

Environmental Impact Assessment Summary Project Report



**PROPOSED FIT-OUT NEW OFFICES FOR KOKO NETWORKS
LIMITED AT RIVAAN CENTRE ON LR No. NAIROBI/BLOCK/5/213,
MUGUGA GREEN ROAD, WESTLANDS,
NAIROBI COUNTY.
OCTOBER 2023**

Project Proponent	Environmental Consultant
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CERTIFICATION ENVIRONMENTAL EXPERT

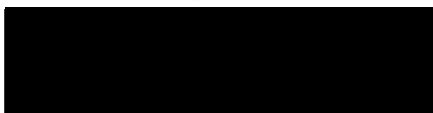
I hereby certify that this Environmental Impact Assessment (EIA) summary project report has been done under my supervision and that the assessment criteria, methodology and content reporting conform to the requirements of the Environmental Management and Coordination Act, 1999 (Rev. 2015) and Legal Notice No. 101 of June 2003 (Environmental Impact Assessment and Audit Regulations (Rev. 2019)).

Signed: _____

Brian O. Osore

EIA/EA Lead Expert 8979

Contact Details



ECOTESCO Limited.

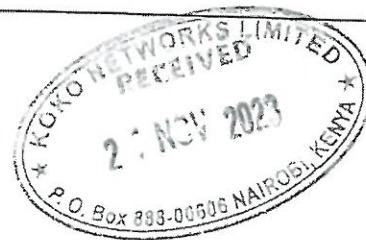


Nairobi, Kenya

CERTIFICATION BY PROJECT PROPONENT

I Smith Owe hereby confirm that this Environmental Impact Assessment summary Project Report has been submitted to NEMA with my Authority as the EIA project proponent's (Koko Networks Limited) authorized representative.

Signature/Stamp: _____



Project Proponent: _____

TERMS AND ABBREVIATIONS

dB	Decibels
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination (Amended) Act (2015)
EMP	Environmental Management Plan
NWSC	Nairobi Water and Sanitation Company
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
OHS	Occupational health and safety
OHSMS	Occupational health and safety management systems
PPE	Personal Protective Equipment
WIBA	Work Injury Benefits Act
WRA	Water Resources Authority

EXECUTIVE SUMMARY

This EIA is prepared to fulfill a legal requirement pursuant to sections 68 and 69 of Environmental Management and coordination (Amended) Act (EMCA) of 2015 and Environmental (Impact Assessment and Audit) regulations, 2003 Rev, 2019.

The impact classification of the proposed project is low risk project under the act and has been identified as one of the projects to undergo an EIA.

The proponent has commissioned this SPR for proposed new offices fit-out project for Koko Networks Limited at Rivaan Centre, Westlands, Nairobi County. The project entails fabricating the office spaces to perfectly align with their specific preferences and requirements before moving in.

Waste shall be managed through the already existing area's trunk sewer line connection. The proposed site is located just off Waiyaki Way in Brookside, along Muguga Green, Westlands, Nairobi County.

Public consultation through questionnaires was held on October 2023 revealed that would be affected persons have no issues with proponent's proposed activity except for adhering to safety precautions.

Existing literature on statutory and other requirements was reviewed during the assessment. Reference was made from documents relating to the proposed project.

The study established that there are no significant environmental impacts expected to ensue during fabrication period and operation stages, provided that the proponent adheres to the proposed mitigation measures as provided.

Table 1: Impacts during the fabrication period of the project

Solid waste generation	<ol style="list-style-type: none">1. Waste collection bins to be provided at designated points on site2. Reuse packaging materials such as cartons and plastic containers to reduce waste at the site3. Ensure that county government is involved in the disposal of waste in any way or contract NEMA registered firm to handle solid waste.
Dust emissions nuisance	<ol style="list-style-type: none">4. Personal protective equipment to be worn by all workers during fabrication of the new offices.
Noise and vibrations nuisance	<ol style="list-style-type: none">5. Fabrication activities to be restricted to day time.
Safety and security	<ol style="list-style-type: none">6. Allow access to only authorized personnel

Occupational health and safety risks and public safety	<ol style="list-style-type: none"> 7. Well-stocked first Aid Kit easily accessible should be provided 8. Provision of PPES to workers who will design the new offices 9. Provide fire-fighting extinguishers
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Anticipated Impacts from the operational phase of the project and mitigation measures

Anticipated Impact	Mitigation measures
Solid waste generation	<ol style="list-style-type: none"> 1. Ensure solid generated at the offices are regularly disposed of through a licensed solid waste dealer 2. Use of integrated solid waste management of options i.e., source reduction, recycling, composting and re-use 3. Ensure the employees manage the wastes effectively
Increased water Demands	<ol style="list-style-type: none"> 4. Create water conservation awareness 5. Install a discharge meter at water outlets to determine and monitor total water usage 6. Ensure water taps are not running when not in use 7. Tenants to conserve water e.g., by avoiding unnecessary toilet flushing 8. Promptly detect and repair of water pipes and tank leaks
Fire occurrence	<ol style="list-style-type: none"> 9. Fire extinguisher to be placed strategic positions 10. Escape routes to be provided 11. Servicing of fire extinguishers as is necessary. 12. Always inspect the electricity wires
Electrical failures and improper use	<ol style="list-style-type: none"> 13. Switch off electrical appliances and lights when not in use 14. Install occupational sensing lights in rooms which are not in use all the time 15. Install energy saving lights 16. Monitor energy use during the operation of the project and set targets for efficient use

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PROJECT BACKGROUND AND DESCRIPTION

1.1. Project background

KOKO Networks Ltd is a venture-based technology company operating in East Africa and India. The company builds and deploys dense networks of cloud-connected “KOKO points” inside local corner stores, which serve as consumer access points for goods and services delivered in partnership with major suppliers. The ethanol fuel solution is delivered through a Kenyan operating partnership with Vivo Energy – the company owns and operates Shell-branded fuels distribution infrastructure across Africa.

1.2. Legal requirement

This EIA project summary report was prepared to fulfill the legal requirement Pursuant to Section 147 of the Environmental Management and Coordination Act, 1999 Rev, 2019

Environmental (Impact Assessment and Audit) regulations, 2003 legal notice 31 was amended in April 2019 leading to preparation and submission of this summary project report for low or medium risk projects (as classified under legal notice 31 of April 2019).

This requirement applies to all projects listed in the Second Schedule to the Act section 58(4) section 2 (k) small scale rehabilitation, maintenance and modernization of projects and has been identified to be subjected to SPR. The impact classification for this project is low; furthermore, the proposed project will be used as an additional office space.

Project Approvals requirements

The project has been submitted for/ approval by Lead Agencies for implementation as follows:

Table I: Summary of Project Approvals requirements

<u>APPROVING AUTHORITY/CONSULTANT</u>	<u>ACT</u>	<u>STATUS</u>	<u>REMARKS</u>
The environmental expert	EMCA 1999 Legal Notice No.121	This report	To monitor and evaluate project during implementation.
NEMA	EMCA 1999	Project Approval/Licensing	To review the report for approval/Disapproval. To enforce implementation of the conditions of license

1.3. Purpose and objectives of this EIA

The overall objective of this EIA is to ensure that the environmental concerns are integrated in all development activities from fabrication period, operation and decommissioning phases of the project in order to contribute to sustainable development.

The objectives are;

- To identify the potential environmental impacts of the proposed project.
- To take into consideration the views of the neighbors in coming up with the mitigation measures of the negative impacts.
- To assess the significance of this impacts.
- To propose the mitigation measures for the significant negative impacts of the project on the environment
- To present information on the impacts alternatives to present results of the EIA in such a way that they can guide informed decision-making.

1.4. Methodology of the assessment

The consultant adopted the following general steps for environmental impact assessment

- Environmental screening, in which the project was identified as among those requiring environmental impact assessment under schedule two of EMCA Rev, 2015.
- Desktop studies
- Review of legal documents and other approvals
- Physical inspection of the site and surrounding areas.
- EIA public participation through questionnaires
- Reporting

2. PROJECT DESCRIPTION AND COMPONENTS

This EIA summary project report was conducted for Proposed new offices for Koko Networks Limited at Rivaan Centre, Westlands, Nairobi County

2.1 Access description

Rivaan Centre is located just off Waiyaki Way in Brookside, along Muguga Green, Westlands in Nairobi County on GPS Coordinates 1.25846,36.78871.

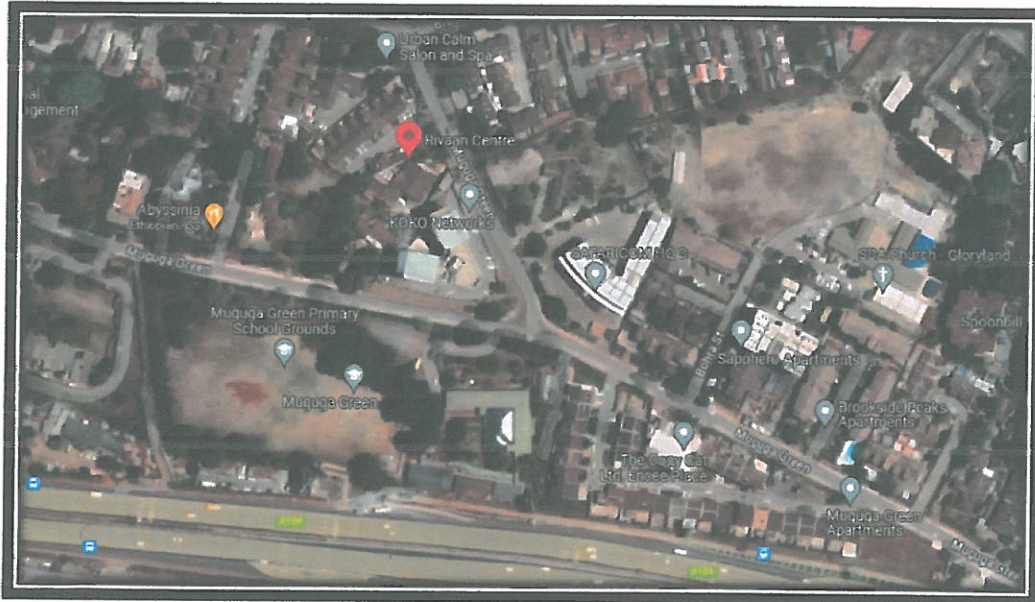


Figure 1: Project Location

2.2 Project's fabrication stage

The proponent having leased the property will partition the space to desired dimensions to create office spaces for the various workers. This will involve the installation of office furniture and other facilities like network cables, telecommunication cables, electronics including computers, printers, paper shredders, photocopiers etc.



Figure 2: Office rooms to be refurbish

2.2.1 The Products of fabrication phase

The products of the fabrication phase will be fully fitted office and work stations ready to be occupied.

1. By-Products

The proposed project fabrication period will generate various by-products. These include;

- Metal and plastic cuttings generated from fabrication activities
- Wood cuttings
- Glass cuttings

2. Waste

During the fabrication of the new offices, the following wastes are likely to be generated.

- Scrap metals
- Metal off-cuts
- PVC pipes off-cuts
- Packaging materials etc.

In line with Legal Notice 121: Waste Regulation, 2006, the waste will be segregated with recyclable material collected and transported to a recycling facility. The proponent will make an effort to minimize the amount of waste generated by application of the 3-R principle (reduce, reuse, recycle) to any practical extent. Non-recyclable wastes will be transported offsite to a permitted landfill.

3. Noise

The proponent shall observe the target noise levels which are set at 75dB (A) (BS 5228, 1997) during the day and 70dB during the night. The fabrication activities will however only take place during the day.

2.3 Description of the project's operational activities

2.3.1 Solid waste and waste water management

The proponent will provide facilities for handling solid waste generated within the additional offices. These will include waste bins/skips for temporarily holding waste within the premises before final disposal at the designated sites by a contracted waste handler. Storm water from the building's roof will be channeled into stormwater drainage that already exists within the facility to avoid surface run off.

2.3.2 Cleaning

Cleaning operations will involve the use of moderate amounts of water, disinfectants and detergents.

2.3.3 General repairs and maintenance

The building and associated facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include repair of building walls and floors, repair and maintenance of electrical gadgets, painting and replacement of worn-out materials among others.

2.4 Legal, Policy and Administrative Framework Summary

Table 2: Summary of legislations applicable to the proposed project

Legislation	Responsible Institution/Lead Agency	Main Purpose	Relevance to the Proposed Project
The EMCA, 1999	NEMA	Provides the nation's legislative framework that addresses major issues concerning the environment. The purpose of the Act is to provide for sustainable management of the environment.	Requires the Proponent to: <ul style="list-style-type: none"> • Submit EIA Study Report to NEMA before commencing any new project. • Engage NEMA approved expert/firm of experts in conducting EIA studies
Environment Impact Assessment /Environmental Audit Regulations, 2003	NEMA	Provides the guidelines and framework for carrying out environmental (impact assessments and audits) in Kenya	Requires the proponent to: <ul style="list-style-type: none"> • Prepare an EIA report in accordance with the format specified in the regulations and to pay attention to issues specified in the second schedule of the Regulations • Carry out corrective measures in the improvement order from NEMA • Allow a NEMA inspector to enter the facility the monitoring of the effects of its activity on the environment
Legal Notice No. 121 EMCA (Waste Management) Regulations, 2006	NEMA	For managing various types of wastes in Kenya	The Regulations require the proponent to: <ul style="list-style-type: none"> • Acquire valid EIA license from NEMA prior to engaging in an activity that can generate hazardous substance • Segregates their waste (hazardous and non-hazardous) by type and then disposes of the wastes in an environmentally acceptable manner • Transport waste using a vehicle that has an approved "Waste

Legislation	Responsible Institution/Lead Agency	Main Purpose	Relevance to the Proposed Project
			<p>Transportation License” issued by the NEMA</p> <ul style="list-style-type: none"> • Dispose of waste in a licensed disposal facility • Label hazardous wastes containers in accordance with the requirements provided in section18 of the Regulation.
<p>Legal notice No. 69 of 2009: Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations</p>	<p>NEMA</p>	<p>For control of noise and excessive vibration pollution</p>	<p>The regulations:</p> <ul style="list-style-type: none"> • Prohibits the Proponent from making or causing to be made noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. • Prohibits the Proponent from making or causing to be made excessive vibration which annoys, disturb, injure or endanger the comfort, response, health or safety of others and the environment • Prohibits the Proponent from causing noise which exceeds any sound level as set out in the First Schedule to the Regulations • Requires the Proponent during EIA studies to: <ul style="list-style-type: none"> ○ Identify natural resources, land uses or activities which may be affected by noise or excessive vibrations from construction or demolition; ○ Determine the measures which are needed in the plans and specifications to minimize or eliminate

Legislation	Responsible Institution/Lead Agency	Main Purpose	Relevance to the Proposed Project
			<p>adverse construction or demolition noise or vibration impacts</p> <ul style="list-style-type: none"> ○ Incorporate the needed abatement measures in the plans and specifications. <p>Prohibits the Proponent from carrying out activities relating to demolitions without a valid permit issued by the Authority</p>
Environmental Management and Coordination (Air Quality Standards) Regulations, 2014	NEMA	Formulated to provide for prevention, control and abatement of air pollution to ensure clean and healthy ambient air	<p>The proposed project has the potential to impact on air quality. Dust and fugitive emissions during fabrication period and decommissioning phases. In light of the above, these Regulations prohibit the Proponent from:</p> <ul style="list-style-type: none"> • Acting in a way that directly or indirectly causes or may cause air pollution to exceed levels set out in the Second Schedule to the Regulations • Allowing particulates emissions into the atmosphere from any source not listed in the six schedules of the Regulations • Causing ambient air quality in controlled areas (listed in Schedule Thirteen) to exceed those stipulated under the Second Schedule. • Allowing emission of particulate matter above the limits stipulated in the second Schedule.
The Public Health Act Cap 242	The Ministry of Public Health	The Act regulates activities detrimental to human and environmental health and safety	The Act prohibits the Proponent from engaging in activities that cause environmental nuisance or those that cause danger,

Legislation	Responsible Institution/Lead Agency	Main Purpose	Relevance to the Proposed Project
			discomfort or annoyance to inhabitants or is hazardous to human and environmental health and safety.
The Local Government Act Cap. 265	The County Government Authorities		The Act requires the Proponent to grant the Officers and servants of Local Authority access to their premises to inspect, maintain, alter or repair sewers, drains, pipes, ventilating shafts or other
The Penal Code (Cap 263)	The Judiciary	Formulated to define the penal system in Kenya. It outlines criminal offenses and prescribes penalties to them	The Code Prohibits the Proponent from: <ul style="list-style-type: none"> • Voluntarily corrupting or fouling water for public springs or reservoirs, rendering it less fit for its ordinary use • Making or vitiating the atmosphere in any place to make it noxious to the health of persons/institution in dwellings or business premises in the neighborhood or those passing along public way.
The Occupier Liability Act (Cap 34)	DOSHS		The Act Requires the Proponent to ensure that visitors to his premises will be reasonably safe in using the premises for the purposes for which he is invited or permitted by the Proponent to be there
Occupational Health and Safety Act, 2007	DOSH	Enacted to provide for the health, safety and welfare of persons employed in workplaces, and for matters incidental thereto and connected therewith.	It requires the Proponent to: <ul style="list-style-type: none"> • Develop a safety and health policy • Undertaking S&H risk assessments, OSH audits and Fire Safety Audit • Provide notification of accidents, injuries and dangerous occurrences, etc • Provide first aid facilities at the workplace • Provide PPEs to the employees

Legislation	Responsible Institution/Lead Agency	Main Purpose	Relevance to the Proposed Project
Legal Notice No. 25: Noise Prevention and Control Rules	DOSHS	Promulgated for work-related noise exposures	<p>It requires the Proponent to:</p> <ul style="list-style-type: none"> • Comply with the following permissible noise levels : <ol style="list-style-type: none"> a. <i>Workplace Noise</i>- 90 dB (A) over an 8-hour TWA period over 24-hours; and 140 dB (A) peak sound level at any given time. b. Community noise level emanating from a workplace-50dB(A) during the day; and 45 dB(A) at night. • Ensure that any equipment brought to a site in Kenya for use shall be designed or have built-in noise reduction devices that do not exceed 90 dB(A). • Medically examine those employees that may be exposed to continuous noise levels of 85 dB (A) as indicated in Regulation 16. If found unfit, the occupational hearing loss to the worker will be compensated as an occupational disease. • Carryout indoor noise measurements/surveys <p>It is anticipated that there will be equipment that will generate noise exceeding the threshold levels of noise stipulated under the Rules. Therefore, it will be incumbent on the proponent to ensure that the equipment complies with the threshold noise values given above.</p>

2.5 Institutional Framework

The Ministry of Environment, Climate Change and Forestry

The Ministry of Environment and Forestry was created vide Executive Order No. 1 of 2018 on the organization of government of Kenya. It is mandated to undertake National Environment Policy and Management, Forestry development policy and management, Development of re-afforestation and agro-forestry, Restoration of strategic water towers, Protection and conservation of Natural environment, Pollution control, Lake Victoria management programme, Restoration of Lake Naivasha basin, Kenya Meteorological department, Kenya meteorological training, Conservation and protection of wetlands and Climate change affairs.

The Ministry is committed to facilitating the enabling policies, legal and regulatory reforms for promoting sustainability of the environment and forest resources, while at the same time, mitigating the effects of climate change.

Institutions Created by EMCA, 1999

- National Environment Management Authority (NEMA) - the principal government authority established under MENR to exercise general supervision and coordination over all matters relating to the environment in Kenya.
- National Executive Council (NEC)- The apex body under the Act charged with the responsibility of developing the national environmental policy in Kenya as well as to set annual environmental goals and objectives.
- The Public Complaints Committee (PCC) - formed to investigate environmental complaints against any person, submit their findings/recommendations to the NEC and to submit periodic reports of its activities to the NEC.

2.6 Baseline Information

Climate

Nairobi County has a subtropical highland climate. Temperatures are fairly uniform with coolest months occurring from June to August while hottest temperatures typically occur from December to March. Rainfall is bimodal in with long rains occurring from March to June while the short rainy period occurs from October to December. The mean annual rainfall in Nairobi ranges between 800 mm and 1,300 mm per annum.

Infrastructure and Transport

The site is located off the Old Waiyaki way along Muguga green. This provides good transport accessibility which is key to success in Nairobi's rapidly expanding urban environment. The area is served by the

Nairobi Water and Sewerage Company's trunk sewer line for the management of domestic effluent. The major source of water and sewerage services is the Nairobi City Water and Sewerage Company.

Geology and Soils

The type of soils found in Westlands can vary, but it is typically part of the larger Nairobi region, which has red volcanic soils in many areas. These soils can be suitable for agriculture and construction with proper soil management and treatment. Black cotton soils with calcareous and non-calcareous variants are dominant along Waiyaki way.

Biological Diversity

The project area is highly influenced by human activities which have resulted into clearing of vegetation cover to provide space for establishment of commercial buildings in the project area and currently signs of remnant vegetation and associated faunal species exist only along road corridors. The project area is a built environment with scattered vegetation in pockets of the project area and mowed lawns.

During the field survey visits, no wildlife species were observed in the project area.



Figure 3: Vegetation cover near the project site

Demography

According to the 2019 Kenya Population and Housing Census the population was 4,397,073 with a population density of 6,247 people per Km² and an annual growth of 4.1%. The current metro area population of Nairobi in 2023 is 5,325,000, a 4.02% increase from 2022.

Economic Activities

The economic activities around the Project area range from modern formal sector that includes wages and salaried employment in the private sector. The informal sector includes retail trade activities that are mostly prevalent along the road corridors and consist of petty trade (Green groceries, hawking). These businesses consist of mainly small-scale informal establishments undertaking construction materials selling, fruit vending and selling of food.

3 PUBLIC PARTICIPATION AND CONSULTATION

The objectives of public consultation are to;

- Identify stakeholders needs and ensure that those needs are met before the project commences
- Identify both materials and psychological impacts of the project on the neighbors
- Measure and promote the social acceptance of the project among the neighbors and avoid costly modifications or abandonment of the project at a later stage.

The expert consulted the project affected persons through a questionnaire survey. Neighbors sited both negative and positive impacts and possible mitigation measures. The impacts, which were noted by the neighbors, have been incorporated in the summary below and their mitigations suggested below for the developer and the contractor to implement. Questionnaire of public participation attached at the appendix.



Table 4: Summary of Comments from the Public Consultation Exercise

Creation of Employment opportunities	It does not only benefit the organization but also contributes to the overall economic well-being of the region.
Stimulation of local business and services	The company will spend money on buying the local goods and services therefore boosting the local economy.
Enhancement of the overall aesthetic of the building	It enhances the working environment, boost productivity, and foster a sense of pride among employees.
Tax revenues	The direct and indirect taxes from the project will boost in revenue therefore helping fund the essential public services and infrastructure improvements, ultimately benefiting the community as a whole.
Additional workspace for the proponent's workers	It fosters a positive work environment, increased productivity, improved employee satisfaction, flexibility, room for growth, enhanced health and safety, and cost savings.
Noise	Operate when people are not in especially during the weekends. Provide the workers with PPES during fabrication of the new offices.
Generation of dust	It can spread to the next offices if not well managed. The contractor should make use of dust arrestors to minimize the spread.
Increased waste generation, water and energy consumption	More employees lead to more waste generation, increased water and energy consumption. Therefore, it was urged that the employer should promote reduction of waste, support the reuse of items where possible, conduct public awareness to inform the individuals on responsible disposal, energy saving and water conservation.
Traffic Increase	The potential traffic congestion will be due to increased employees and visitors therefore the employer can promote the use of public transportation among the employees.

4 MANAGEMENT OF ENVIRONMENT, HEALTH AND SAFETY HAZARDS

Introduction

The EHS is a broader and holistic aspect of protecting the worker, the workplace, the tools/equipment and the biotic environment. It is an essential tool in determining the EIA study. The objective of the EHS on the proposed project is to develop rules that will regulate environmentally instigated diseases and occupational safety measures during fabrication period and the operation phase of the proposed project by:

- Avoidance of injuries
- Provision of safe and healthy working environment for workers comfort so as to enhance maximum output.
- Control of losses and damages to plants, machines, equipment and other products.
- Enhance environmental sustainability through developing sound conservation measures.

EHS Management Strategy to be Adopted by the Contractor

The following strategies will be adopted to achieve the above objectives:

- Maintain an effective reporting procedure for all accidents;
- Encourage, motivate, reward and support employees to take personal initiatives and commitment on EHS

Table 5: Summary of anticipated health and safety issues and their mitigation plans

ANTICIPATED HEALTH AND SAFETY ISSUES	MITIGATION ACTION PLAN
Injury to Workers during fabrication period	<ul style="list-style-type: none"> • First aid provision • Train workers on first aid administration • Adopt workers compensation policy
Fire outbreak (electrical etc.) during fabrication period and operation phase	<ul style="list-style-type: none"> • Avail emergency numbers at strategic positions in the facility • Provide firefighting equipment
Robbery	<ul style="list-style-type: none"> • Avail emergency numbers

5 PREDICTION OF IMPACTS AND PROPOSED MITIGATION MEASURES

This chapter identifies and discusses both the positive and negative impacts associated with the proposed new offices. These impacts have been identified according to the three phases of any proposed project i.e., fabrication period, operation and decommissioning stages and each has different types and levels of impacts on the environment. The impacts of each are as detailed hereunder;

5.2 Positive Impacts during fabrication

5.1.1 Employment Creation

Fabrication work for the proposed new offices will provide employment opportunities for both skilled and unskilled labor. Nevertheless, this impact was assessed to be of a low significance given the scope of the project and the estimated duration of the project.

5.1.2 Provision of Market for Supply of Materials

The fabrications will require supply of considerable quantities of raw materials such as timber, steel, among others most of which will be sourced from the local market.

5.1.3 Gains to the Economy

There will be gains to the economy due to the fabrication of the proposed new offices through consumption of raw materials hence indirectly or directly contributing revenue to the central government.

5.3 Negative Impacts during fabrication phase

5.2.1 Existing Tenants' and Workers' Health, Safety and Wellbeing Impacts

During fabrication of the proposed new offices, workers are likely to be affected by accidents (falling objects and accidents) and inhaling of dust.

The contractor is therefore expected to ensure safety of his workers by;

- Engaging only those workers that are trained to operate specific machines and equipment.
- Provide a First Aid box and have a trained person to handle site emergencies and incidences. Display on site, telephone numbers of ambulances or provide a site vehicle to specifically transport the injured to hospital.
- Provide fire-fighting mechanism at site. Display emergency call numbers that can be used in case of a site fire.
- Provide washing (enclosed bathroom) and toilet facilities at site with both drinking and washing water.
- Provide Personal Protective Equipment to the workers
- Using well-maintained equipment by qualified personnel.

5.2.2 Noise Pollution

The main contributor to noise would be power tools and equipment used during fabrication which can be reduced to manageable levels by use of well-maintained equipment. Noise could become a nuisance to the neighboring offices. However, this impact is assessed to be low due to the nature of the project and the short duration of implementation anticipated.

5.2.3 Decreased Air Quality Standards

Particulate matter pollution is likely to occur during the drilling and other activities. The dust will spread and settle on surrounding buildings and properties. Dust therefore, becomes a nuisance and a health hazard to all in contact with it including immediate neighbors. Workers should be provided with dust masks. The contractor should make use of dust arrestors to minimize the spread of dust to neighboring structures.

5.2.4 Energy Consumption

The proposed works will consume electricity and fossil fuels i.e., power tools and other machinery. These can be reduced by ensuring responsible electricity use at the site by switching off electrical appliances when not in use, sensitization of workers on the need to conserve energy and proper planning to reduce excessive consumption of fossil fuels.

5.2.5 Increased Demand for Water

The workers and the fabrication work will create an additional demand for water to the existing demand. Water will be mostly used in wetting surfaces or cleaning completed structures. The workers will also use the water for drinking. The area is served by NWSC and the project is expected to increase demand for water in the project area.

5.2.6 Waste Generation and Disposal

A lot of waste will be generated during the fabrication period. These wastes will include papers, plastic, metal and timber remains. These can temporarily be stored on site before disposal to a county government dumping site by contractor, the Council or by a Council approved waste disposal company. The papers can also be sold to recycling companies and waste wood materials can be sold out for re-use as fuel wood.

5.2.7 Insecurity

A site of this nature can provide temptations to crooked workers and others to engage in theft. The presence of these people can therefore, negatively impact on the building's security. Increased surveillance by the building's security team at the gate will be the only way to keep off idlers and cases of insecurity out of the site.

5.3 Project Operation Stage Impacts

5.3.1 Employment Creation

The project will provide employment opportunities for service providers and other indirect employment opportunities for the locals.

5.3.2 Increased office space

The tenants (Koko Networks Ltd) will stand to benefit from the increased working space which is likely to promote their safety and comfort in their offices thereby driving their productivity.

5.4 Negative Impacts during Operation

5.4.1 Liquid Wastes Disposal

The main contributor to liquid wastes from the proposed new offices include storm water. Handling of the wastes is of primary importance and poor handling can lead to negative impacts on the environment. Disposal nevertheless will be through storm drains to direct storm water to the public drainage system.

5.4.2 Solid Wastes Disposal

The solid wastes will comprise mainly of office waste e.g., used stationary, food waste and packaging material. Poor disposal method can pollute the environment thereby negatively impacting on it. Best disposal methods will be for the wastes to be collected in bins and stored in ventilated and lockable enclosures before collection by the County government or by a county government registered and NEMA licensed waste disposal company.

5.4.3 Water & Electricity Demands

Regular housekeeping demands and drinking water demands from the employees premised in the new offices will also increase the units of water used by the building. To ensure energy efficiency it will be necessary to install energy saving lighting system and switching of electrical appliances when not in use. To reduce demand for water, the proponent should have regular scheduled housekeeping by trained staff.

5.5 De-Commissioning Stage Impacts

At the expected end of the economic life of the proposed project, the structure will be demolished and replaced with other development, which will be applicable and suitable at that particular period. The decommissioning exercise will have both positive and negative impacts and the negative ones will be mitigated accordingly. The plot will be utilized according to the needs of the time. The following are major negative impacts discussed below and associated with the project during its decommissioning phase;

5.5.1 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 medical facility. The impact will be direct, temporary and minor.

Minimization of Noise and Vibration

Significant impacts on the acoustic environment will be mitigated by putting in place several measures that will mitigate noise pollution arising during the decommissioning phase. The following noise-suppression techniques will be employed to minimize the impact of demolition noise at the project site.

- ❖ Install portable barriers to shield compressors and other small stationary equipment where necessary.
- ❖ Use quiet equipment (i.e., equipment designed with noise control elements).
- ❖ Co-ordinate with relevant agencies regarding demolition activities in the project site.
- ❖ Limit pickup trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible.

5.5.2 Solid Waste Generation

Demolition of the infrastructure will result in generation of solid waste. The waste will contain the materials used in construction including concrete, metal, wood, glass, paints, adhesives, among other materials. 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. The impact will be direct, permanent and major if not well controlled.

Mitigation Measures

It is recommended that demolition waste to be recycled or reused to ensure that materials that would otherwise be disposed of as waste are diverted for productive uses. In this regard, the proponent is committed to ensuring that demolition materials will be used in other projects rather than being disposed-off. In event that, some materials are not reusable or recyclable, the waste shall be disposed-off as per Waste Management Regulations, 2006, relevant regulations and permission from relevant institutions like NEMA and Municipal Council.

The consultant recommends the client to use the following mitigation measures and other relevant measures from the authorizes;

- ❖ Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of demolition waste generated during decommissioning phase
- ❖ Provision of facilities for proper handling and storage of demolition materials to reduce the amount of waste caused by damage or exposure to the elements

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- ❖ Adequate collection and storage of waste on site and safe transportation to the disposal sites and disposal methods at designated area shall be provided.

5.5.3 Generation of Dust

Some dust will be generated during demolition works of the facility. However, the impact will be direct, temporary and minor.

Reduction of Dust Concentration

High levels of dust concentration resulting from demolition or dismantling works will be minimized as follows:

- ❖ Watering all active demolition areas as and when necessary to lay dust.
- ❖ Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.
- ❖ Ensuring all relevant regulation on Air Quality Regulation, 2009 are followed.

Site Rehabilitation after Decommissioning

The project operator shall, on decommissioning of the project, restore the site to its original status as far as practicable and plant trees at the site. This will also involve NEMA, County Government and other relevant institutions to ensure the restoration is environmentally friendly and sustainable. The impacts in this phase include the following;

Loss and damage to property

Mitigation measures

- Early information to the affected tenants
- Sell the recyclables to second hand dealers

Disorientation of the surrounding

The project site, as well as the surrounding areas, is in danger of becoming derelict thus devaluing the area aesthetically if the decommissioning phase is not carried out responsibly.

Mitigation measures

- Landscape all the affected areas
- Collect all the rock debris and other unusable materials to designated sites.
- Fence the site until natural ground stabilization process is finished

Intrusion of non-conforming activities

Mitigation measures

- Should acquire 'change of user' as required by the law
- The proponent should lease the land /structures to conforming undertakings.

6 ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) for a development project gives a logical framework within which the identified negative environmental impacts can be mitigated. The EMP also assigns action responsibilities to various actors and a timeframe within which mitigation measures and monitoring can be done. It is an important output of an EIA process because it gives a checklist for project monitoring and evaluation.

6.1 Environmental management and monitoring plan during fabrication period

Expected negative impacts	Recommended mitigation measures	Responsibility party		Time frame
Increased solid waste	<ul style="list-style-type: none"> - Waste collection bins to be provided at designated points on site - Reuse packaging materials to reduce waste at the site - Ensure that county government is involved in the disposal of waste in any way or contract NEMA registered firm to handle solid waste 	Contractor/ Developer/ Nairobi County government		Once/ throughout the fabrication period
Dust emission	<ul style="list-style-type: none"> - Ensure use of dust screens to trap dust - Personal protective equipment to be worn by all workers 	Project manager		Throughout the fabrication period
Noise and vibrations	<ul style="list-style-type: none"> - Fabrication of the office spaces to be restricted to day time 	Site foremen		Throughout the fabrication period
Safety and security	<ul style="list-style-type: none"> - Ensure the general safety and security at all times by providing day and night security guards - Allow access to only authorized personnel 	Contractor and foremen		Continuous
Occupational health and safety risks	<ul style="list-style-type: none"> - Well-stocked first Aid Kit easily accessible should be provided within the premise. - Use of well -maintained equipment by qualified personnel. - Provision of protective gear. - Train workers on use of machines and simple maintenance. - Provision of fire-fighting mechanism. - Provision of proper sanitary facilities depending on number of workers - Monitoring solid and effluent disposal 	Contractor		Once/continuou s
Fire control	<ul style="list-style-type: none"> - Installation of fire protection, detection and fighting equipment extinguishers at strategic points - Train workers on emergence procedures 	Contractor		Continuous

6.2 Environmental management and monitoring plan during the operation phase

Impacts expected	Recommended mitigation measures	Responsibility party		Time frame
Solid waste generation	<ul style="list-style-type: none"> - Use of integrated solid waste management of options i.e., source reduction, recycling, composting and re-use - Ensure the occupants manage the wastes effectively - A private company to be contracted to collect and dispose solid waste on regular basis 	Proponent		Continuous
High demand for water	<ul style="list-style-type: none"> - Create water conservation awareness - Install a discharge meter at water outlets to determine and monitor total water usage - Ensure water taps are not running when not in use - Tenants to conserve water e.g., by avoiding unnecessary toilet flushing - Promptly detect and repair of water pipes and tank leaks 	Proponent		Continuous
Fire control	<ul style="list-style-type: none"> - Fire extinguisher to be placed strategic positions - Escape routes to be provided - Servicing of fire extinguishers as is necessary. Always inspect electricity wires 	Proponent		Continuous
Efficient use of energy	<ul style="list-style-type: none"> - Switch off electrical appliances and lights when not in use - Install occupational sensing lights in rooms which are not in use all the time 	Proponent		Continuous

Impacts expected	Recommended mitigation measures	Responsibility party	[REDACTED]	Time frame
	<ul style="list-style-type: none">- Install energy saving lights- Monitor energy use during the operation of the project and set targets for efficient use			

7 CONCLUSION AND RECOMMENDATION

The result of this EIA report has indicated that there are no significant and permanent negative impacts likely to be generated by the proposed new offices for Koko Networks Ltd at Rivaan Centre. Most of the potential negative impacts to be generated have been considered as low and can only cause damage to the environment and human health if the mitigation measures are not implemented as recommended. It is therefore concluded that the proposed project will not compromise the quality of the environment and to the business community in the surrounding area.

The EIA expert recommends that the proposed project be approved subject to the implementation of the proposed environmental management plan to avoid environmental and public health impacts during fabrication period and operation phase of the new offices.