is determined by a modified equatorial climate characterized by long rains (March to May) and short rains (September to November).

The average annual rainfall varies from 1000-1800mm during the long rains and 450-600mm during the short rains. The altitude in the County varies from 1,144 meters above the sea level on the plains to 1,525 meters above sea level in the Maseno and Lower Nyakach areas. This greatly influences temperatures and rainfall in the County.

a) Rainfall

January is entirely a dry month. The peak generally falls between March and May, with a secondary peak in September to November. Despite the challenges experienced in land preparation as black cotton soils are difficult to work on manually during dry and heavy rain seasons, the available rainfall is adequate and evenly distributed for small-scale food-crop production and cash-crop growing.

b) Temperature

The annual maximum temperature ranges between 25^OC and 33^OC and the annual minimum temperature ranges between 16^OC and 18^OC.

3.6 Administrative and Political Units

Kisumu County has seven Sub-Counties/ Constituencies namely: Kisumu East, Kisumu West, Kisumu Central, Muhoroni, Nyando, Seme and Nyakach.

3.7 Infrastructure Development

The County is served with effective and reliable infrastructure which is critical in lowering the cost of doing business and increasing the competitiveness of the County.

3.7.1 Roads Network

Kisumu County is served with reliable road network, Major players in the road sub-sector in the County include; Kenya National Highways Authority (KeNHA), Kenya Urban Roads Authority (KURA), Kenya Rural Roads Authority (KeRRA), Kenya Informal Settlement Improvement Projects (KISIP), Kenya Wildlife Services (KWS), Kenya Roads Board (KRB), Kisumu Urban Projects (KUP).

3.7.2 Kisumu International Airport

This is the third busiest airport in Kenya and the Country's fourth International airport. Though classified as an International Airport scheduled passenger services is available only to Nairobi and Mombasa. The Airport is set for a second phase expansion that will include the construction of a parallel taxiway, cargo apron and associated facilities. Airlines operating include Kenya Airways, Fly 540, Jambo and Silverstone.

3.7.3 Information, Communication Technology

ICT is a foundation for economic development. Kenya's vision of knowledge-based economy aims at shifting the current industrial development path towards innovation where creation, adoption, adaptation and use of knowledge remain the key source of economic growth. ICT is a critical tool for expanding human skills and rests largely on a system of producing, distributing and utilizing information and knowledge that in turn plays a great role in driving productivity and economic prosperity.

3.7.4 Energy access

The main sources of energy within the County are electricity and thermal (firewood, charcoal, kerosene, LPG, biogas and solar). The County has not fully tapped into the potential of solar power and renewable energy. Currently, the growth of urban areas requires the installation of floodlights to promote the 24-hour economy and improve on security.

Electricity Consumption

The total annual electrical energy consumption in Kisumu County was estimated at 250.3 GWh as at the year 2015. The consumption pattern depicts that private sector contributes to the highest share of electricity consumption, followed by the public-sector entities. Household consumption accounts for only 5.8 percent of the total electricity supplied by Kenya Power. Electricity coverage stood at 46.24 percent in 2015. The County targets to increase electrification by 90 percent by the end of the plan period (2022) through a partnership programme between the County Government and the Rural Electrification Authority.

The main sources of renewable energy that have been exploited in the County for electricity generation are hydropower and biomass. The County has two hydro plants: Sondu Miriu and Sang'oro which contributes 60MW and 20.2MW respectively to the National grid.

Thermal Energy Consumption

Majority of thermal energy used across all sectors in Kisumu is generated from wood fuel, fuel oil, agricultural residues and other oil products. Over 87 percent of households in the County rely on traditional use of biomass for cooking. The use of firewood, charcoal and paraffin for cooking is prevalent in the County at 58.2 percent, 29.3 percent and 7.1 percent respectively.

Solar Energy Access

Kisumu County receives an estimated 5 kWh/m^2 per day of solar energy throughout the year. This has made it possible to use solar energy in the County's energy mix. Access to solar energy within the County is mainly segmented into three tiers: commercial application solar systems (which make up three quarters of the current installed capacity), off-grid solar power systems (powering markets, health centers and other social amenities) and solar house systems (distributed to schools and community social organizations).

Biogas Energy Access

Wood fuel is the key source of energy for rural households. This has a major impact on sustainable development for the County at large hence the need for biogas as an alternative source of energy. Five biogas plants were installed by the County as pilot projects. Three sugar companies also use biogases for electricity generation to meet their own cumulative demand of 20.2MW.

3.8 Land and Land Use

3.8.1 Land ownership categories/ classification

Land is the most important natural resource that the county is endowed with. It is critical to economic, social, political and cultural development. It is also considered as the principal source of livelihood and material wealth by playing host to natural resources. Secure access to land, sustainable land use planning and equitable distribution of land remain immensely important for food and nutrition security, attraction of foreign investors, employment and growth of industries and generally the socio-economic development of the county. Approximately 50 percent of the county's land surface is grossly underutilized with sparse or no development especially in rural areas. In addition, most of the land in the county has not been registered which hinders people from asserting their rights over land.

3.9 Labour and Employment

An efficient, motivated and healthy human resource base is pivotal for enhanced County competitiveness, economic growth and development. The Constitution advocates for decent work where freely chosen productive employment is promoted simultaneously with fundamental rights at work, adequate income from work, representation and social security. In Kisumu County, the informal sector cutting across retail and wholesale trade, industry, transport, agriculture and extraction of minerals employ approximately more than 60 percent of those in gainful employment.

3.9.1 Mining and extraction.

Kisumu County is rich in mining and extraction activities (Quarry, sand harvesting, cement etc.) used in the construction industry ranging from sand harvested along river banks, Murram in Kanyakwar and Nyakach; ballast in Kajulu, Kisumu West and Nyakach and lime in Koru.

3.10 Biodiversity of the area

Within the Lake shore, floral communities include floating macrophytes (hyacinth, hippo grass and papyrus) while the faunal communities include fish, mammals, birds, reptiles, amphibians and insects. The following section presents the findings of the survey as well as data and information obtained from literature review.

3.10.1 Water hyacinth coverage and trends

Water hyacinth, Eichhornia crassipes is an invasive perennial free-floating aquatic weed which was introduced into Lake Victoria from South America. Kisumu Bay, where the site is located has been consistent mapped as a water hyacinth hotspot with implications on accessibility, fishing, water supply and tourism. In the last five years, the acreage of water hyacinth in Winam Gulf exhibited a fluctuating trend. The lowest acreage (< 3000 ha) was observed in 2015 while the highest (> 6000 ha) recorded in 2018. (Source: Nyaboke, et. al., 2019).

Plate 1: Vegetation along the riparian boundary of the proposed project site

3.11 Main tourist and wildlife attractions

Kisumu County has unique features such as the shoreline of Lake Victoria, Kit Mikayi, Ndere, Island National Park, and Impala Park among others which collectively make Kisumu a major tourist destination, abundant hospitality industry with excellent

conference facilities ranging from the Grand Royal Swiss Hotel, situated in a serene environment of Riat hills providing a clear aerial view of the City, Acacia Hotel within the Central Business District, Impala & Jambo Safari Eco-lodge, Kiboko Bay on the shores of L. Victoria for hippo watching, Sunset Hotel to Dunga Beach chain of hotels where the Luo cuisine is enjoyed.

3.12 Museums, Heritage and Cultural sites

Kisumu County is endowed with a number of Heritage sites, which are spread across the entire County. Some of these heritage sites are; Kajulu Caves, Abindu Shrine, God Mesa view point, Kit Mikayi, Fort ternan, Okore Kogonda site, Anguom Yuak, Sango Ka Kere as well as Oneno Nam.

4. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

Environmental law is principally concerned with ensuring the sustainable utilization of natural resources according to a number of fundamental principles developed over the years. In an ideal setting, the utilization of land and land based resources should adhere to these principles, which are sustainability, intergenerational equity, principle of prevention, the precautionary principle, the polluter pays principle, and public participation.

The EMCA, 1999 was developed based of the principles highlighted in the preceding sections. The basis of the EMCA, 1999 was anchored on the fact that the public should be given effective access to judicial and administrative proceedings and further that it have access to the judicial review of environmental decision making functions effectively.

4.1 Background to environmental management policies and laws

4.1.1 Sustainability

The principle of sustainability requires that natural resources should be utilized in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations. It strives for equity in the allocation of the benefits of development and decries short-term resource exploitation which does not consider the long-term costs of such exploitation.

4.1.2 Principle of intergenerational equity

The principle of sustainability should be examined together with that of intergenerational equity, which focuses on future generations as a rightful beneficiary of environmental protection. Essentially, the principle of intergenerational equity advocates fairness, so that present generations do not leave future generations worse off by the choices they make today regarding development. Its implementation requires the utilization of natural resources in a sustainable manner while avoiding irreversible environmental damage.

4.1.3 Principle of prevention

The principle of prevention states that protection of the environment is best achieved by preventing environmental harm in the first place rather than relying on remedies or compensation for such harm after it has occurred. The reasoning behind this principle is that prevention is less costly than allowing environmental damage to occur and then taking mitigation measures.

4.1.4 Precautionary principle

The precautionary principle recognizes the limitations of science, as it is not always able to accurately predict the likely environmental impacts of resource utilization. It calls for precaution in the making of environmental decisions where there is scientific uncertainty.

Accordingly, it is closely related to the principle of prevention and can be viewed as the application of the principle of prevention where the scientific understanding of a specific environmental threat is not complete. The precautionary principle thus requires that all reasonable measures must be taken to prevent the possible deleterious environmental consequences of development activities. Further, it demands that scientific uncertainty should not be used as a reason for not taking cost-effective measures to prevent environmental harm.

4.1.5 Polluter pays principle

The polluter pays principle requires that polluters of natural resources should bear the full environmental and social costs of their activities. It seeks to internalise environmental externalities by ensuring that the full environmental and social costs of resource utilization are reflected in the ultimate market price for the products of such utilization. Since environmentally harmful products will tend to cost more, this principle promotes efficient and sustainable resource allocation as consumers are likely to prefer to the cheaper less polluting substitutes of such products.

4.1.6 Principle of public participation

The principle of public participation seeks to ensure environmental democracy and requires that the public, especially local communities should participate in the environment and development decisions that affect their lives. It requires that the public should have appropriate access to information concerning the environment that is held by public authorities and should be given an opportunity to participate in decision-making processes.

4.2 Policy framework

4.2.1 Environmental policy

The Kenya Government's environmental policy aims at integrating environmental aspects into national development plans. The broad objectives of the national environmental policy include:

- Optimal use of natural land and water resources in improving the quality of the human environment;
- Sustainable use of natural resources to meet the needs of the present generation while preserving their ability to meet the needs of future generations;
- Integrate environmental conservation and economic activities into the process of sustainable development;
- Meet national goals and international obligations by conserving bio-diversity, arresting desertification, mitigating effects of disasters, protecting the ozone layer and maintaining an ecological balance on earth.

4.2.2 National Environmental Action Plan Framework, 2009-2013

The National Environment Action Plan Framework is the second national environmental policy after the 1994 National Environment Action Plan (NEAP). The development of NEAP is provided for by EMCA, 1999 which requires preparation of Environmental

Action Plan at different levels; district, provincial, and national levels. The framework recognizes the intertwined linkages between economic growth and environment in Kenya. It highlights priority themes and activities for the country towards achieving sustainable environment.

The policy framework among others, proposes integration of environmental concerns into regional and local development plans, promotion of appropriate land uses and enforcement of EMCA, 1999 and its subsidiary and other relevant legislations. The policy framework also advocates for efficient water harvesting, storage and usage. On human settlements and infrastructure, this policy framework recognizes the associated environmental issues. These include waste management, sanitation, diseases, land use changes in conservation areas, demand for water, energy, construction materials, pollution, land degradation, biodiversity loss, land and housing tenure, urban planning and design and electronic wastes. In managing operations of the Rambara Company Ltd, consideration of the highlighted issues is vital towards contribution to the national sustainable development goals.

4.2.3 The Occupational safety and Health Policy

This Policy lays emphasis on continual development and implementation of the Occupational Safety and Health systems and programs to reduce incidences of work related accidents and diseases. In addition, it seeks to offer equitable compensation to those who suffer physical injuries and contract occupational diseases. The Policy addresses the current challenges, gaps and future development of safety and health systems and programs in the country. It promotes basic principles of assessing occupational risks or hazards; combating occupational risks or hazards at source; and developing a national preventative safety and health culture that includes information, consultation, research and training. The policy also promotes continuous improvement of occupational safety and health by integrating Kenyan national laws and regulations with Regional Protocols, ILO Conventions, ISO standards and the best practices in the world. It sets up mechanisms for resource mobilization for occupational safety and health programs and activities and provides guidance to all stakeholders in the development and implementation of occupational safety and health systems and programs. Rambara Company Ltd is committed to put in place occupational safety and health systems and programs to be in tandem with the national policy.

4.2.4 The Kenya Vision 2030 and the "Big Four" Blueprint

The Kenya Vision 2030 is the national long-term development policy that aims to transform Kenya into a newly industrialized, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment.

The Big Four is an economic blueprint that was developed by the government to foster economic development and provide a solution to the various socio-economic problems facing Kenyans. The four items that intended for delivery include Food Security and Nutrition, Universal Health Care, affordable Housing and enhancing the Local Manufacturing industry. Rambara Company Ltd will explicitly play a big role in realization of two of the pillars namely Universal Health Care and affordable housing as soon as it is completed.

4.2.5 Sustainable Development Goals (SDGs)

MDGs are eight internationally-agreed goals for socio-economic development that emphasize the following: elimination of extreme poverty and hunger; universal primary education; gender equality; reduction in child mortality; improvement in maternal health; lower HIV/AIDS and major disease incidence; environmental sustainability; and better partnerships with international development partners. The facility has an opportunity to contribute towards local achievement of some of these goals via employment opportunities creation, corporate support to community initiatives and contribution towards achieving environmental sustainability goal.

4.2.6 National Water Policy

The National Policy of Water which was promulgated in April 1999 as Sessional Paper No. 1 of 1999 calls for decentralization of operational activities from the central government to other sectors, including local authorities, the private sector and increased involvement of communities in order to improve efficiency in service delivery. It also tackles issues pertaining to water supply and sanitation facilities development, institutional framework and financing of the sector. According to the policy, in order to enable sustainable water supply and sanitation services, there is need to apply alternative management options that are participatory through enhanced involvement of others in the provision of these services but particularly the private sector.

The overall objective of the National Water Policy is to lay the foundation for the rational and efficient framework for meeting the water needs for national economic development, poverty alleviation, environmental protection and social well-being of the people through sustainable water resource management.

4.3 Legal framework

4.3.1 NEMA

The National Environment Management Authority (NEMA) is the National body charged with coordinating matters of implementation of policy issues relating to the environment. This body was established under the Environmental Management and Coordination (amendment) Act (EMCA), 2015. Other departments that deal with environmental issues in the Sub County include Water Resources Authority (WRA), Lake Victoria Environmental Management Project (LVEMP II), the Kenya Forestry Service, Kenya Wildlife Services (KWS), National Construction Authority (NCA), County Government of Kisumu, among others.

Rambara Company Ltd is committed to comply with all applicable legal provisions and regulations which have been reviewed in the table below.

Table 1: Relevant legal and regulatory requirements

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
The Constitution of Kenya (2010)	• Provides for the protection of the right to private property • Provides for the sound conservation and protection of ecologically sensitive areas • Supports the settlement of land disputes through recognized local community initiatives • Gives powers to the state to regulate use of land	• Theproponent will ensure sound protection of the environment and any other ecological sensitive receptor by installing pollution prevention technologies such as effluent treatment and recycling plant.
Environmental Management & Coordination Act, 1999 (Amended 2015) and Subsidiary Regulations	Ensure environmental protection during project implementation. • Environmental Impact Assessment EIA) • Environmental Audit and Monitoring, Environmental Quality standards and issuance of environmental protection orders • Generation of sector related regulations • Environmental Management and Coordination (Environmental Impact Assessment and Audit) Regulations, 2003 - Waste Management Regulations - 2006 - Water Quality Regulations - 2006 - Wetlands, River Banks, Lake Shores and Sea Shore Management Regulations - 2009 - Air Quality Regulations - 2014	• Rambara Company Ltd shall comply with EMCA and subsidiary regulations including best international practices; • The proponent shall have Environmental Policy in place and employ an environmental officer to oversee all environmental matters during construction and operation of the Golf Course Development.
Environmental Management and Co-ordination (Waste Management) Regulations 2006	• Provides for standards for handling, transportation and disposal of various types of wastes including hazardous wastes.	• The proponent shall contract a NEMA registered waste disposal agent to dispose appropriately its solid waste; • The proponent shall pave and install oil water interceptor in active operation area such as the parking areas.
Environmental (Impact Assessment and Audit) Regulations, 2003	• No proponent shall implement a project if it is likely to have a negative environmental impact; or for which an environmental impact assessment is required under the Act or these Regulations unless an environmental impact assessment has been concluded and approved in accordance with these regulations. • No licensing authority under any law in force in Kenya shall issue a	• The Proponent is carrying out the ESIA for NEMA review and licensing and shall carry successive Environmental Audits at the facility to identify new potential environmental impacts associated with the future operations of the Golf Course Development.

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
	license for any project for which an environmental impact assessment is required under the Act unless the applicant produces to the licensing authority a license of environmental impact assessment issued by the Authority under these Regulations	
EMCA (Water Quality) Regulations, 2006	• Every person shall refrain from any act which directly or indirectly causes, or may cause immediate or subsequent water pollution, • No person shall throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution. • No person shall • (a) Discharge, any effluent from sewage treatment works industry or other point sources without a valid effluent discharge license issued in accordance with the provisions of the Act; • (b) abstract ground water or carry out any activity near any lakes, rivers, streams, springs and wells that is likely to have any adverse impact on the quantity and quality of the water, without an environmental impact assessment license issued in accordance with the provisions of the Act;	• The proponent shall install Waste water Treatment and recycling Plant for pre-cleaning and recycling of Waste water from the Golf Course Development. • The facility shall apply for a valid Effluent Discharge License from NEMA for its Waste water treatment plant once it is operational.
EMCA (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009	A person shall not engage in any activity that may- • have an adverse impact on any ecosystem; • lead to the introduction of any exotic species; • lead to unsustainable use of natural resources, Without an Environmental Impact Assessment License issued by the Authority under the Act.	• The nearest sensitive receptor is the adjacent Lake Victoria and no raw waste water shall be released back to the Lake from the Golf Course Development.
Environmental Management and Coordination (Air Quality) Regulations, 2014	• Provides for ambient air quality tolerance limits. • Prohibits air pollution in a manner that exceed specified levels. • Provides for installation of air pollution control systems where pollutants emitted exceed specified limits. • Provides for the control of fugitive emissions within property boundary. • Provides for the control of vehicular emissions. • Provides for prevention of dispersion of visible particulate matter or dust from any material being transported.	• Rambara Company Ltd shall sponsor tree planting exercises within and around the premises to counter air pollution as a result of the activities due to their operations.

Legislation/Regulation/ Standard	**Provisions**	**Compliance/Non-compliance**
	• Provides for acquisition of an emission license.	
Land Act 2012	Promote Land Conservation including and need to prepare EMP: • Conservation of ecologically sensitive public land • Conservation of land based natural resources • submit an EMP pursuant to existing law on environment	• The proponent is the registered title holder and shall ensure that he complies with the current environmental laws in order to protect the land from any form of pollution.
Physical and Land Use Planning Act, 2019	• The government, at both national and county level, is tasked with the preparation of physical and land use plans. The national, county, inter-county and local plans are required to be integrated, and these plans shall collectively form the basis of how land is to be used in Kenya. • County governments to control development in their respective counties. All applications for development permission shall be made in the relevant county. • Development permission must be sought prior to undertaking any development. A developer who does not obtain such prior permission risks criminal sanctions and demolition of the unapproved works. • Members of the public are given the opportunity to give their views and raise objections to various matters e.g. the suitability of the national and county plans. • The Act lists developments that require development permission. In this regard, developments such as subdivision, amalgamation, change of user, extension of user, extension of lease and approval of building plans require development permission to be issued by the relevant county government. • Processing of easements and wayleaves require express development permission, as siting of educational institutions, base transmission stations, petrol stations, eco lodges, campsites, power generation plants and factories. • Development permission in respect of commercial and industrial use is a pre-requisite for other licensing authorities granting a licence for a commercial or industrial use, or occupation of land.	• The proponent will forward plans to the respective offices for approval and obtain development approvals from the County Department of Physical Planning
The Public Health Act (Cap 242)	• No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health. • It shall be the duty of every health authority to take all lawful, necessary and reasonably practicable measures for preventing or causing to be prevented or	• Housekeeping within the site shall be well maintained in all the operation areas including compliance with the Ministry of Health Covid-19 Protocols by providing hand washing stations and notices to both the employees and

Legislation/Regulation/ Standard	**Provisions**	**Compliance/Non-compliance**
	remedied all conditions liable to be injurious or dangerous to health arising from the erection or occupation of unhealthy dwellings or premises	visitors to keep social distances and put on face masks at all times within the facility. • Sanitary conveniences shall be provided to the employees during construction and operation of the Golf Course Development; • The proponent will sensitize the community on the importance of environmental management and carry out HIV/AIDS awareness programs within the community
The Occupational Safety and Health Act, 2007	• Provides that every occupier shall ensure the safety, health and welfare at work of all persons working in his workplace • Provides that the architectural plans of the Golf Course Development be approved by the Directorate of Occupational Safety and Health Services before construction activities commence. In approving the plans Directorate of Occupational Safety and Health Services will among other requirements ensure that: - Prescribed dimensions with regards to distance of floor to ceiling of every workroom is upheld - Space defining machine layout for intended use by operators will be within statutory limits - Emergency exits are provided for and are designed to open in accordance to statutory requirements - Sanitary conveniences are provided for with adequacy as to number of intended employees and are designed to have separate approaches - First aid facilities like first aid room(s) are provided for, - There is provision for accommodation for clothes not worn during working hours - There is provision for adequate ventilation - There is provision for storage of firefighting water storage tank with a capacity of at least 10,000 litres • Provides that before any person occupies or uses any premises as a workplace, he shall apply for the registration of the premises	• The facility has recently carried out occupational health and safety audit, fire safety audit, risk assessment and is in the process of implementing the recommendations. • The proponent shall ensure that firefighting equipment are present and strategically placed within the facility including a standby fire engine; • First Aid kits shall be made available in every department and training on first aid done; • Fire assembly points shall be marked where the visitors and employees can gather for briefing in case of a fire; • There shall be provided clear and demarcated emergency exits within the facility; • An ambulance shall be on standby in the eventuality of an emergency; • Provision of PPEs shall be made mandatory within the facility. • Application for site registration will be done as soon as construction commences and registration of the facility shall follow when the facility starts operations. • Safety and health committee shall be formed when the facility is operational

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
	• Provides that workplace shall be of sufficient size for work to be carried out with ease and shall further have the necessary free space and, having regard to the nature of the work, an adequate amount of air for each employee, the minimum permissible being ten cubic metres per person • Provides that an occupier shall ensure that effective and suitable provision is made for securing and maintaining, by the circulation of fresh air in each workroom, the adequate ventilation of the room • Provides that an occupier shall ensure that effective provision is made for securing and maintaining sufficient and suitable lighting, whether natural or artificial, in every part of his workplace in which persons are working or passing • Provides that sufficient and suitable sanitary conveniences for the persons employed in the workplace shall be provided, maintained and kept clean, and effective provision shall be made for lighting the conveniences; and, where persons of both sexes are or are intended to be employed (except in the case of workplaces where the only persons employed are members of the same family dwelling there), such conveniences shall afford proper separate accommodation for persons of each sex • Provides that every steam boiler, lifting appliance, air receiver, refrigeration plant, steam receiver and all its fittings shall be thoroughly examined by an approved person, so far as the construction of the plant permits at prescribed intervals. • Provides that where work has to be done inside a confined space in which dangerous fumes are liable to be present, a permit to work has to be issued and the confined space shall be provided with adequate means of egress and ingress. • Provides that in every workplace or workroom, there shall be provided and maintained, and conspicuously displayed and free from any obstruction so as to be readily accessible, suitable means for extinguishing fire. • Provides every workplace there shall be provided and maintained safe plants and systems during its operational phase. • Provides for every workplace there shall be ensured absence/elimination of risks. • Provide for every workplace to ensure provision of information to employees to ensure safety and health.	• Safety signs shall be erected and posted as appropriate when the facility is operational.

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
	• Provides that every workplace carries out workplace risk assessment and send a copy of the risk assessment to the Directorate of Occupational Safety and Health Services (DOSHS). • Provides for preparation of a safety & health policy and submission of a copy to the Directorate of Occupational Safety and Health Services • Provides for prevention of environmental pollution • Provides for notification of accident occurrence, cases of occupational diseases and dangerous occurrence to DOSHS • Provides that no employee is discriminated against by virtue of:- - Lodging a complaint about an unsafe condition at the workplace - Being an active member of a health safety committee. • Provides for establishment of a health and safety committee whose composition should be in accordance to the Factories (Health and Safety Committees) Rules L.N. 31of 2004. • Provides for carrying out workplace health and safety as well as fire safety audits on an annual basis.	
Safety & Health Committee Rules, 2004 Legal Notice No. 31	The Legal Notice provides for functions and duties of the health and safety committee, the purpose of meetings and recording minutes, and the roles of the office bearers. It further describes the duties of the occupier and those of the Health and Safety Adviser. Among other items, the rules provide that: • The occupier of every workplace shall establish a health and safety committee; • The committee shall consist of safety representatives from the management and the workers; • The Golf Course Development occupiers shall appoint a competent person from the management staff to be responsible for safety, health and welfare in the Golf Course Development or workplace; and the person appointed shall be the secretary to the committee. • Every member of the Health and Safety Committee shall undertake a prescribed basic training course in occupational health and safety within	• Safety and health committee shall be formed and trained when the facility is operational

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
	a period of six months from the date of appointment or election, and thereafter further training from time to time.	
Fire Risk Reduction Rules, 2007 Legal Notice No. 59	The Rules provides that an employer/occupier having flammable substances must have fire resistant facility. The occupier to store highly flammable substances in fixed storage tanks, closed vessels, cupboards except for vehicles transporting the same. Flammable materials have to be kept in separate labeled stores. In go-downs, the employer has to maintain a distance of at least 80 cm wall gangway between the walls and stack of goods. Every employer is required to maintain good ventilation to allow exit of flammable fumes, maintain good housekeeping, maintain good electrical fittings, provide and maintain fire exits, form and train firefighting teams, conduct fire drills yearly, designate an assembly point, provide and maintain first aid facilities, post fire safety notices, install fire detectors, provide and maintain firefighting appliances, conduct an annual fire safety audit and formulate a fire safety policy.	• Fire assembly points shall be marked where the visitors and employees can gather for briefing in case of a fire; • There shall be provided clear and demarcated emergency exits within the facility; • The facility has recently carried out fire safety audit, risk assessment and is in the process of implementing the recommendations.
Hazardous Substances Rules, 2007 Legal Notice No. 60	The rules provide that where hazardous substances are handled, washing facilities be provided, protective clothing be kept separate from personal clothing, separate clean and dirty changing rooms be maintained, proper maintenance and testing of engineering controls be done after every 2 years and a report submitted to DOSHS, protection against radioactive, carcinogenic, mutagenic or teratogenic be provided, Material Safety Data Sheets (MSDS) be availed in respect of chemicals handled, correct disposal of hazardous chemical substances be done, containers of hazardous substances be labeled, workers be trained on hazards associated to hazardous substances handled and air monitoring and measurements be done after every 12 months by an air quality monitor.	• The facility will carry out occupational hygiene measurements and surveys which inform the process of implementing the recommended measures.
First Aid Rules, 1977 Legal Notice No. 160	These rules provide for first-aid box content with respect to size of a workplace and under whose charge the first-aid box should be placed.	• First Aid kits shall be made available in every department and training on first aid done; • An ambulance shall be on standby in the eventuality of an emergency;

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
Eye Protection Rules legal Notice No. 44 of 1978	The rules provide for eye safety in workplaces. Processes where eye protection is required include blasting, cleaning, chipping, metal cutting, arc welding, abrasive wheel use (grinding).	• Provision of PPEs shall be made mandatory within the facility. • Safe procedures and programmes will be provided to the workers
Electric Power(Special) Rules, 1979 Legal Notice No. 340	The rules provide for electrical safety with regards to electrical power installations, use and handling. These rules apply to generation, transformation, conversion, switching, controlling, regulating, distribution and use of electricity.	• Provision of PPEs shall be made mandatory within the facility. • Only qualified personnel will be allowed to handle activities that involve electric power.
Building Operations and Works of Engineering Construction Rules, 1984 Legal Notice No. 40	These rules provide for the safety, health and welfare of workers in construction sites relating to building operations and works of engineering construction undertaken by way of trade or business, or for the purpose of any industrial or commercial undertaking, and any line or siding which is used in connection therewith and for the purposes thereof. The rules apply whether the building operations and works of engineering construction undertaken by or on behalf of the Government or a public body or private developer.	During the construction phase, the contractor will be expected to ensure safety, health and welfare of workers and all persons lawfully present at the construction site.
Medical Examination Rules, 2007 Legal Notice No. 24	The rules apply to workplaces of classified hazards. Every employer has to ensure medical examination of workers in the workplaces of classified hazards.	• During the construction phase there will be noise emission, exposure to dusts and fumes (cement, soil, welding fumes etc) and exposure to musculoskeletal hazards. • During the operational phase there will be noise emission, exposure to dusts and fumes, exposure to musculoskeletal hazards. • Statutory medical examination on the workers exposed will be mandatory.
Noise Prevention and Control Rules, 2005. Legal Notice No. 25	The rules provide that 'No worker shall be exposed to noise level excess of the continuous equivalent of 90 dB(A) for more than 8 hours within any 24	• Provision of PPEs shall be made mandatory within the facility. • Medical examinations and surveillance will be implemented at the facility

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
	hours duration'. They further provide for protection from exposure to high noise levels.	• Noise measurement and survey will be done at the facility
Work Injury Benefits Act, No. 17 of 2007	This law provides for compensation to employees for work-related injuries and diseases contracted in the course employment and for connected purposes.	• The employer will have an insurance cover for the facility to cater for compensation of injuries sustained by employees while at work
The Water Act, 2016 and The Water Resources Management Rules, 2007	• Protection of surface and groundwater resources; • Protection of water catchments; • Empower Water Resources Authority (WRA) to impose management controls on land use falling under riparian land; • Provides that a permit shall be required for any use of water from a water resource, especially where there is abstraction and use of water with the employment of works.	• The riparian area for the proposed project land was established from the highest flood level and demarcated using newly installed Beacons on 6th January 2022 by WRA. • The Golf Course Development shall abstract water from the onsite borehole and shall obtain water abstraction permit from WRA.
The County Governments Act 2012	• Enforcing protection of trees and other vegetation in urban centres • Approval of development designs before construction can begin • Enforce orderly development in an urban setting	• The Golf Course Development shall work in liaison with the County Government to ensure compliance with land use requirements within the county and obtain the necessary licenses and permits.
Employment Act 2007	• The act stipulates that no person shall use or assist any other person, in using forced labour. • No employer shall discriminate directly or indirectly, against an employee or prospective employee or harass an employee or prospective employee on the following grounds; race, colour, sex, language, religion, political or other opinion, nationality, ethnic or social origin, disability, pregnancy, mental status or HIV status. • An employer shall pay his employees equal remuneration for work of equal value.	• The Golf Course Development shall be a source of employment for many workers of both gender and diverse cultural backgrounds.
Sustainable Development Goals (SDGs)	• Sustainable Development goals which were initiated by world leaders in 2015 as an advancement of the Millennium Development Goals (MDGs) provide concrete, numerical benchmarks for tackling extreme poverty in its many dimensions. The SDGs also provide a framework for the entire international community to work together towards a common end making	• The proposed project will contribute towards alleviating rural poverty by increasing means of livelihood through employment and small scale businesses. The ESIA study will ensure that the proposed project reflects Environmental

Legislation/Regulation/ Standard	Provisions	Compliance/Non-compliance
	sure that human development reaches everyone, everywhere. If these goals are achieved, world poverty will reduce by half, tens of millions of lives will be saved, and billions more people will have the opportunity to benefit from the global economy. • Goals 6, 7, 13 and 15 of the SDGs revolve around ensuring Environmental Sustainability. The goals highlight on; ✓ Ensuring availability of sustainable management of water and sanitation for all ; ✓ Ensuring a clean and more sustainable supply of water within related watersheds; ✓ Ensuring access to affordable, reliable, sustainable and modern energy for all; ✓ Combating climate change through the reforestation of degraded and degrading landscapes where by reforestation helps in strengthening community resilience to climate change ; ✓ Protecting, restoring and promoting sustainable use of terrestrial ecosystem, sustainably manage forests, and ✓ Combat desertification and halt and reverse land degradation, and halt biodiversity loss.	Sustainability especially during the time of construction and implementation.

4.4 International Conventions and Treaties

A treaty is a binding agreement under International Law concluded by subjects of International Law, namely states and international organizations. Treaties can be called by many names including; International Agreements, Protocols, Covenants, Conventions, Exchanges of Letters, Exchanges of Notes, etc.

Treaties can be loosely compared to contracts; both are means of willing parties assuming obligations among themselves, and a party that fails to live up to their obligations can be held legally liable for that breach. The central principle of treaty law is expressed in the 'maximpactasuntservanda', translated as "pacts must be respected."

Kenya has ratified the following international conventions.

4.4.1 United Nations Framework Convention on Climate Change

The landmark United Nations Framework Convention on Climate Change (UNFCCC) was opened for signature at the 1992 United Nations Conference on Environment and Development (UNCED) conference in Rio de Janeiro (known by its popular title, the Earth Summit). On June 12th 1992, 154 nations signed the UNFCCC, that upon ratification committed signatories' governments to a voluntary "non-binding aim" to reduce atmospheric concentrations of greenhouse gases with the goal of "preventing dangerous anthropogenic interference with Earth's climate system." These actions were aimed primarily at industrialized countries, with the intention of stabilizing their emissions of greenhouse gases at 1990 levels by the year 2000; and other responsibilities would be incumbent upon all UNFCCC parties. The parties agreed in general that they would recognize "common but differentiated responsibilities," with greater responsibility for reducing greenhouse gas emissions in the near term on the part of developed/industrialized countries, which were listed and identified in Annex I of the UNFCCC and thereafter referred to as "Annex I" countries.

4.4.2 Kyoto Protocol

According to a press release from the United Nations Environment Programme:
"The Kyoto Protocol is an agreement under which industrialized countries will reduce their collective emissions of greenhouse gases by 5.2% compared to the year 1990 (but note that, compared to the emissions levels that would be expected by 2010 without the Protocol, this target represents a 29% cut). The goal is to lower overall emissions of six greenhouse gases - carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs, and PFCs - calculated as an average over the five-year period of 2008-12. National targets range from 8% reductions for the European Union and some others to 7% for the US, 6% for Japan, 0% for Russia, and permitted increases of 8% for Australia and 10% for Iceland."

It is an agreement negotiated as an amendment to the UNFCCC, which was adopted at the Earth Summit in Rio de Janeiro in 1992. All parties to the UNFCCC can sign or ratify the Kyoto Protocol, while non-parties to the UNFCCC cannot. The Kyoto Protocol was adopted at the third session of the Conference of Parties (COP) to the UNFCCC in 1997 in Kyoto, Japan.

5. PUBLIC CONSULTATION AND PARTICIPATION

5.1 Overview

The proposed project facilities will mainly serve the public and the local people. Therefore it is imperative that the beneficiaries are involved in the project feasibility, planning, implementation and operation stages. In view of these, the ESIA team adopted a participatory approach during the study noting that stakeholders' participation in Kenya is entrenched in the constitution, several legal instruments and international instruments to where Kenya is a party.

5.2 Legal Requirement for Public Participation

5.2.1 The Constitution of Kenya

Public participation is entrenched in several articles across the Kenya constitution 2010. Article 6 provided for devolution and access to services. Responsibilities in major decision-making process have been bestowed to the public (in the bill of rights, articles 118, 174, 196 and 201). The constitution further in article 21 section 3 requires safeguarding the rights and interests of marginalized groups for equity in public service provision. This can be effectively achieved through active involvement of such groups in decision making process at all levels. Hence need to involve the local people in the project area in studies, design and implementation of the proposed project facilities.

5.2.2 Environmental Management and Coordination Act, 1999

Section 17 of the Environmental (Impact Assessment and Audit) Regulations of 2003 requires that all ESIA studies incorporate consultation with the public during the entire study process. The aim of public consultation in the project were to ensure that all stakeholders' issues and concerns in the proposed facilities are identified and their opinion considered during project planning, design, implementation, operation and decommissioning phase.

5.2.3 County Government Act 2012

Public participation is integral in Kenya's development process as set out in the decentralized system of governance. The county government Act which sets out the service delivery procedure of county governments, has recognized local people involvement in decision making as key to governance. The Act in part VIII stipulates the principles of citizen participation and in part IX it guarantees the citizens‟ right to public communication as well as access to information. To ensure that there is optimal participation, the Act provides for civic education in part X to build the capacity of local people. Therefore meaningful public consultation is significant during planning, implementing and operation of development projects hence the need for such consultations for the proposed development in Kisumu County.

5.2.4 International Convention (Aarhus Convention 1998)

The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters entered into force on October 2001. The Convention grants the public rights regarding access to information, public participation and access to justice, in public decision- making processes on matters concerning the local, national and trans-boundary environment. It focuses on interactions between the public and public authorities.

5.3 Objectives of Public Consultations

Public participation is not a one off event but a process throughout the project cycle that requires regular consultations. In regard to the preceding observation, the proposed project involved stakeholders' participation with the following objectives;

- Disseminate and inform the project stakeholders about the proposed project, its key components and activities, location and expected impacts with particular attention to potentially affected persons;
- Create awareness among the public and stakeholders on the need for the ESIA for the proposed project and its due process;
- To obtain information about the needs, concerns, comments, suggestions and priorities of the local people as well as their general reactions to proposed project activities;
- To obtain the cooperation and participation of the key stakeholders, affected persons and local communities in activities that were required to be undertaken for designing, implementing and operating of the proposed project or development of the project facilities;
- Create a sense of ownership, capacity build and ensure transparency in all activities related to the project including but not limited to designing, planning, implementing, environmental management, operation, monitoring and evaluation of the project by all key stakeholders; and
- To establish a clear communication channel, easily accessible and effective grievance procedure between the public, consultant team, the project proponent and the Kisumu County Government.

5.4 Consultation Process

Legal Notice of 101 of June 2003 requires that all environmental and social assessment process in Kenya to incorporate Public Consultation. This a requirement informed by awareness that development and implementation of projects can occasion diverse impacts on stakeholders who should consequently be informed appropriately following which they can make informed decision to the proposed development. It is also important to ensure that all stakeholder interests are identified and incorporated in project development, implementation and operation and, against such background, consultation was undertaken far and wide both within the project area and outside with the following objectives; -

i. To disclose the Study to both primary, secondary and other stakeholders;
ii. To obtain the reaction/comments/concerns of all stakeholders so as to understand their perceived view of the proposed project and assess the extent to which their views need to be taken into account. This is important as it helps to ensure that important social

issues are not overlooked and there is ownership from the communities in all the project areas;

iii. Improve project design by incorporating their views, thereby, minimize conflicts and delays in implementation;

iv. Increase long term project sustainability and ownership of the project;

v. Identify local leaders with whom further dialogue can be continued in subsequent stages of the project.

5.5 Tools used in stakeholder and public consultations

5.5.1 Public Consultation Meetings

PCMs – The Consultant in collaboration with the national government led by the area Chief carried out public participation on the proposed Golf Course Development project. The meetings were held at the project site on two different days, one during the project report level on 4th November 2021 and the other one during the full study level on the 18th February 2022. In their consultations, the community sensitization meetings targeted in general all community members within the project area.

Plate 2: PCM on 4th November 2021 at the proposed project site

During the meetings, Rambara Company Ltd representative and the consultants explained the salient features of the project including geographical scope, infrastructure, expected benefits that were cross-checked with the communities and environmental aspects. The community members were given an opportunity to air their views and bring out the issues that were of concern to them. The meetings addressed the following topics: Overview of the project; possibility of domestic water supply; socio-economic aspects including anticipated project benefits; community participation in the project; natural resources including water, land and environmental and social issues including likely negative impacts and the proposed mitigation measures.

5.6 Views Expressed

The various stakeholders expressed their views freely and passionately during the sessions mentioned above. The views were largely expressed verbally. However, some questionnaires for the socio-economic survey were also filled by respondents.

5.7 Public Participation findings

5.7.1 Positive impacts

- Creation of employment for the local community members during and after construction
- Will lead to increase in income generation
- Will foster formation of new businesses
- Tourism boost within the region
- Infrastructure improvement in the area

5.7.2 Negative impacts

- Displacement of riparian wildlife
- Accessibility to the lake would by the local community will be limited
- Fishing along the shoreline will be affected
- Possible pollution of the lake water

5.7.3 Recommendations

- Alternative water access such as borehole water for the community should be explored. However the proponent promised to supply the community and the local primary school with borehole water;
- Carry out financial literacy for the community to impact them on how to handle money;
- The proponent to collaborate with the local administration to employ more youth within the project.

The meeting minutes capturing the respondents views/opinions and suggestions are attached to this study report.

6. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This chapter presents an assessment of environmental impacts from the planned project design and activities, and proposes mitigation and management measures to prevent and control these impacts.

The environmental impact assessment and analysis was done using a number of methods and tools. While identifying impacts, a checklist was used. This indicated all possible impacts that would accrue from implementation of this project.

6.1 Legal and regulatory compliance

The national laws and regulations relevant to the development and their relevance to the process project have been discussed.

6.2 Construction and Equipment installation

Key aspects to be considered during construction are:

- Procurement of construction materials;
- Installation of services and interiors of the buildings;
- Use of heavy and light machinery;
- Energy utilisation, major energy consuming activities include:
  - ✓ Lighting;
  - ✓ Excavation;
  - ✓ Transportation;
  - ✓ Hauling and hoisting of materials;
- Mixing raw materials;
- Waste handling trucking and disposal;
- Testing and commissioning of the development.
- Energy sources for these activities include grid electricity and diesel or petrol fuel for machinery/vehicles.
- Water utilisation, including use for the following activities:
  - ✓ Washing of machinery and equipment;
  - ✓ Preparing of mixtures, including water based emulsion paints;
  - ✓ Concrete works, including curing;
  - ✓ General cleaning;
  - ✓ Landscaping;
  - ✓ Controlling dust on site;
  - ✓ Domestic utilisation (sanitary facilities).
- Construction waste will include the following:
  - ✓ Timber from used formwork;
  - ✓ Paints, lubricants and petroleum wastes;
  - ✓ Containers, cement paper bags and other packaging materials;
  - ✓ Metal, glass, plastic containers and other unwanted materials.
- Socio-economic effects;
  - ✓ Labour;
  - ✓ Security;

- ✓ Transport.
- ✓ Archaeological findings and aesthetics.

Table 2: Summary of impacts and mitigation during construction and installation

Activity	Anticipated Impact	Recommended Mitigation Measures
Procurement of construction materials:	• Natural resource depletion if not rationally done through activities such as quarrying, mining, timber logging.	• The tender documents should specify required standards and certification for procurement of all materials and appliances; • All construction materials should be from approved sources; for example, hardstone for building should be obtained from bona fide commercial quarries; • As far as possible, environmentally friendly and sustainable materials should be used. • Materials not to be used for construction of the buildings include: ✓ High alumina cement; ✓ Wood wool slab in permanent formwork to concrete; ✓ Calcium silicate bricks or tiles; ✓ Asbestos in any form; ✓ Asbestos substitutes or any naturally occurring or man-made mineral fibers; ✓ Lead, lead paint or any other materials containing lead which may be inhaled, ingested or absorbed; Vermiculite, unless it is established as being fiber-free; ✓ Any products containing cadmium that are regarded as being injurious substances; ✓ Any other substances regarded as being deleterious building materials which are not in accordance with statutory requirements or with current accepted good building practice at the time of specification or construction. • The Project Manager should ensure that the Contractors are instructed in the use of all • materials that may have negative environmental (including health) effects; • If any material or substance is used that is at any point in the future deemed to be deleterious to health, then it must be replaced with an acceptable alternative.
Building works:	• Health and safety risk from accidents and incidents; Noise, vibrations and dust.	• Adhere to safety regulations outlined in the County Government Adoptive by-laws, Building Code and the Building Operations and Works of Engineering Construction • The Project Manager should ensure strict safety management through close attention to design, work procedures, materials and equipment; • Schedule noisy construction • Develop a site safety action plan detailing safety equipment to be used, emergency procedures, restrictions on site, frequency and personnel responsible for safety inspections and controls; • All workmen should be provided with personal protective equipment (e.g. dust masks, ear muffs, helmets, overalls, industrial boots, harnesses, etc);

Activity	Anticipated Impact	Recommended Mitigation Measures
		• There should be regular site reporting on health, safety and environment (HSE) issues by an appointed HSE representative, daily site inspections should be done to ensure safe work practices are adhered to; • All injuries that occur on site must be reported recorded in the accident registers and corrective actions for their prevention be instigated as appropriate; • Statistical records on accidents and incidents should be collated and analyzed on a monthly basis and forwarded to the Project Manager and / or displayed on the notice boards; • Site personnel should be encouraged to report "near-miss incidents" in order to avoid potential problems and increase safety awareness. • Safety signage should be erected and adhered to at the site
Energy utilization:	• Energy consumption.	• Develop an energy management plan; • Construction machinery and vehicles should be maintained and used in accordance with manufacturer's specifications, to maximize efficiency and lower use of energy, e.g. drivers of construction vehicles should be instructed not to leave them idling for extended periods; • Construction workers should be sensitized on the importance of energy management.
Water Utilization	• Water consumption; Hygiene and sanitation challenges.	• Monitor water consumption and utilization; • Sensitize construction workers on the importance of proper water management; • All wastewater should be drained into approved drainage facilities.
Waste production:	• Littering, soil and surface water pollution potential.	• The tender documents should specify the proper disposal of waste during construction and should also ensure that the Contractor leaves the site in a clean and safe condition on completion of the Works; • The Contractor should be required to restore and landscape all areas to the satisfaction of the Project Manager; • All solid waste generated during construction should be collected, stored, and taken away for disposal; • There should be controlled use of raw materials; • Procedures for handling of special wastes, such as waste fuel oil, should be specified; • Comply with guidelines on solid waste disposal and Waste Management Regulations 2006.

Activity	Anticipated Impact	Recommended Mitigation Measures
Influx of construction workers into the area:	• Proliferation of informal kiosks in the area; • Increase in transport demand.	• Develop a catering program on site for construction staff; • Provide transportation for the workforce to and from the site.
Construction traffic:	• Disruption of local traffic; • Potential for accidents.	• The Contractor should plan itineraries for site traffic.
Archaeological findings:	• Destruction of natural heritage /loss of archaeological findings.	• In the event of an archaeological finding, the Contractor should secure the location 'as is' and immediately call the National Museums of Kenya's Archaeology Section.

6.3 Operation Stage

The key environmental issues during commissioning and operation are as follows:

- Water supply and consumption;
- Energy consumption and management;
- Effluent Management
- Solid waste management;
- Property management;
- Transport & security;
- Health and safety;
- Noise.
- Oil and fuel spillage on soils or highways

6.3.1 Operational Phase Negative Impacts

1. Increased pressure on infrastructure – Stressed up service provision

The additional facility will lead to increased pressure on existing infrastructure such as roads, ground water abstraction, etc. due to the increased number of users. In turn, this may directly translate into increased use of facilities and services.

Recommended Mitigation Measures

a. Relevant authorities such as the Kenya Power and Lighting, WRA should be informed of the capacity of the facility;
b. The proponent will install water-conserving automatic taps and toilets, as well as energy saving electrical fittings to optimize use of public resources;
c. Water leaks through damaged pipes and faulty taps will be fixed promptly by qualified staff.
d. Occupants of the facility should be sensitized to use water efficiently.

2. Pollution – Environmental Degradation

Possible pollution may impact on alteration of soil structure by contaminations from introduced materials, waste water contamination, air pollution as well as noise levels from various sources within the premise.

a. Solid waste generation

Once the proposed project is completed and operational, they are expected to generate a large amount of solid waste on a daily basis whose composition will be dominated by organic waste.

b. Impacts may also result from improper sitting, inadequate design and poor operation of waste disposal facilities.

Recommended Mitigation Measures

a. Clearly designate and construct an appropriate waste collection facility or provide covered refuse skips;

b. Use only NEMA licensed waste transport vehicles to transport waste materials;
c. Maintain a proper waste tracking document; and
d. Ensure adequate fire warning, response and management systems are installed.

c. Wastewater management

There will be an onsite wastewater treatment plant at the site. The EMCA Water Quality Regulations of 2006 requires all facilities that discharge any effluent to the environment to obtain an Effluent Discharge license and to continuously monitor the discharge. The fourth schedule of the Water quality regulations gives a guide on the quality parameters which should be monitored for different types of effluents.

Recommendations

- Incorporate Wastewater treatment plant within the facility;
- Apply for effluent discharge license from NEMA on time;
- Install a water meter to measure the amount of wastewater released from the Golf Course Development on daily basis;
- Carry out an analysis of the composition of the effluent through a NEMA registered laboratory;
- Continuously monitor the discharge as per the regulations.

3. Increased traffic flow – Unnecessary congestion

An increase in the number of vehicles within the area is anticipated which may lead to congestion and pose a threat to accidental occurrences.

Recommended Mitigation Measures

- In case of heavy traffic, an attendant should be employed to direct vehicles during peak periods.

4. Drain blockages – Back flooding

Poor surface drain management or large amounts of effluents may lead to blockage of drains which in turn could result to flooding and unsanitary conditions within the neighborhood. Blocked drains produce bad odour and are a threat to general health, hence are environmentally unfriendly.

Recommended Mitigation Measures

- The proponent should ensure that there are adequate means of handling the large quantities of sewage generated at the facility;
- It will also be important to ensure that septic pipes are not blocked or damaged since such occurrences can lead to release of the effluent, resulting in land and water contamination.
- Such blockages or damages will be fixed expeditiously

5. Vector and rodents breeding grounds – Vulnerability to diseases

If the project does not have well designed storm water drains, the rain water may end up stagnating or intruding neighbouring facilities and hence creating conducive breeding areas for mosquitoes and other water based vectors leading to human diseases like malaria. Poor solid waste management practices may also lead to breeding grounds for pests such as rats and other scavenging animals.

Recommended Mitigation Measures

- The design of the construction should ensure that no space for stagnant water will be retained;
- A well maintained trash collection point should be set aside;
- The proponent should put in place efficient storm water and waste management systems that will prevent the accumulation of rain water and uncontrolled waste, as well as an efficient collection system and recycling;
- Proper monitoring of the premise should be effected for maintenance of health and hygiene.

6. Electricity consumption – pressure on supply

The project shall consume large amount of electricity due to activities that will take place once the project is complete. The Golf Course Development will consume mostly power from the national grid.

Recommended mitigation measures:

- Maximize the contribution of daylight to reduce use of artificial lighting in the buildings;
- Select the most efficient lighting system design and minimum lighting level appropriate for the required application;
- Install energy saving appliances;
- Select the most effective lighting controls for optimal operating efficiency and minimum energy wastage.
- Develop an energy management plan.

7. Water supply and consumption

Water for the project shall be extracted from the existing borehole that has been drilled on site after obtaining abstraction permit from WRA.

Recommended mitigation measures:

- Monitor water consumption;
- Install internal water meters;
- Manage consumption rigorously.
- Installing plumbing fittings, appliances and devices to optimise water use efficiency;
- Recycling of wastewater to reduce water consumption.

8. Oil and fuel Spillage

Oil and fuel spillage not only contribute to accidents but can also damage the soil or water bodies. People handing machinery must be trained on safe practices and proper repair and maintenance to avoid such mishaps.

9. Safety and Health hazards

During operation the use of machinery pose mechanical hazards such as accidental cuts and bruises. There will be storage of flammable liquids such as fuels and lubricants, which at some point will be stored at the workplace for use in vehicles and machines. Leakage, spillage or poor handling of such substances may result in fires that may cause considerable losses in terms of injury to persons and damage to property. Noise levels from the occasioned by use of machinery may pose health hazards also.

Recommended mitigation measures:

- Regular maintenance and use of machinery safeguards i.e. machine fencing and guarding
- Statutory examination of plant and machinery
- Statutory medical examination and surveillance of workers exposed to classified hazards
- Statutory safety and health audits
- Use of appropriate Personal Protective Equipment (PPE)
- Safety and Health training for workers
- Provision of first aid facilities and personnel
- Execution of fire safety training and drills

6.4 Decommissioning

Decommissioning is the process of shutting down an operational facility in a manner that leaves the area in a safe and stable condition that is consistent with the surrounding physical and social environment. The Contractor will ensure that:

- The process of closure occurs in an orderly, cost effective and timely manner with the allocation of adequate resources;
- The anticipated cost of decommissioning is adequately provided for in the project costs.

The Contractor will be expected to:

- Carry out consultations with stakeholders;
- Develop the action plan for demolition including the assigning of roles for the demolition crew;
- Isolate power at the main switch and remove cables up to that point;
- Dismantle, remove and dispose of construction camp equipment and structures in an appropriate environmentally friendly manner;
- Request utility service providers to disconnect the power, water and telephones as may be appropriate;
- Reinstate the land to its natural condition by filling excavations and planting suitable plants.

The Contractor must obtain a Certificate of Satisfactory Decommissioning from the relevant Authorities. In the unlikely event that the facilities is closed down decommissioning would comprise the reduction of all buildings and facilities to a safe condition and the restoration of the land to its original condition. The following will be done:

- Notification of intent to all relevant regulatory agencies;
- Liaise with project Consultants including architects, engineers, and environmentalists to ascertain guidelines, anticipated de-commissioning impacts and mitigation measures.

6.4.1 Decommissioning phase Negative Impacts

During the decommissioning phase, another comprehensive ESIA study based on the intended new use of the site will be conducted. Decommissioning may involve one of the following options: facing out operations and evacuating the premise without carrying out any other plans; change of use of the facility; demolition of the property to restore it to the current or better status.

1. Solid Waste Generation

Demolition of the facilities and related infrastructure 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. In addition, even the generally non-toxic chemicals such as chloride, sodium, sulphate and ammonia which may be released as a result of leaching of demolition waste, are known to lead to degradation of groundwater quality.

2. Dust

Large quantities of dust will be generated during demolition works. This will affect demolition staff as well as the neighbouring residents.

3. Noise and Vibration

The demolition works will lead to significant deterioration of the acoustic environment within the project site and the surrounding areas. This will be as a result of the noise and vibration that will be experienced as a result of demolishing the proposed project.

Table 3: Summary of major impacts and their proposed mitigation measures

Project stage	Potential Impact	Proposed Mitigation
Construction/equipment installation stage	▪ Noise and vibration pollution	▪ Switching off machines while not in use ▪ Proper servicing of machines
	▪ Material and equipment Transport	▪ Restrict working hours to periods which are not associated to human disturbances especially the recommended working hours 8.00 am – 5.00pm ▪ Provide workers with ear masks. ▪ Regular servicing of working machines ▪ As far as possible, transport of construction materials should be scheduled for off-peak traffic hours. ▪ Appropriate traffic warning signs, informing road users of a construction site entrance ahead and instructing them to reduce speed, should be placed along the main road in the vicinity of the entrance to the site during the construction period. ▪ Flagmen should be employed to control traffic and assist construction vehicles as they enter and exit the project site. ▪ Issue notices/advisories of pending traffic inconveniences and solicit tolerance by local residents before the commencement of construction works. ▪ Assign traffic regulators to places during periods of chronic or potential traffic congestions. ▪ Set relatively low speed limit within the site. ▪ Encourage transport vehicle owner to insure their vehicles on regular basis. ▪ Discourage parking near the entrance or exit routes.
	▪ Material and equipment stockpiling & storage	▪ The stockpiling of construction materials should be properly controlled and managed. Fine-grained materials (sand, marl, etc.) should be stockpiled away from any surface drainage channels and features. ▪ Low berms should be placed around the piles of sand and marl and/or tarpaulin used to cover open piles of these materials to prevent them from being washed away during rainfall. ▪ Safe storage areas should be identified and retaining structures put in place prior to the arrival and placement of material and equipment ▪ Materials and equipment to be delivered on site in installments.
	▪ Soil Erosion	▪ Stage site clearance works so as to minimize the area of exposed soil at any given time.

Project stage	Potential Impact	Proposed Mitigation
		▪ Re-cover exposed soils with grass and other ground cover as soon as possible. ▪ Temporarily bund exposed soil and redirect flows from heavy runoff areas that threaten to erode or result in substantial turbid surface runoff to adjacent drainage waters. ▪ Monitor areas of exposed soil during periods of heavy rainfall throughout the construction phase of the project to ensure that any incidents of erosion are quickly controlled. ▪ Leveling of the project site to reduce run-off velocity and increase infiltration of storm water into the soil, therefore avoid compaction where possible.
	▪ Workers safety and health	▪ Provide workers with reflective garments. ▪ Regular maintenance and safeguarding of working machines. ▪ Train workers on manual handling techniques. ▪ Deploy an expert to lead first aid administration. ▪ Provision of adequate safety equipment and enforce on their usage. ▪ Discourage trespass. ▪ Erect signage on the ongoing activities ▪ Provide workers with personal protective equipment ▪ Provide implement safe systems and programs
	▪ Construction debris and other rejected construction materials.	▪ Reduce wastes from the point of generation by purchasing high standard and recommended materials. ▪ Instruct workers to avoid damage of working materials. ▪ Contract NEMA registered garbage collector to collect waste on regular basis. ▪ Embrace the 3R's concept (Reduce, Reuse and Recycle).
	▪ Dust generation and aerosol emission	▪ Sprinkle water to harness dust level. ▪ Provide workers with dust masks.
	▪ Landscape and ecosystem change	▪ Once the project is completed any bare land will be re-vegetated with indigenous grass, shrubs and trees ▪ Landscaping will be done to reduce any negative impacts ▪ Only specified areas of construction will have vegetation cleared ▪ protecting the existing individual trees as much as possible

Project stage	Potential Impact	Proposed Mitigation
	▪ Water supply	▪ Provide adequate water storage reservoirs on the construction site to meet project needs during periods of high demand externally and refill the tanks during periods of low demand (e.g. late at night). ▪ Engaging water supply tankers in case of total supply failure.
Operation Stage	▪ Water use	▪ A Sustainable Water Management System Plan should be developed in collaboration with WRA to minimize impact to natural systems by managing water use, avoiding over-abstraction of the groundwater aquifers, and minimizing impacts to other water users; ▪ Harvest rain water; ▪ The Golf Course Development to install water conserving taps.
	▪ Waste water	▪ Oil interceptors and sediment traps should be installed and maintained to ensure any discharge to the environment carries a low sediment load. ▪ Storm water management canals should be maintained and kept clean in order to ensure that the capacity of such systems is not compromised during the life of the operations ▪ Apply for effluent discharge license from NEMA on time; ▪ Install a water meter to measure the amount of water waste water released from the Golf Course Development on daily basis; ▪ Carry out an analysis of the composition of the effluent through a NEMA registered laboratory; ▪ Continuously monitor the discharge as per the regulations; ▪ The company to construct drainages throughout the Golf Course Development to direct storm waters to the lake after lab testing and treatment if necessary.
	▪ Air pollution levels	▪ Dust rising during the construction can be kept down by sprinkling water on the site; ▪ In the event of strong winds, work should stop ▪ Utmost care to be taken while handling cement and rock sand product ▪ Construction materials must be properly stacked ▪ Inculcate a sense of environmental responsibility in the work force ▪ Utilize labour intensive construction method ▪ Materials should be brought on site on scheduled and organized periods

Project stage	Potential Impact	Proposed Mitigation
		▪ Construction materials like cement and sand should be carefully handled during offloading and storage; ▪ The facility site should be appropriately screened; ▪ Dispose of debris from the construction site by licensed waste trucks to authorized dumping sites.
	▪ Drain blockages	▪ The proponent should ensure that there is adequate means of handling large quantities of sewage blockages as well as related emergency situations. ▪ Proper monitoring at waste generation points should be established. A site management plan should be put in place.
	▪ Increased pressure on infrastructure	▪ The proponent should maintain close operations with service providers such as the Kenya Power and Lighting Company, WRA etc. ▪ Principles of Cleaner Production should be applied to ensure optimal system performance.
	▪ Fire outbreak	▪ Install and regularly maintain firefighting equipment ▪ Clearly labeling fire exit routes. ▪ Constitute a fire fighting team ▪ Staff to be made clearly aware of fire hazards
	▪ Vector breeding grounds	▪ Include an efficient storm water and waste management systems that will prevent the accumulation of rain water ▪ All trenches and drains should be kept clear of all debris
Decommissioning stage	▪ Loss and damage of properties during demolition activities	▪ Removal of properties that are not intended to be destroyed before the actual demolition process. ▪ Proper supervision during demolition activities.
	▪ Loss of employment opportunities	▪ A good phase out programme for employees should be put in place from the onset of the project.
	▪ Accidents to the demolishing team.	▪ Issue the workers with reflective garments. ▪ Supervisors to ensure measures in place for the worker and ensure that no one is at risk by falling objects.

Project stage	Potential Impact	Proposed Mitigation
	▪ Loss of environmental aesthetics beauty.	▪ Ensure complete collection and disposal of wastes after demolition ▪ Landscaping the affected areas. ▪ Conduct a decommissioning audit.

7. PROJECT ALTERNATIVES

The findings and recommendations in this section are based on the proposed site, the materials and the proposed technologies to be used in the construction of the Proposed Golf Course Hotel Development.

7.1 Site alternative

The project land was registered as the proponent's in anticipation of putting up the proposed development. Bearing in mind that the land owner does not have another site, this means that he has to look for land elsewhere. Searching for land to accommodate the space and size of the project and completing official transaction may take a long time although there is no guarantee that such land could be available in the area. The developer will spend another one year on design and approvals since design and planning has to be according to the site conditions. Project design and planning before the stage of implementation will cost the developer a large sum of money. Whatever has been done and paid up to this level will be counted as a loss to the developer.

Assuming the proposed project will be given a positive response by the relevant authorities including NEMA, the project would have been delayed for about two year's period before implementation. This would also lead to a situation like no other project alternative option; the other consequences of this would be a discouragement to local/private investors. From the bone statements relocation of the project to different site is not viable hence it's ruled out.

7.2 Alternative Design and project phasing

The proposed development is part of the future integrated Water Front real estate development in a gated community to be implemented by proponent in phases. It will have all the amenities needed and the requisite infrastructure for a modern world class waterfront development including Hospitality development (Hotels and Restaurants); Commercial development; Residential development; Hospitals and Clinics; Educational centres and Police post. The project is envisaged to be developed in a synergistic and sequenced/phased manner to create an economically and environmentally sustainable community of approximately 5,000 people. The project is envisaged to be developed in a synergistic and sequenced/phased manner to create an economically and environmentally sustainable community. Full development of the project is envisaged to take 12-15 years with part phases being completed every 2-3 years.

The Proponent has proposed to begin with the Proposed Golf Course Hotel Development as the initial phase. The design plans for the development were undertaken with reference to the most attractive enterprise, available capital, locally available material and environment. The design of the facility was undertaken with a view to providing the most suitable, comfortable and attractive facilities for the expected users.

7.3 Alternatives to Technology and Construction Materials

The proposed project will be constructed using modern, locally and internationally accepted materials to achieve public health safety, security and environmental aesthetic

requirements. Equipment that save energy and water will be given first priority without compromising on cost or availability factors. Heavy use of timber during construction is discouraged because of massive destruction of forests. The exotic species would be preferred to indigenous species in the construction where need will arise. However, this housing methods and technologies to be used will require very little timber.

The facility will utilize the facilities of KPLC and the available water from the existing borehole on site. The proponent should consider the use of solar energy to augment KPLC supply particularly for security purposes at night. Installation of Power generators should also be considered to be used only in case of power outages. The proponent is advised to install underground water tanks to harness rain water and store for emergencies and supplement the borehole water. Harvesting of rain water will also be an alternative that will reduce pressure on the storm drains within the site.

7.4 "No Project" Alternatives

The no project alternative option in respect to the proposed project implies that the status quo is maintained. This option is the most suitable alternative from the extreme environmental perspective as it ensures non-interference with the existing conditions. Under no project alternative, the proponent's proposal would not receive the necessary approval from NEMA, proposed project would not be constructed and there would be no demand for the development. This option will however, involve several losses both to the land owner and the community as a whole. The land will appreciate in value while the land remains idle but there will be no infrastructural development in the area. The no project option is the least preferred from the socio-economic and partly environmental perspective due to the following factors;

- Discouragement for investors.
- No employment opportunities will be created for Kenyans bearing in mind that the proposed project will have employment opportunities both directly or indirectly during construction and operations phases and thus improve lifestyles and livelihoods.
- Local skills would remain underutilized.
- Development of infrastructural facilities (roads, electrical etc. will not be undertaken).
- Vision 2030 will be far from implementation bearing in mind that this is one of the first projects gearing towards realization of vision 2030.

From the analysis above, it becomes apparent that the No Project alternative is no alternative to the local people, and the government of Kenya.

8. ENVIRONMENTAL MANAGEMENT PLAN

8.1 Introduction

The Environmental Management Plan involves the protection, conservation and sustainable use of the various elements of the environment. The EMP for the proposed project provides all the de tails of its activities, impacts, mitigation measures and expected costs during implementation and decommissioning phases of the project. This project bears the potential of a number of negative impacts on the environment. With proper environmental management procedures in place and adhered to then there should be minimal negative impact of concern emanating from it. Key areas that require mitigation measures include wastewater, solid wastes, maintaining good air quality, safety, and storm water management.

The table below indicates measure for Environmental Management Plan

Table 4: Environmental Management Plan (EMP)

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
Construction/equipment installation phase				
Extraction of raw material	▪ Land-use and Landscape change ▪ Poor visual quality ▪ Water abstraction	▪ Source material from supplies that use environmentally friendly processes in their operation. ▪ Ensure accurate budgeting and estimation of actual construction material requirement to ensure that the least amount of material necessary is ordered. ▪ Ensure that damage or loss of material at construction site is kept minimal through proper storage. ▪ Use at least 5%-10% recycled, refurbished, or salvaged materials to reduce the use of raw material and divert material from land fill. ▪ Obtain permit from WRA permit to for borehole water abstraction. ▪ The tender documents should specify required standards and certification for procurement of all materials and appliances; ▪ Steel scaffolding should be used in preference to timber and the Contractor should ensure that sufficient quantities of scaffolding are available for hire at the time of construction. ▪ All construction materials should be from approved sources; for example, hard stone for building should be obtained from NEMA licensed sites and bona fide commercial quarries.	▪ Proponent and Contractor ▪ WRA, NEMA	▪ As per BQ and agreement with Contractor
Removal/ clearing of vegetation	▪ Exposing ground to agents of soil erosion ▪ Loss of terrestrial habitat & biodiversity ▪ Permanent loss of vegetation	▪ Proper demarcation and delineation of the project site to be affected by construction work ▪ Specify location for trucks and equipment, and areas of the site which should be kept free from traffic, equipment and storage. ▪ Designate access route within the site ▪ Design and implement an appropriate landscaping program to help in re- vegetation of part of the project site after construction	▪ Proponent and contractor ▪ WRA	▪ 100,000 for landscaping

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
	▪ Habitat fragmentation ▪ Interruption of ecological corridors and migration paths ▪ Erosion and stream sedimentation ▪ Draining of wetlands	▪ Mapping out the Lake riparian reserve as a conservation zone and ensuring Protection of wetlands and the existing vegetation as much as possible and in line with applicable rules, regulations and standards. ▪ Set a replanting and landscaping programme that focuses on increasing "green area"		
Sewage and effluent	▪ Pollution	▪ Provide adequate sanitary facilities for workers, ▪ Provide solid waste receptacles and storage containers, particularly for the disposal of plastic bags boxes, so as not to block drainage system and to prevent littering of the site.	▪ Proponent and contractor	▪ As per BQ and agreement with Contractor
Movement of vehicle at the site	▪ Compaction of soil ▪ Interference with soil structure leading to low water infiltration	▪ Apply soil erosion control measures such as levelling of the project site to reduce run-off velocity and Increase infiltration of storm water into the soil. ▪ Ensure that construction vehicles are restricted to existing graded roads to avoid soil compaction within the project site, ▪ Ensure that any compacted areas are ripped to reduce run-off. ▪ Storm water drainage lines be well constructed to reduce incidence of pounding and flooding	▪ Proponent and contractor	▪ As per BQ and agreement with Contractor
Utilization of construction materials	Generation of wastes leading to: ▪ Wastage of resources/ materials ▪ Health risk to the worker and environment	▪ Through accurate estimation of quantities of materials required, order materials in the sizes and quantities they will be needed, rather than cutting them to size, or having large quantities of residual materials. ▪ Ensure that construction materials left over at the end of construction will be used in other projects rather than being disposed off.	▪ Constructor and his workers	▪ As per BQ and agreement with Contractor

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
	▪ Reduced aesthetic value of the site ▪ Blockage of drainage systems ▪ Chocking water bodies	▪ Ensure that damaged or waste materials including cabinet, doors, plumbing, and lighting fixtures, marble and glasses will be recovered for refurbishing and use in other projects ▪ Reducing the amount of construction waste generated over time ▪ Provide facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements ▪ Purchase of perishable construction materials such as paints should be done incrementally to ensure reduced spoilage of unused materials ▪ Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste ▪ Maintain a proper waste tracking document ▪ Ensure adequate fire warning, response and management systems are installed. ▪ Hazardous wastes, such as waste oils and grease to be collected in secure storage facilities on-site to prevent accidental release that may result in contaminated run-off and leaching. ▪ Storage areas for hazardous material to be cemented to provide an impervious surface and to prevent uncontrolled discharges to groundwater. ▪ Contract a NEMA licensed waste handler to collect waste oil, waste tyres and general office and domestic wastes. ▪ Practice the 6Rs (Reuse, Recover, Refill, Return, Recycle) of waste Management. ▪ Training of workforce on matters health, safety and environment with regards to waste and its effects.		

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
Dust emission from movement of transportation vehicles at the site and on the road	▪ Air pollution ▪ Causing breathing problems to the workers and the neighbourhood ▪ Blockage of fauna stomata	▪ Sprinkle water on graded access routes each day to reduce dust generation by construction vehicles ▪ Controlling the speed of vehicles on the site ▪ Watering open soil or storage sites ▪ Selecting transportation routes ▪ Provide worker with dust masks ▪ Spiro metric examination on exposed workers at prescribed interval of time	▪ Constructor and his workers	▪ As per BQ and agreement with Contractor
Utilization of fossil fuel by fuel consuming machineries.	▪ Emission of carbon gas into the atmosphere leading to global warming ▪ Exhaustion of fossil fuel resource ▪ Air pollution ▪ Can Lead to breathing problems	▪ Ensure proper planning of transportation of materials to ensure that vehicle fills are increased in order to reduce the number of trips done per vehicle or the number of vehicles on the road. ▪ Sensitize truck drivers to avoid unnecessary racing of vehicle engines at adding/offloading points and parking areas, and to switch off or keep vehicle engines when not in use ▪ Prompt servicing of vehicles engines ▪ Use of unleaded and low sulphur fuel ▪ Monitor energy use during construction and set target for reduction of energy use.	▪ Contractor and Drivers	▪ As per need
Noise and vibration	▪ Noise generation ▪ Hearing problem	▪ Sensitize construction drivers to avoid gunning of vehicle engines or hooting especially when passing through sensitive areas such as churches, schools, residential areas and hospitals ▪ Sensitize construction vehicle drivers and machinery operators to switch of vehicle or machinery not being used. ▪ Ensure that all heavy duty equipment are insulated or placed in enclosures to minimize ambient noise levels. ▪ Measure to ensure that noise levels does not exceed 75dB(A) ▪ Attenuation of any sound that may affect the inner ear by use of earplugs and earmuffs. ▪ Audio metrical examination of workers at prescribed intervals	▪ Constructor and Workers	▪ 50,000

Environmental parameter	**Impact**	**Mitigation measure**	**Responsible party**	**Costs (KES)**
Water consumption	▪ Excessive use / misuse of water ▪ Generation of excess waste water ▪ Water pollution	▪ Prompt reuse and recycling of water as much as possible where necessary ▪ Install a discharge meter at water outlet to monitor and determine total water usage. ▪ Monitor water consumption and utilization; ▪ Sensitize construction workers on the importance of proper water management; ▪ All wastewater should be drained into approved drainage facilities.	▪ Contractor and his workers	▪ 150,000
Approval of building plan	▪ The development being in alignment with the County Integrated Development Plan (CIDP)	▪ Ensure that the Change of Use is effected and plans are approved by the County Government, Physical Planner and the local Occupational Health and Safety Office	▪ The proponent	▪ Gazetted fee
Incident, accidents, and dangerous occurrences	▪ To enable relevant authorities to monitor incidence occurrences and take necessary measure to minimize them.	▪ Ensure that provisions for reporting incidents, accidents and dangerous occurrences during construction using prescribed forms obtainable from the local Occupational Health and Safety Office (OHSO) are in place.	▪ Contractor and his workers	▪ Gazetted fee
Safety, health and environment (SHE) policy	▪ To give guidelines on how one is to protect himself within a given premises against any incident.	▪ Develop, document and display prominently an appropriate SHE policy for construction works	▪ Contractor	▪ 5,000

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
Personal protective gears	▪ To protect against any infection or injuries while at work.	▪ Suitable overalls, safety footwear, dust masks, gas masks, respirators, gloves, ear protection equipment etc. should be made available and construction personnel must be trained on their use.	▪ Contractor	▪ 100,000
Supply of clean water	▪ Ensure good health as dirty/untreated water leads to water borne diseases.	▪ Ensure that construction workers are provided with an adequate supply of wholesome drinking water which should be maintained at suitable and accessible points.	▪ Contractor	▪ 100,000
Storage of materials	▪ Can cause accident, material wastage and spoilage, and reduced aesthetic value.	▪ Ensure that materials are stored or stacked in such manner as to ensure their stability and prevent any fall or collapse	▪ Contractor	▪ 5000
First aid	▪ To ensure that when any injury occur it can be taken care of before main treatment at a hospital or a dispensary.	▪ Well stocked first aid box which is easily available and Accessible should be provided within the premises ▪ Provision must be made for persons to be trained in first aid, with a certificate issued by a recognized body.	▪ Contractor	▪ 40,000
Safety and security	▪ Destruction and stealing of materials on site.	▪ Ensure the general safety and security at all times by providing day and night security guards and adequate lighting within and around the construction site. ▪ The Contractor should ensure strict safety management through close attention to design, work procedures, materials and equipment; ▪ Develop a site safety action plan detailing safety equipment to be used, emergency procedures, restrictions on site, frequency and personnel responsible for safety inspections and controls;	▪ Contractor	▪ 100,000

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
		▪ All workmen should be provided with personal protective equipment (e.g. nose masks, ear muffs, helmets, overalls, industrial boots, etc.); ▪ There should be regular site reporting on health, safety and environment (HSE) issues by an appointed HSE representative, daily site inspections should be done to ensure safe work practices are adhered to; ▪ All injuries that occur on site must be recorded in the accident registers and corrective actions for their prevention be instigated as appropriate (Section 62 of the Factories and Other Places of Work Act); ▪ Statistical records on accidents and incidents should be collated and analysed on a monthly basis and forwarded to the contractor and / or displayed on the notice boards; ▪ Site personnel should be encouraged to report "near-miss incidents" in order to avoid potential problems and increase safety awareness.		
Fire Hazards	▪ Destruction of property and lives	▪ Provide adequate number of appropriate firefighting equipment as well as fire exit options. ▪ Ensure inspection and maintenance of fire equipment ▪ A fire escape route and an emergency assembly point should be clearly indicated ▪ Form and train firefighting team ▪ Conduct regular fire drills	▪ Contractor and proponent	▪ 200,000
Construction traffic:	▪ Disruption of local traffic; ▪ Potential for accidents.	▪ The Contractor should plan itineraries for site traffic. ▪ Issue notices/advisories of pending traffic inconveniences and solicit tolerance by commuters before the commencement of construction works.	▪ Contractor	▪ 50,000

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
		▪ Assign traffic regulators to places during periods of chronic or potential traffic congestions. ▪ Prepare & provide appropriate signage & trained flag persons where the movement of heavy machinery and construction equipment may cross the main roads.		
Influx of construction workers into the area:	▪ Proliferation of informal kiosks in the area; Increase in transport demand. ▪ Road side vending	▪ Develop a catering program on site for construction staff; ▪ Provide transportation for the workforce to and from the site; ▪ The contractor should identify, demarcate and fence a specific area within which specific number vendors will be allowed to operate. ▪ The vendors should be instructed to maintain the area in a tidy fashion and litter bins should be provided with arrangements in place to have the contents of these emptied on a regular basis and disposed of appropriately.	▪ Contractor	▪ 100,000
Energy utilization	▪ Energy consumption	▪ Develop an energy management plan; ▪ Construction machinery and vehicles should be maintained and used in accordance with manufacturer's specifications, to maximize efficiency and lower use of energy, e.g. drivers of construction vehicles should be instructed not to leave them idling for extended periods; ▪ Construction workers should be sensitized on the importance of energy management.	▪ Contractor	▪ 20,000
Ergonomic	▪ Bad posture may lead to body structural disorder.	▪ Provision for repairing and maintaining of hand tools must be in place ▪ Hand tools must be of appropriate size and shape for easy and safe use ▪ Height of equipment, controls or work surfaces should be positioned to reduce bending posture for standing workers	▪ Contractor	▪ 20,000

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
Operation phase				
Solid waste generation	▪ Generation of general Solid wastes leading to pollution of water bodies, air impairment when decomposing hence odours, and reduction in aesthetic value of the compound.	▪ Provision of dirt bins/skips at strategic points of the compound ▪ Disposal at the designated site, ▪ Awareness creation among workers ▪ Practice reuse and recycling methods as much as possible where applicable. ▪ Display portraits like “Don’t Litter”, “Keep Environment Clean”	▪ Proponent	▪ Waste collection as per rates
Hazardous waste generation	▪ Pollution of surface or ground water due to oil spillage	▪ Hazardous wastes, such as waste oils and grease to be collected in secure storage facilities on-site to prevent accidental release that may result in contaminated run-off and leaching. ▪ Storage areas for hazardous material to be cemented to provide an impervious surface and to prevent uncontrolled discharges to groundwater	▪ Proponent	▪ Waste collection as per rates
Accidents and injuries	▪ Machine safety (improper use and maintenance of machines)	▪ All plant, machinery and equipment should only be used for work which they are designed for and be operated by a competent person. ▪ Insist on regular servicing of electrical fittings and appliances by qualified personnel. ▪ Every machine intended to be driven by mechanical or any other type of power should be provided with safeguards and an efficient starting and stopping appliance, the control of which should be in such a position as to be readily and conveniently operated by the person operating the machine.	▪ Proponent	-

Environmental parameter	**Impact**	**Mitigation measure**	**Responsible party**	**Costs (KES)**
Occupational health and Safety	▪ Accidents and injuries	▪ The premise must be kept clean, daily removal of accumulated dust from floors, free from effluvia arising from any drain, sanitary convenience or nuisance ▪ The premise must not be overcrowded, there must be in each room 10 metres of space for each employee, not counting space 14 feet from the floor and a 9 feet floor-roof height. ▪ The circulation of fresh air must secure adequate ventilation of workrooms. ▪ There must be sufficient and suitable lighting in every part of the premise in which persons are working or passing. ▪ There should also be sufficient and suitable sanitary conveniences separate for each sex, ▪ Management should ensure provision of suitable protective clothing and appliances including where necessary, suitable gloves, footwear, goggles, gas masks, and head covering, and maintained for the use of workers in any process involving expose to wet or to any injurious or offensive substances ▪ Management should ensure training and supervision of inexperienced workers ▪ An adequate supply of both quantity and quality of wholesome drinking water must be provided. ▪ Maintenance of suitable washing facilities, accommodation for clothing not worn during working hours must be provided. ▪ Provision of well-equipped First Aid kits and /or ready transport facilities to hospital.	▪ Proponent	▪ 100,000

Environmental parameter	**Impact**	**Mitigation measure**	**Responsible party**	**Costs (KES)**
Use of sanitary room (toilets and urinal)	▪ Generation of sewage(liquid waste),Water pollution, Air pollution (odour) ▪ Reduced aesthetic value	▪ Incorporate grease traps ▪ Conduct regular inspections for sewerage pipe blockages or damages and fix appropriately ▪ Ensure regular monitoring of the sewage discharged ▪ Reuse, recycle waste water where necessary ▪ Ensure adequate water supply for flushing and to ensure the waste is carried to the sewerage system without causing blockage. ▪ Ensure flashing toilet after use though Avoid unnecessary flushing ▪ Apply for effluent discharge license	▪ Proponent ▪ NEMA	▪ 150,000
Water Consumption	▪ Overutilization of water	▪ Monitor water consumption ▪ Apply for water abstraction permits from WRA ▪ Install internal water meters. ▪ Installing plumbing fittings, appliances and devices to optimize water use efficiency; ▪ Recycling of wastewater to reduce water consumption.	▪ Proponent/ Contractor ▪ WRA	▪ As per BQ
Waste management	▪ Drain blockages	▪ The proponent should ensure that there is adequate means of handling large quantities of sewage blockages as well as related emergency situations. ▪ Proper monitoring at waste generation points should be established.	▪ Proponent/ Contractor	▪ As per BQ
Use of energy	▪ Overutilization of hydropower ▪ Overloading hydropower grid	▪ Switch off electrical equipment, appliances and lights when not being used ▪ Install energy saving fluorescent tubes at all lighting points within the facility instead of bulbs which consume higher electric energy ▪ Sensitize occupants of the facility to use energy efficiently ▪ Plant trees within the compound and along the fence.	▪ Proponent	▪ -

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
Electricity use	▪ Explosions/Fire outbreaks causing injuries and destruction of properties	▪ Regular maintenance of fire extinguishers ▪ Proper electric connections. ▪ Circuit must not be overloaded ▪ Distribution boards switches must be clearly marked to indicate respective circuits ▪ No live exposure connection ▪ Electrical fittings near all potential sources of ignition should be flame proof	▪ Proponent/Contractor	▪ As per BQ and need
Ventilation	▪ Suffocation and lack of clean air may lead to discomfort of the occupants in the facility.	▪ Enough space must be provided within the premises to allow for adequate natural ventilation through circulation of fresh air	▪ Proponent ▪ Contractor	▪ As per BQ
Vector/rodents breeding grounds	▪ Diseases and infections	▪ Ensure that there is no space for unplanned stagnant water retained in the fields. ▪ Recommended measures should be applied when dealing with rodents and food storage. ▪ A monitoring programme should be put in place for controlling relative cases observed.	▪ Proponent	▪ As per need
Lighting	▪ Lack of enough light in the facility may lead to eye straining hence eye problems	▪ There must be adequate provision for artificial and natural lighting in the facility.	▪ Proponent	▪ As per BQ
Decommissioning Phase				
Demolition activity	▪ Lead to accident from falling, and flying objects.	▪ Develop a decommissioning EIA	▪ Proponent and the contractor	▪ Develop BQ and project budget

Environmental parameter	Impact	Mitigation measure	Responsible party	Costs (KES)
	▪ Generation of construction waste ▪ Reduced aesthetic value of that place ▪ Destruction of soil structure ▪ Lead to soil erosion hence water pollution			

9. CONCLUSION AND RECOMMENDATIONS

This Study Report has been prepared to provide sufficient and relevant information on the proposed project to enable NEMA to establish whether activities of the project are likely to have significant adverse environmental impacts. Mitigation measures have been proposed for identified impacts in this report and an Environmental Management Plan (EMP) for the implementation of the proposed measures has been presented. The EMP presented in this report is a tool to be used by the Project Team during the construction, hand-over and operation periods.

To ensure implementation, mitigation measures should be reflected in the Conditions of Contract and Bills of Quantities. It is the responsibility of the Proponent to ensure these measures are incorporated into these two documents.

It is recommended that the available waste management systems must be monitored and upgraded (where necessary) to ensure that they adequately handle the anticipated increase in waste and by- products.

In this respect the project can proceed on condition that the concerns are addressed the proposed mitigation measures are implemented and an EIA license issued with the above conditions taken fully into account amongst any others.

REFERENCES

1. Republic of Kenya (2015). The Environmental Management and Co-ordination Act, No. 5 of 2015. Government Printer, Nairobi.
2. Republic of Kenya (2016). Laws of Kenya: The Water Act, Cap 372. Government Printer, Nairobi.
3. Republic of Kenya (2003). Legislative Supplement No. 31, Legal Notice No. 101: The Environmental (Impact Assessment and Audit) Regulations, 2003. Government Printer, Nairobi
4. Regulations, 2006. Government Printer, Nairobi. Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009. Government Printer, Nairobi
5. Kenya Gazette Supplement Acts Public Health Act (Cap. 242). Government Printer, Nairobi.
6. Kenya Gazette Supplement Acts Water Act, 2016. Government Printer, Nairobi.
7. Kenya Gazette Supplement Acts. Environmental Management and Coordination (Water Quality) Regulations, 2006. Government Printer, Nairobi.
8. Kenya gazette supplement number 56. Environmental (Impact Assessment and Audit) Regulations, 2003. Government Printer, Nairobi.
9. Kenya Gazette Supplement Number 69. Environmental Management and Coordination (Waste Management) Regulations, 2006. Government Printer, Nairobi.
10. Occupational Safety and Health Act, 2007
11. Kisumu County Integrated Development Plan (CIDP)
12. World Bank (1991), Environmental Assessment sourcebook volume I: Policies, procedures and cross-sectoral issues. World Bank, Washington.
13. WHO Covid-19 safety measures and regulations at workplace

ANNEXURE

Annex 1: NEMA Approved TOR

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

Mobile Lines: 0724-253 398, 0723-363 010, 0735-013 046
Telkom Wireless: 020-2101370, 020-2183718
Incident Lines: 0786-101100, 0741-101100

P.O. Box 67839, 00200
Popo Road, Nairobi, Kenya
E-mail: dgnema@nema.go.ke
Website: www.nema.go.ke

NEMA/TOR/5/2/382 **20th January, 2022**

Director General,
Rambara Company Limited,
P O Box 897-40100
KISUMU

RE: ACKNOWLEDGEMENT AND APPROVAL OF TERMS OF REFERENCE (TOR) FOR ENVIROMENTAL IMPACT ASSESSMENT

We acknowledge the receipt of TOR for the above subject.

Pursuant to the Environmental Management and Coordination Act, 1999 the second schedule and the Environmental (Impact Assessment and Audit) Regulations 31 and 35, your terms of reference for the Environmental Impact Assessment (EIA) for the proposed **GOLF COURSE HOTEL DEVELOPMENT ON LR NO. KSM/KANYAWEGI/9676 LISUKA VILLAGE, KANYAWEGI SUB-LOCATION, SOUTH WEST KISUMU LOCATION, KISUMU WEST SUB-COUNTY, KISUMU COUNTY** has been approved.

You shall submit ten (10) copies, a soft copy summarised version of the ESMP in **WORD** form and one electronic copy of your report prepared by a registered expert to the Authority.

MARRIAN KIOKO
HEAD EIA SECTION

TOR 382

TERMS OF REFERENCE

FOR THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDY FOR THE PROPOSED GOLF COURSE HOTEL DEVELOPMENT ON LR NO. KSM/KANYAWEGI/9676 LISUKA VILLAGE, KANYAWEGI SUB-LOCATION, SOUTH WEST KISUMU LOCATION, KISUMU WEST SUB COUNTY, KISUMU COUNTY.

PROJECT PROPONENT:

RAMBARA COMPANY LTD
P.O. BOX 897, 40100
KISUMU, KENYA

GOMAKE CONSULTANCY COMPANY LTD
P.O. BOX 5540-00100
NAIROBI
NEM REG, NO.: 8511
EMAIL: info@gomakeltd.co.ke

JANUARY 2022

Document Authentication

These Terms of Reference (ToR) for the above mentioned project have been prepared by Gomake Consultancy Company Ltd; NEMA registered and licensed EIA/EA Firm of Experts.

This ToR has been done with reasonable skills, care and diligence in accordance with the Environmental Management and Coordination Act 1999 and the Environmental (Impact Assessment and Audit) Regulations 2003.

We the undersigned, certify that the particulars given in this ToR are correct, complete, accurate and righteous to the best of our knowledge and will be sufficient to provide adequate and informative Environmental and Social Impact Assessment on the Proposed Golf Course Hotel Development.

PROJECT PROPONENTS

RAMBARA COMPANY LTD
P.O. BOX 897, 40100
KISUMU, KENYA

RAMBARA COMPANY LIMITED
18 JAN 2022
P. O. Box 897 - 40100, KISUMU

Signature.....**Date**.....18/1/2022

EIA/EA FIRM OF EXPERTS

GOMAKE CONSULTANCY COMPANY LTD
P.O. BOX 5540-00100
NAIROBI
NEM REG, NO.: 8511
EMAIL: info@gomakeltd.co.ke

Signature.....**Date**.....18/1/2022

GOMAKE CONSULTANCY COMPANY LTD.
P. O. Box 5540 - 00100, NAIROBI-KENYA
TEL: 0780964 333
Email: info@gomakeltd.co.ke

Annex2: Proponent's Registration and PIN

No. CPR/2013/100431

CERTIFICATE OF INCORPORATION

I hereby CERTIFY, that -

RAMBARA COMPANY LIMITED

is this day Incorporated under the Companies Act (Cap. 486) and that the Company is **LIMITED**.

GIVEN under my hand at Nairobi this **26 th** day of **April** Two Thousand and **Thirteen**

Registrar Of Companies

KENYA REVENUE AUTHORITY

Taxpayer Registration Certificate

Document Number: 8540417

General Data of the Taxpayer

Name	RAMBARA COMPANY LIMITED		
Taxpayer PIN	P051427111R	TaxPayer Category	DOMESTIC
Registration Date	Jul 5, 2013		
Activity	Others		

Contact Information

District	NAIROBI EAST	City/Town	NAIROBI CITY (EAST)
Street / Road	KENYATTA AVENUE	Building	PHOENIX HOUSE
Area Name	20	LR Number	
P.O. Box	00100 - 10110		
Main Email Address	mikemg84@yahoo.com		

Tax Obligation	Obligation Register Date
VAT TAX (VAT 3)	JUN 30, 2013

*This certificate is computer generated and therefore not signed. It is valid certificate issued under the authority of KRA.

Annex 3: Land ownership documents

REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

(*No.* 3 *of* 2012, *section* 108)

THE REGISTERED LAND ACT

(*Chapter* 300) (REPEALED)

Title Deed

Title Number KISUMU/KANYAWEGI/9676

Approximate Area (10.40) HA.

Registry Map Sheet No. 15

This is to certify that RAMBARA COMPANY LIMITED

OF P.O. BOX 101100-00100, NAIROBI.

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 to such of the overriding interests set out in section 28 of the Land Registration Act (No. 3 of 2012) as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the

KISUMU District Land Registry

this 11TH day of NOVEMBER 20 14

Land Registrar

P. N. Njeru 238

(To be completed only when the applicant has paid the fee of Sh. 125)

At the date stated on the front hereof, the following entries appeared in the register relating to the land:

EDITION: 1

OPENED: 31.10.2014

PART A—PROPERTY SECTION

REGISTRATION SECTION	EASEMENTS, ETC.	NATURE OF TITLE
KISUMU/KANYAWEGI .		
PARCEL NUMBER		
9676		
APPROXIMATE AREA		ABSOLUTE
(10.40) Ha.		
REGISTRY MAP SHEET No.		
15		

SUB-DIVISION OF PLOT NO. 9453

PART B—PROPRIETORSHIP SECTION

ENTRY NO.	DATE	NAME OF REGISTERED PROPRIETOR	ADDRESS AND DESCRIPTION OF REGISTERED PROPRIETOR	CONSIDERATION AND REMARKS	SIGNATURE OF REGISTRAR
1.	31.10.2014	RAMBARA COMPANY	LIMITED P.O. BOX 101100-00100, NAIROBI.		
2.	11.11.2014	TITLE DEED		ISSUED.	

PART C—ENCUMBRANCES SECTION

Entry No.	Date	Nature of Encumbrance	Further Particulars	Signature of Registrar

Land Registrar

J. N. Ngau 238

Annex 4: Expert practicing licenses

FORM 7 (r.15(2))

nema
mazingira yetu | uhai wetu | wajibu wetu

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/16575

Application Reference No: NEMA/EIA/EL/21520

M/S **Gomake Consultancy Company Ltd**
(individual or firm) of address

P.O. Box 5540 - 00100 Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts**
registration number **8511**

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

Issued Date: **2/18/2022**

Expiry Date: **12/31/2022**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2015 Certified

Annex 5: Minutes of public participation

LIST OF PARTICIPANTS DURING STAKEHOLDER CONSULTATION MEETING

Name of Project: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED GOLF COURSE FACILITY ON L.R. KSM/KANYAWEGI/9453.

Venue of Meeting: PROJECT SITE

Date and Time of Meeting: 4/11/2021 12.00 PM.

#	Name of Participant	Position / Designation	E-Mail Address	Telephone Contact	Signature
1.	Rebbea Apanda	Village member	[illegible]	0708 419348	
2.	Amos O. Ouma	"	Jolowiamos@gmail	0722 375476	
3.	LENNOX OYUGAH 'A'	— / =	0726350735	0726350735	
4.	EVANS OWUOR	Security		0728085367	
5.	David Odhiambo	Village Member	Davidodongoeyoo	0704964467	
6.	John Ouko	Village Member	— —	0729873821	
7.	GEORGE OUMA	Village Member	GEORGE OUMA	0703392207	
8.	DAVID OCHUKA	Villager	dochuka@yahoo.com	0704532835	
9.	Florence Ochieng	Villager	— —	0720622258	
10.	CHRISTINE OWALLA	VILLAGER	— —	0728210309	
11.	Constater Okello	Villager	— —		C.A.
12.	JANE AKINYI	Villager	— —		
13.	Alice Adhiambo	Villager	— —	0712566841	A.O
14.	JANE OGADA	Villager	— —		

#	Name of Participant	Position / Designation	E-Mail Address	Telephone Contact	Signature
15.	Caren Olango	Village Member	— —		
16.	Olango Phabrine	Village Member	— —		
17.	Emmaculate Achieng	Village Member	— —		
18.	Rael Auma Absalom	Village elder - Kovlu B	— —	0710753477	
19.	Norbatus Omamo	Village elder - Konyemago	— —	0707 776355	
20.	PHILIP OTIENO	ASS. CHIEF	philipotengo@gmail.com	0711 826112	
21.	WILLIAM OPOMBE	VILLAGE ELDER - KANYA	— —	0714524921	
22.	PETER OLIELO	VILLAGE MEMBER		0728858498	
23.	Benediito Muga	Village Kanyago		0745195951	
24.	Kennedy Kyjana	EIA Expert	kyjana.kennedy@gmail.com	0720964333	
25.	Emie Otieno	Rep. Rambara	c.ogunja@yahoo.com	0733665527	
26.	Hesbone Otieno Oyombe	Village Member	87 Paw Akuche	0715098277	
27.	Joseph Agum Agum	Rambara Company	87 Paw Akuche	0743770817	
28.	Pyedeoni Okello	Village Member	87 Paw Akuche	0790017540	
29.	SHEMA OKEYO	Village MEMBER	87 Paw Akuche	0727179031	
30.	Alex Owiti	Village Member	87 Paw Akuche	0716573126	
31.	PETER ONYISO OBANGA	VILLAGE MEMBER	— —	0718716256	
32.	John Owalla	Kanyawegi	Usari	0748700143	
33.	Onani VICTOR OCHIENG	KAJULU	— —	0795827638	
34.	ODUOR HEZEKIEL ONYANGO	RIAT		0716334362	

#	Name of Participant	Position / Designation	E-Mail Address	Telephone Contact	Signature
35	OMBIRO ERIC AYIECHA		—	0791324928	
36	AUSTINE OLUHENG' OTIENO		—	0743618282	
37	CHARLES OMONDI OTIENO		—	0718989766	
38	Peter angolo Onyango		—	0703222598	
39	Simon mwangi Wachira		—	0706384108	
40	stephen mwangi Kiboi		—	0722577466	
41	charles Obonyo		—	0790366614	
42	Peter Odero		—	0796939900	
43	Hesbourn Otieno Omwoto		—	0708096380	
44	OBORA EDWARD		—	0721130226	
45	OWINO GEORGE ONYANGO		—	0790624607	
46	Richard Odindo		—	0700601039	
47	Oduor George Onyango		—	0703280398	
48	Ochieng Edwin Omondi		—	0717569766	
49	PETER SIMUA		—	0729 368978	
50	Ogola Nicholas		—	0742283413	
51	Otieno Apollo		—	0725573617	
52	Sakka Macillus		—	0700088266	

MINUTES OF PUBLIC PARTICIPATION HELD AT THE PROJECT SITE ON 4TH NOVEMBER 2021 FOR THE PROPOSED GOLF COURSE HOTEL DEVELOPMENT ON LR NO. KSM/KANYAWEGI/9616 LISUKA VILLAGE, KANYAWEGI SUB-LOCATION, SOUTH WEST KISUMU LOCATION, KISUMU WEST SUB COUNTY, KISUMU COUNTY.

MEMBERS PRESENT:

See Attached attendance register

AGENDA

1. Preliminaries
2. Project Scope
3. Comments/Questions/Answers
4. Filling of the Public Participation Questionnaires
5. Way forward

MIN 1: PRELIMINARIES

The team was welcomed by Mr. Philip Otengo, the Assistant Chief of Kanyawegi Sub-Location who also asked one of the participants to lead the opening prayer and the meeting was officially opened. Welcoming note was also made by Mr. Leonard Olang who is a resident of the area welcoming the EIA team and the participants present at the meeting.

The meeting was held under strict conformity with the Ministry of Health Protocols on Covid-19 Pandemic.

Self-introduction was then made by the various community members and neighbours.

MIN2: SCOPE OF THE POJECT

There was a project description/scope presentation of the proposed project by the Consultant. It was made clear that the proponent was Rambara Company Ltd.

The Proposed Golf Course Hotel Development is the first phase of the larger project and it consist of a five storey building that will host offices, auditoriums, conference & meeting rooms, shops and restaurants, shoreline protection and landscaping and waste water treatment plant including associated infrastructure such as drainage system and access roads.

Public consultation forms a useful component of gathering, understanding and establishing impacts of projects; determine community and individual preferences and selecting mitigations. This has been set out in Environmental (Impact Assessment and Audit) Regulations, 2003 which requires that community participation be part of EIA.

The Consultants informed the participants that they were holding the meeting have secured permission from the area's administration and that it is the responsibility of those who attended the public participation to disseminate information to their neighbours.

MIN 3: COMMENTS/QUESTIONS/ANSWERS

Comments/Questions

a. How will the neighbours access the lake to get domestic water since the area might be fenced off?
b. The grazing land within the project area might also be limited since the proponent might fence off the project site.
c. How will the proponent ensure that the local youth secure employment at the site during construction and occupation?
d. Will the development touch on the riparian reserve?

e. Previous sand harvesting at the site was a menace and the project is a welcome relief since it will provide employment.
f. Women and girl child should also be given equal opportunities in terms of employment at the project site.
g. Corporate Social Responsibility request to the proponent included: supply of water to the local community and Lisuka Primary School, Levelling of the school's playing ground, repairs within the school.
h. The community should be united and stand behind the project since more benefits will accrue with the implementation of the project.
i. How will the riparian wildlife be protected?

Answers by the Consultant and proponent representative:

The consultant thanked the participant for raising their concerns.

a. It was clarified that the development will have no permanent structures within the riparian as per the NEMA and WRA regulations therefore the riparian wildlife will not be interfered with.
b. The Proponent committed to supply domestic water to the nearby Lisuka Primary School in addition to the neighbouring community since access to the lake has been hindered by the growth of water hyacinth along the lake shore.
c. Local employment shall be given priority over importing labour from outside as long as the required skill is locally available.
d. Women and girls will be given equal opportunities in terms of employment and no discrimination shall be practiced within the development.
e. The Proponent will also commit to undertake additional CSR projects in collaboration with the local community.

MN 4: FILLING OF THE PUBLIC PARTICIPATION QUESTIONNAIRES

The Consultant informed the public about participant's questionnaire. The participants were taken through the questions in the questionnaire before filling individually. The questionnaires were then distributed for filling and filled questionnaire were collected by the Consultant.

MIN 5: WAY FORWARD

The Consultant thanked the community members for participating in the process and assured them that their view will be analysed and taken care of by the Proponent. The meeting was closed by a word of prayer from one of the participants and thereafter members left.

Signed by:

GOMAKE CONSULTANCY COMPANY LTD

Date:

SIGNATURE and STAMP:

LIST OF PARTICIPANTS DURING STAKEHOLDER CONSULTATION MEETING

Name of Project: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED GOLF COURSE FACILITY ON L.R. KSM/KANYAWEGI/9453.

Venue of Meeting: PROJECT SITE

Date and Time of Meeting: 18TH FEBRUARY 2022, 2PM

#	Name of Participant	Position / Designation	E-Mail Address	Telephone Contact	Signature
1.	CATHERINE ATIENO		—	0757984783	
2.	Marcy Adongo		—	—	
3.	FELIX MATUKA		—	0724235542	
4.	Collins Otieno		—	0707520856	
5.	Lucy Adhiambo		—	0725838889	
6.	Okungu Laurine		—	0708937819	
7.	Abel Mivunda		—	0743050241	
8.	Joseph Onyango		—	0729947669.	
9.	Donald Omondi		—	0794000714	
10.	David Odhiambo		—	0769735766	
11.	Paul Onyango Odira		—	0758749020.	
12.	Vincent Odhiambo		—	0795270374	
13.	Howard Otieno.		—	0790595294	
14.	ROSE OWINO		—	0707300826	

#	Name of Participant	Position / Designation	E-Mail Address	Telephone Contact	Signature
15.	Austine Otieno			0713031128	
16.	mary Otieno			0768722356	
17.	Hellen Achieng			0725 088593	
18.	Dorcas Awino			0737 703050	
19.	Bonfas Otieno			0714944641	
20.	Idriss Opiyo			0724 137657	
21.	Ellah Odero Adiko			0717052583	
22.	Willis Ochieng			0745011960.	
23.	Kennedy Ligana			0720964333	
24.					
25.					
26.					
27.					
28.					
29.					
30.					
31.					
32.					
33.					
34.					

MINUTES OF PUBLIC PARTICIPATION HELD AT THE PROJECT SITE ON 18TH FEBRUARY 2022 FOR THE PROPOSED GOLF COURSE HOTEL DEVELOPMENT ON LR NO. KSM/KANYAWEGI/9676 LISUKA VILLAGE, KANYAWEGI SUB-LOCATION, SOUTH WEST KISUMU LOCATION, KISUMU WEST SUB COUNTY, KISUMU COUNTY.

MEMBERS PRESENT:

See Attached attendance register

AGENDA

1. Preliminaries
2. Project Scope
3. Comments
4. Way forward

MIN 1: PRELIMINARIES

The meeting was held under strict conformity with the Ministry of Health Protocols on Covid-19 Pandemic.

Self-introduction was then made by the various community members and neighbours.

MIN2: SCOPE OF THE POJECT

The meeting was a follow-up of the previous meeting held at the same venue in November last year following the upgrading of the project report into a full study. This additional meeting was to comply with NEMA requirement of further consultation within the community including relevant stakeholders.

The Proposed Golf Course Hotel Development is the first phase of the larger project and it consist of a five storey building that will host offices, auditoriums, conference & meeting rooms, shops and restaurants, shoreline protection and landscaping and waste water treatment plant including associated infrastructure such as drainage system and access roads.

Public consultation forms a useful component of gathering, understanding and establishing impacts of projects; determine community and individual preferences and selecting mitigations. This has been set out in Environmental (Impact Assessment and Audit) Regulations, 2003 which requires that community participation be part of EIA.

MIN 3: COMMENTS

Comments

It was clarified that WRA has since demarcated the riparian reserve of the development and that conditions have been given by which the Developer will comply with including the commitment that no permanent structures will be constructed within the riparian as per the NEMA and WRA regulations so as not to interfere with the riparian wildlife and biodiversity.

a. The Proponent committed to supply domestic water to the nearby Lisuka Primary School in addition to the neighbouring community since access to the lake has been hindered by the growth of water hyacinth along the lake shore.
b. Local employment shall be given priority over importing labour from outside as long as the required skill is locally available.
c. Women and girls will be given equal opportunities in terms of employment and no discrimination shall be practiced within the development.
d. The Proponent will also commit to undertake additional CSR projects in collaboration with the local community.

MIN 4: WAY FORWARD

The Consultant thanked the community members for participating in the process and assured them that their view will be analysed and taken care of by the Proponent. The meeting was closed by a word of prayer from one of the participants and thereafter members left.

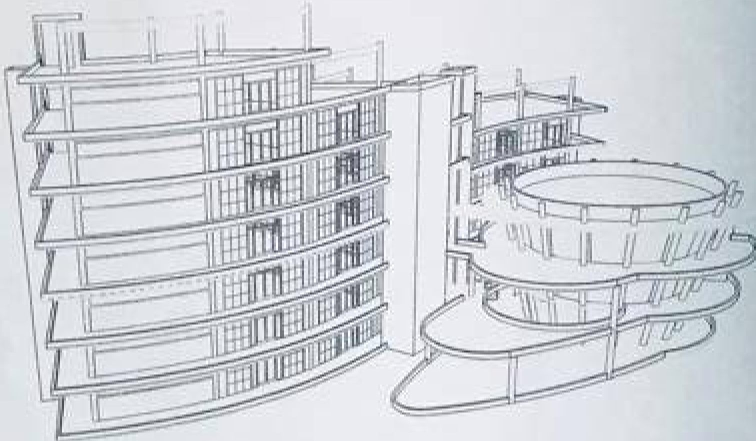
Signed by:

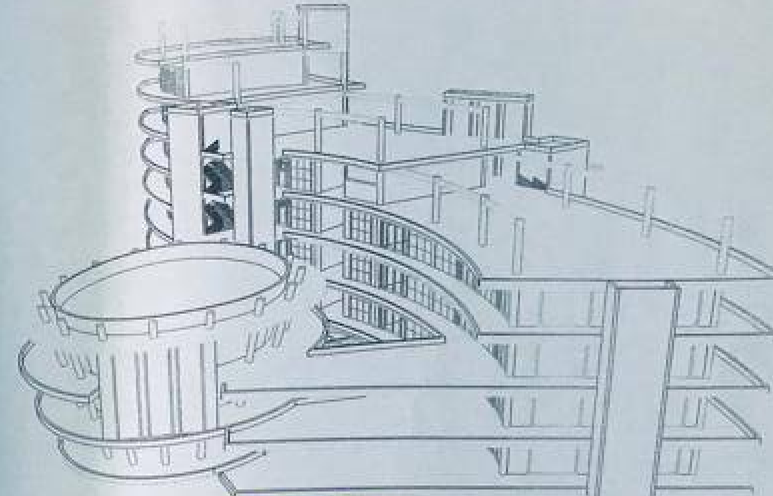
THE AREA CHIEF

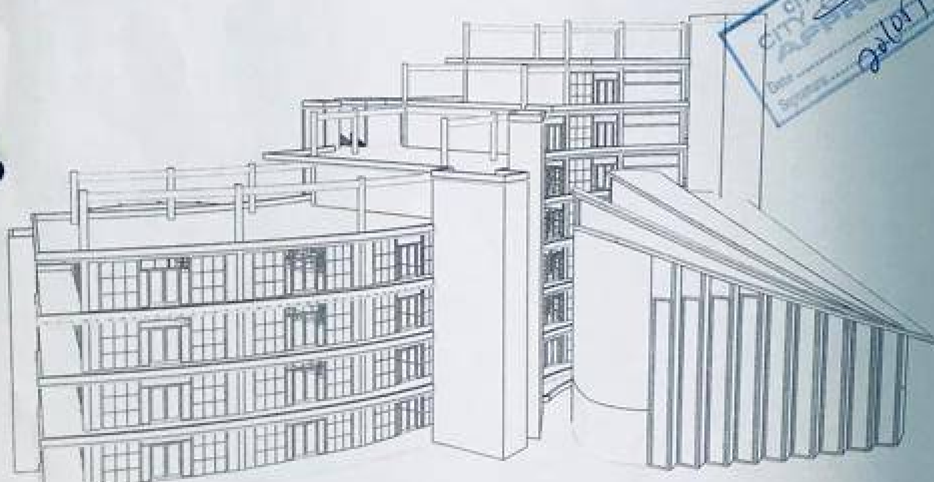
Date: 7/03/2022

SIGNATURE and STAMP:

Annex 6: Project Designs







CITY PLANNING, CITY OF KISUMU
APPROVED
Date: 20/05/2015
Signature

VALIDITY OF THIS PLAN
EXPIRES ON:-
20 MAY 2017
CITY MANAGER

CITY MANAGER
KISUMU

Signed
ARCH. VINCENT M. OCHIENG
REG. NO. A919

AHEAD ARCHITECTS Development Management Services	Job No: AA/015/15	Date: APRIL 2015	**NOTES** 1.All dimensions are to be checked on site and confirmed with architect if possible 2.All r.c works to S.E details and specifications 3.All sanitary works to M.O.H regulations. 4.All drains passing under building to be encased in 150mm conc surrounding. 5.All waste pipes and soil pipes to have an inspection eye accessible from outside. 6.All walls less than 200mm thick to be reinforced with hoop iron at every alternative course. 7.D.P.C to be approved plastic membrane under all wall except door ways. 8.All electrical works to be carried out by a licenced Electrical to the satisfaction of the Kenya Power & Lighting
	Checked by: ARCHITECT VINCENT.M. OCHIENG	Signed Reg No A919	
	Scale :	Revision	
	Drawn: MUGOA N.		

PROJECT TITLE: PROPOSED ROYAL CONFERENCE CENTER ON PLOT NO L.R 6460,6461,6462,6712

DRAWING TYPE :

CLIENTS NAME:

CITY MANAGER KISUMU

VALIDITY OF THIS PLAN EXPIRES ON:- 20 MAY 2017 CITY MANAGER

CITY PLANNER KISUMU

Signed Arch Vincent M. Ochieng Reg No A379

AHEAD ARCHITECTS
Development Management Services

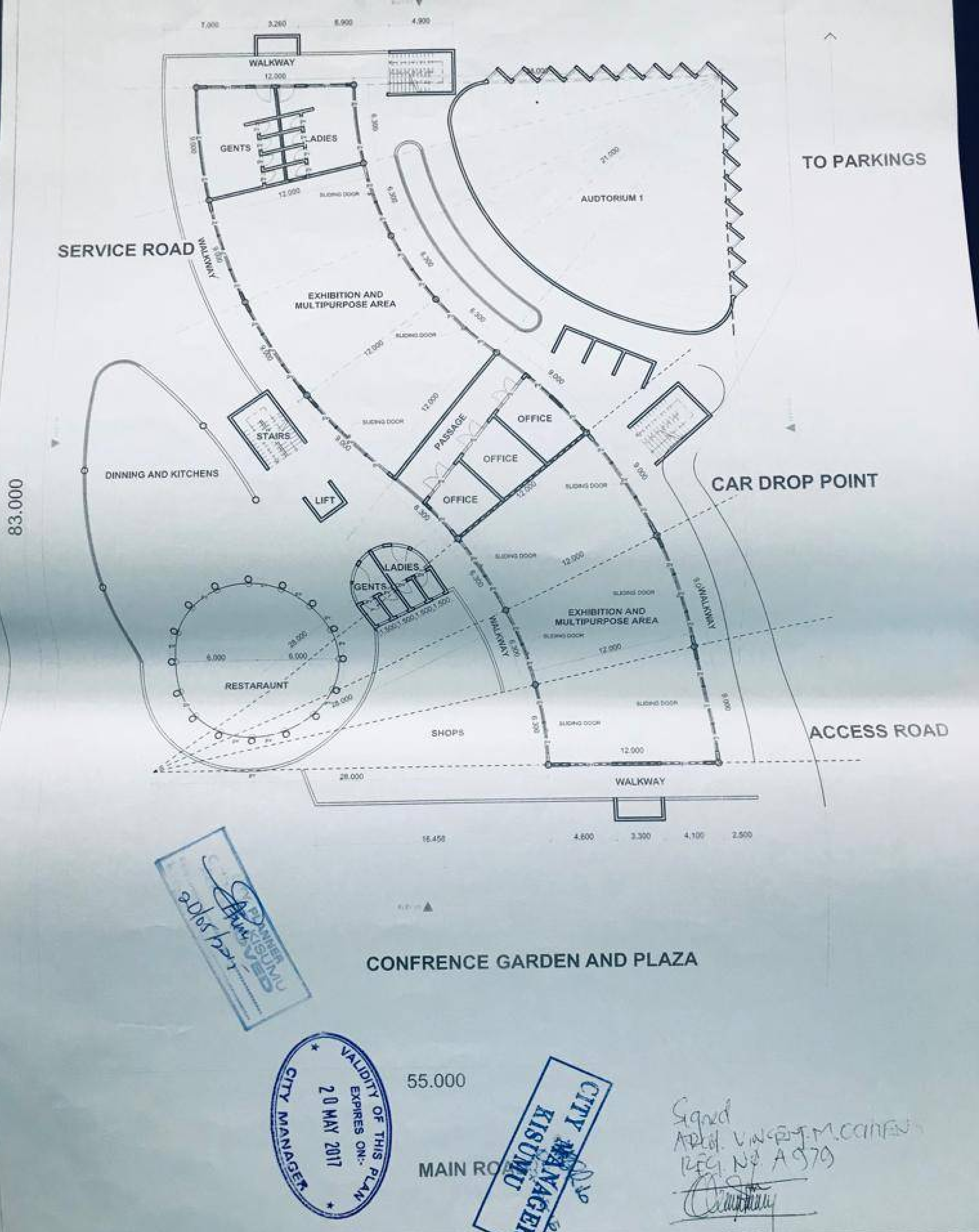
Job No AA/015/15	Date APRIL 2015
Checked by: ARCHITECT VINCENT.M. OCHIENG	Signed Reg No A379
Scale :	Revision
Drawn MBUGUA N.	

NOTES
1.All dimensions are to be checked on site and confirmed with architect if possible
2.All r.c works to S.E details and specifications
3.All sanitary works to M.O.H regulations
4.All drains passing under building to be encased in 150mm conc surrounding.
5.All waste pipes and soil pipes to have an inspection eye accessible from outside.
6.All walls less than 200mm thick to be reinforced with hoop iron at every alternative course.
7.D.P.C to be approved plastic membrane under all wall except door ways.
8.All electrical works to be carried out by a licenced Electrical to the satisfaction of the Kenya Power & Lighting

PROJECT TITLE: PROPOSED ROYAL CONFERENCE CENTER ON PLOT NO 1.R 6460,6461,6462,3313

DRAWING TYPE :

CLIENTS NAME:



NOTES
1. All dimensions are to be checked on site and confirmed with architect if possible
2. All r.c works to S.E details and specifications
3. All sanitary works to M.O.H regulations
4. All drains passing under building to be encased in 150mm conc surrounding.
5. All waste pipes and soil pipes to have an inspection eye accessible from outside.
6. All walls less than 200mm thick to be reinforced with hoop iron at every alternative course.
7. D.P.C to be approved plastic membrane under all wall except door ways.
8. All electrical works to be carried out by a licensed Electrical to the satisfaction of the Kenya Power & Lighting

Date: APRIL 2013

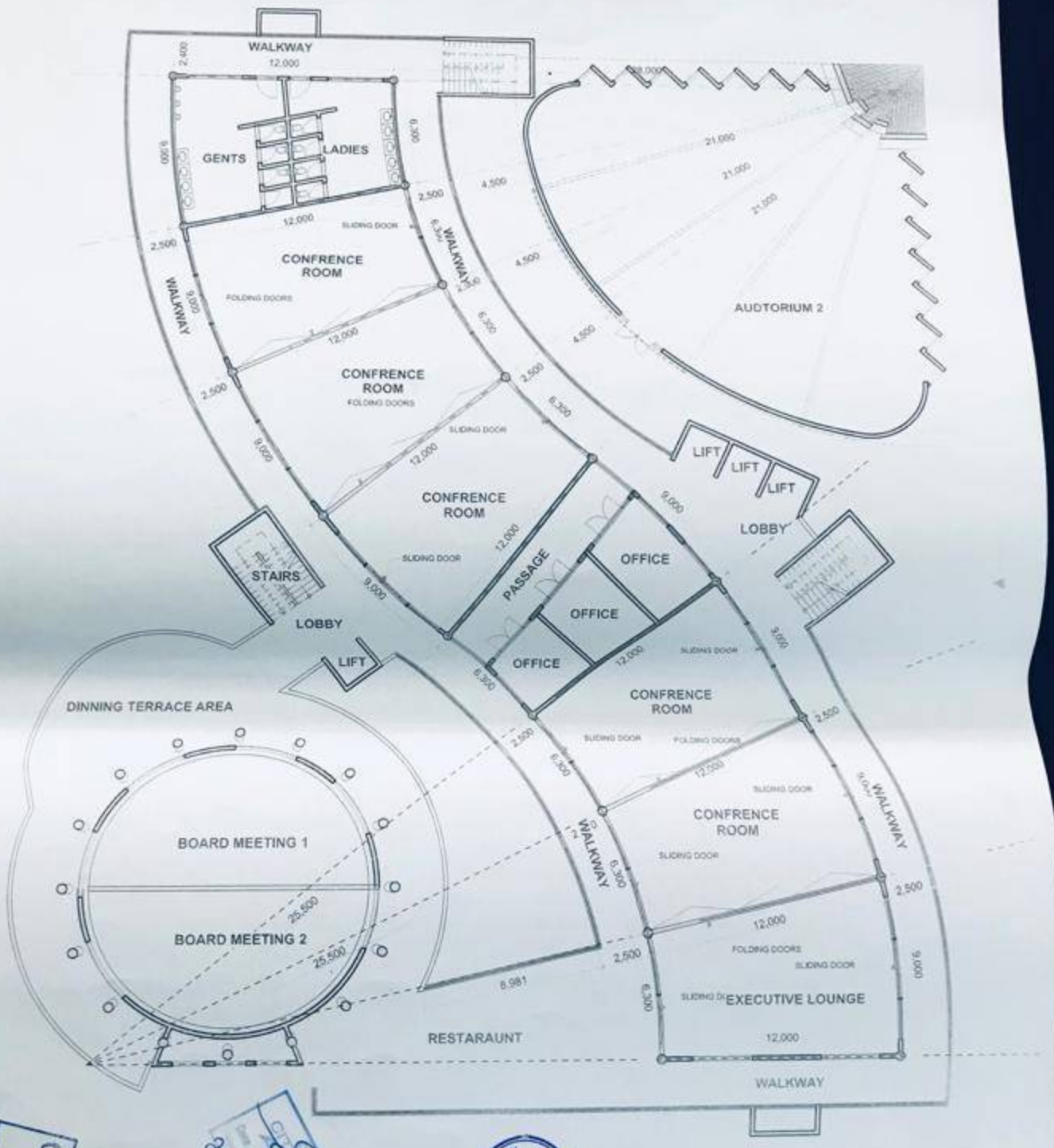
Checked by: ARCHITECT VINCENT.M. OCHIENG | Reg No. A979

Scale: | Revision:

PROJECT TITLE:

DRAWING TYPE:

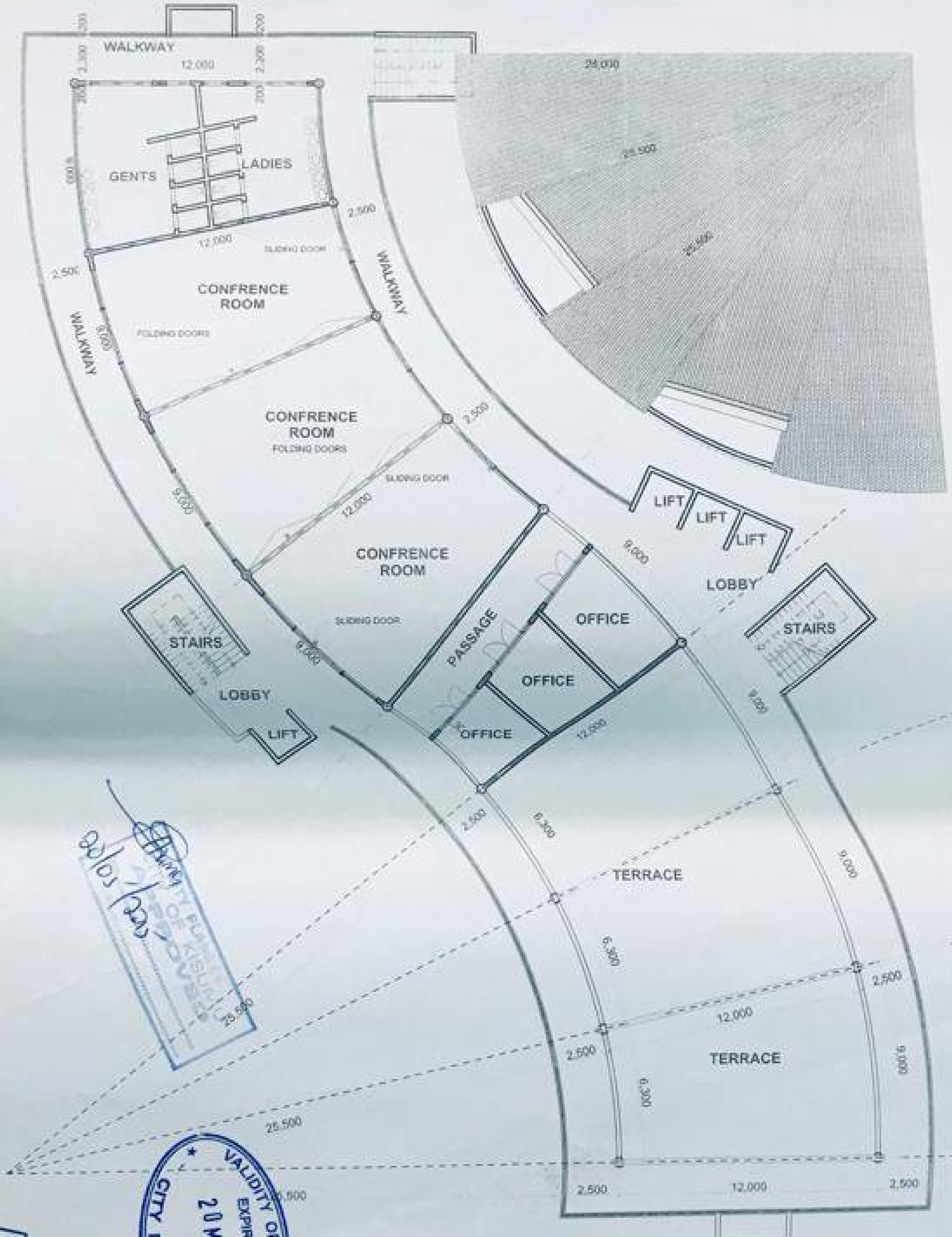
CLIENTS NAME:



CITY MANAGER KISUMU

VALIDITY OF THIS PLAN EXPIRES ON:- 20 MAY 2017 CITY MANAGER

Signed
ARCH VINCENT OCHIENG
REG NO A979

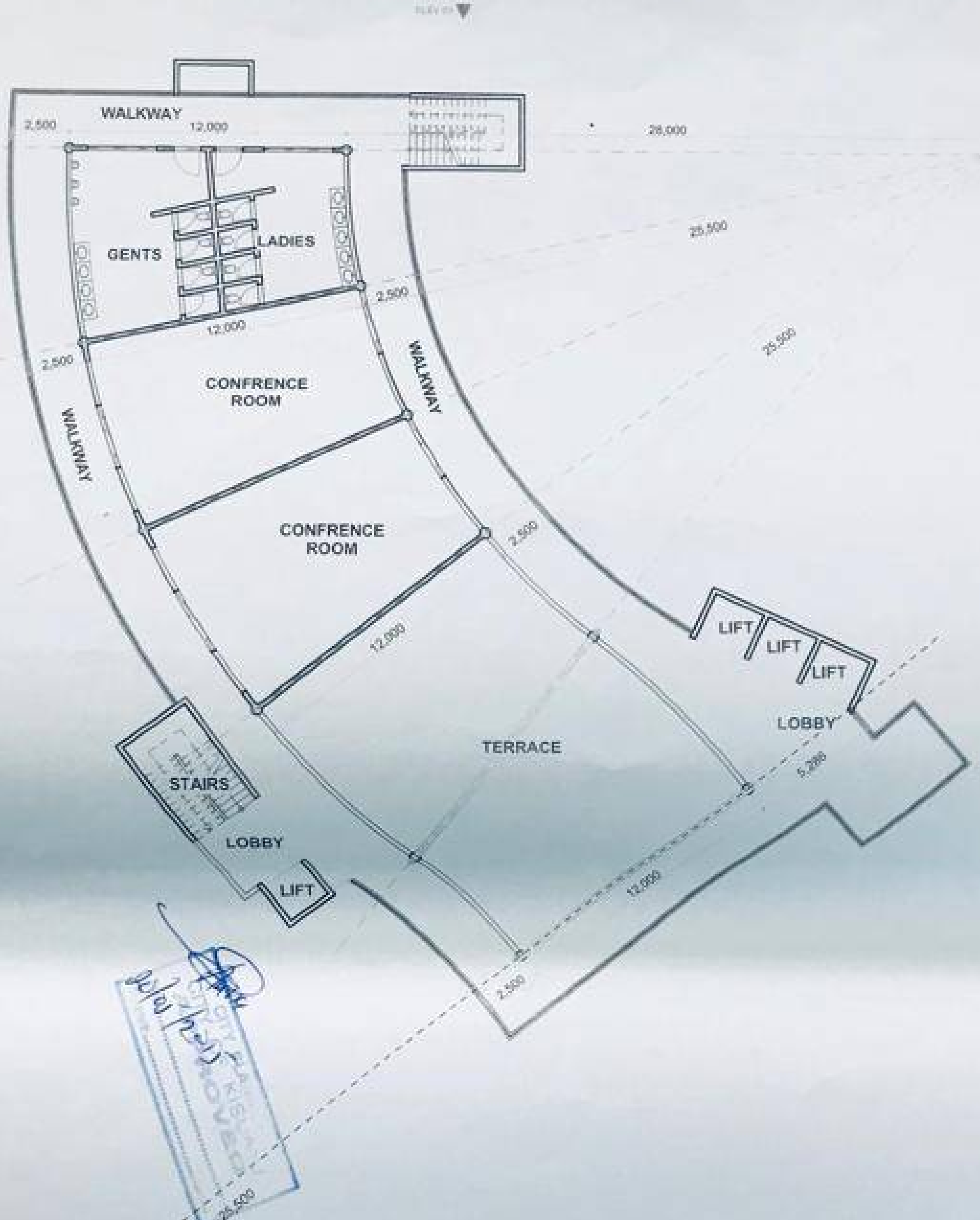


COUNTY PLANNER
OF KISUMU
APPROVED

VALIDITY OF THIS PLAN
EXPIRES ON:-
20 MAY 2017
CITY MANAGER

CITY MANAGER
KISUMU

Signed
ARCH. VINCENT M. OCHIENG'
REG. NO A 979



CITY PLANNING KISUMU APPROVED

CITY MANAGER KISUMU

VALIDITY OF THIS PLAN EXPIRES ON:- 20 MAY 2017 CITY MANAGER

Signed
ARCH. VINCENT M. OGWENO
REG NO A379

NOTES

PROJECT TITLE

DRAWING TITLE

CLIENT'S NAME

VALIDITY OF THIS PLAN EXPIRES ON:- 20 MAY 2017 CITY MANAGER

CITY MANAGER KISUMU

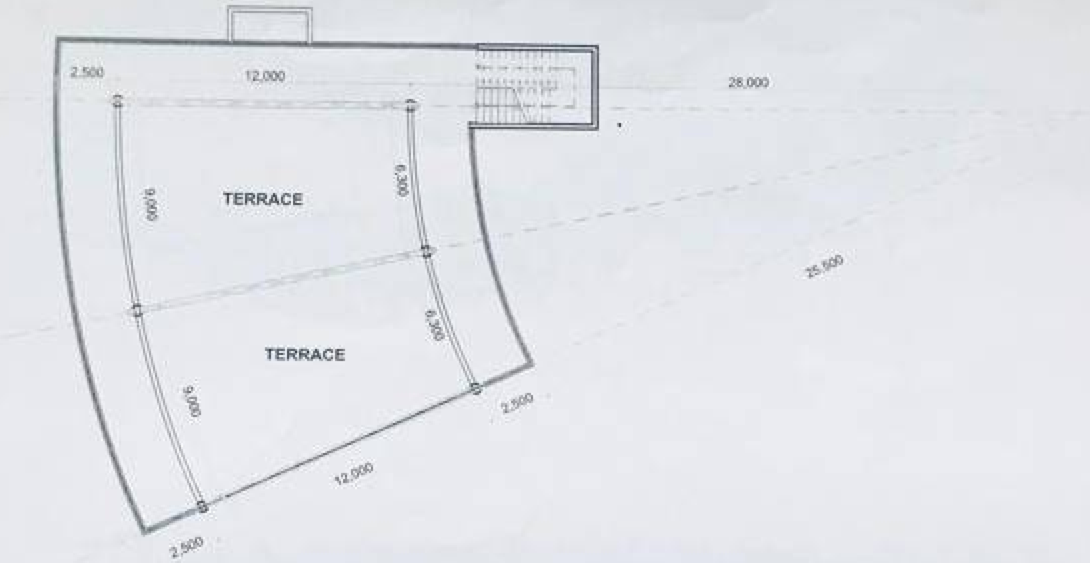
Signed
ARCH. VINCENT .M. OCHIENG
REG. NO A 979

6TH FLOOR

NOTES
1. All dimensions are to be checked on site and confirmed with architect if possible
2. All r.c works to S.E details and specifications
3. All sanitary works to M.O.H regulations.
4. All drains passing under building to be encased in 150mm conc surrounding.
5. All waste pipes and soil pipes to have an inspection eye accessible from outside.
6. All walls less than 200mm thick to be reinforced with hoop iron at every alternative course.
7. D.P.C to be approved plastic membrane under all wall except door ways.

Job No	Date APRIL 2017		
Checked by: ARCHITECT VINCENT M. OCHIENG	Reg No A979	Signed	
Scale :	Revision		

PROJECT TITLE: PROPOSED HOTEL ... ON PLOT NO ...
DRAWING TYPE :
CLIENTS NAME:



CITY PLANNING
CITY OF ...
APPROVED
20/05/2016

VALIDITY OF THIS PLAN EXPIRES ON:-
20 MAY 2017
CITY MANAGER

Signed
Arch. Vincent M. Ochieng
Reg. No A979

CITY MANAGER
KISUMU

APEAD ARCHITECTS	DATE: APRIL 2017	NOTES
	Reg No: A979	1. All dimensions are to be ... with architect if possible
		2. All ... works ... details ...
		3. All ... works ...
		4. All ... building ...
		5. All waste pipes ... accessible from outside
		6. All walls ... every alternative course
		7. ... to be approved ...
		8. All electrical works to be carried out ... to the satisfaction of the Kenya Power & Lighting
PROJECT TITLE:	DRAWING TITLE:	CLIENT NAME:

Annex 7: WRA Riparian demarcation report

WATER RESOURCES AUTHORITY

Regional Manager,
Water Resources Authority,
Lake Victoria South Catchment Area,
Mamboleo Area
P.O. BOX 666,
KISUMU

Tel: 057-202549
Email: lvba@wra.go.ke
Email: kisumuro@gmail.com

The Director
Rambara Company Ltd
P.O Box 10110-00100
Nairobi

OUR REF: WRMA/LVSC-M/S/WC/3/10/29

Date 17/01/2022

Attn: Cornel Osano

RE: REPARIAN LAND DEMARCATION ON PLOT No. KISUMU KISUMU/KANYAWEGI 9676 IN KISUMU COUNTY

Following the site visit held on 6th January 2022 on the said parcel GPS Longitude **34.654013E, latitude 0.11362355** upon your invitation, preparations were put in place under your facilitation that led to the marking and pegging of the parcel.

During the exercise the following were in attendance.

a) Collins Odhiambo – WRA, LVSBA
b) Fanuel Onyango – WRA, LVSBA
c) Cornel Osano – Rambara Company limited
d) Amos Omin – Rambara Company limited
e) Community members/Neighbours

Background

Legislative framework

According to the water resources management rules 2007, "*Unless otherwise determined by a Water Resources Inspector, the riparian land adjacent to a lake, reservoir or stagnant body of water is defined as a minimum of* ***two meters'*** *vertical height or* ***thirty meters'*** *horizontal distance, whichever is less, from the highest recorded.*"

Following the above determination, the riparian area for the above mentioned plot was ***established from the highest flood level*** and demarcated using newly installed Beacons. The proponent is hereby advice to comply with the requirement that he should not exercise the following

WATER RESOURCES AUTHORITY

Regional Manager,
Water Resources Authority,
Lake Victoria South Catchment Area,
Mamboleo Area
P.O. BOX 666,
KISUMU

Tel: 057-202549
Email: lvba@wra.go.ke
Email: kisumuro@gmail.com

proscribed activities highlighted in the seventh schedule of the water resources management rules 2007 within the riparian area.

a) Tillage or cultivation;
b) Clearing of indigenous trees or vegetation;
c) Building of permanent structures;
d) Disposal of any form of waste within the riparian land;

e) Excavation of soil or development of quarries;
f) Planting of exotic species that may have adverse effect to the water resource
g) or any other activity that in the opinion of the Authority and other relevant Stakeholders may degrade the water resource;

During the pegging exercise, the Riparian area was demarcated to be 30m from the high flood levels. The pegs were then placed and marked with the standard WRA begins painted white and inscribed with blue.

Marking and Pegging/Demarcation

The location for the pegs from the left wing facing the lake.

Beacon 1; long 34.655571E lat;0.1136625S

Beacon 2; long 34.655571E lat;0.1136726S

Beacon 3; long 34.655325E lat;0.1136963S

Beacon 4; long 34.65507E lat;0.113679S

Beacon 5; long 34.654798E lat;0.11369583S

Beacon 6; long 34.654529E lat;0.1136722S

Beacon 7; long 34.65432E lat;0.1136058S

Beacon 8; long 34.654013E lat;0.1136235S

WATER RESOURCES AUTHORITY

Regional Manager,
Water Resources Authority,
Lake Victoria South Catchment Area,
Mamboleo Area
P.O. BOX 666,
KISUMU

Tel: 057-202549
Email: lvba@wra.go.ke
Email: kisumuro@gmail.com

Beacon 9; long 34.653737E	lat;0.113615S
Beacon 10; long 34.65352E	lat;0.1135115S
Beacon 11; long 34.6533035E	lat;0.1133815S
Beacon 12; long 34.6530955E	lat;0.113214S
Beacon 13; long 34.652851E	lat;0.113035S
Beacon 14; long 34.6526075E	lat;0.112887S
Beacon 15; long 34.652318E	lat;0.112893S
Beacon 16; long 34.652064E	lat;0.1129083S
Beacon 17; long 34.651726E	lat;0.1128985S
Beacon 18; long 34.6515093E	lat;0.113049S
Beacon 19; long 34.65128E	lat;0.113193S
Beacon 20; long 34.650979E	lat;0.1131235S
Beacon 21; long 34.650368E	lat;0.1131705S
Beacon 22; long 34.650129E	lat;0.1133015S

Challenges/Constraints

During the pegging exercise, some areas were too swampy and inaccessible and necessitated the placement reference beacons. The profile sketch indicated the reserve distance from the reference beacons.

Recommendations

1) The shoreline experiences a wave that transports and deposits the hyacinth from other areas, if the shoreline is to be used as a hotel front then there is need to

WATER RESOURCES AUTHORITY

Regional Manager,
Water Resources Authority,
Lake Victoria South Catchment Area,
Mamboleo Area
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Email: lvba@wra.go.ke
Email: kisumuro@gmail.com

consider installation of wave breakers. This however must be professionally designed, and installed.

2) Proscribed activities within the riparian should be observed with reference to the placed beacons
3) Development to take into account riparian restoration measures, including soil and water conservation and water friendly trees that are suitable for the proposed development area.
4) Since the project is going to involve a lot of earthworks, measures should be put in place to control the silt load on the lake.

Conclusion

The proponent is free to proceed with development in strict adherence to the above stated provisions and those of other regulators and to seek further clarifications from our office whenever necessary

Yours sincerely

Dr. Rose OGARA

Basin Area Coordinator

WATER RESOURCES AUTHORITY

Regional Manager,
Water Resources Authority,
Lake Victoria South Catchment Area,
Mamboleo Area
P.O. BOX 666,
KISUMU

Tel: 057-202549
Email: lvba@wra.go.ke
Email: kisumuro@gmail.com

Cc

County Director of Environment
NEMA
KISUMU COUNTY

Cc

County Physical Planner
KISUMU COUNTY

WATER RESOURCES AUTHORITY

Regional Manager,
Water Resources Authority,
Lake Victoria South Catchment Area,
Mamboleo Area
P.O. BOX 666,
KISUMU

Tel: 057-202549
Email: lvba@wra.go.ke
Email: kisumuro@gmail.com

APPENDIX 1 Project Photos and Field Sketch

WATER RESOURCES AUTHORITY

Regional Manager,
Water Resources Authority,
Lake Victoria South Catchment Area,
Mamboleo Area
P.O. BOX 666,
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Water Resources Authority,
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