ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDY REPORT FOR THE PROPOSED CONSTRUCTION OF GRAND PREMIER RESIDENTIAL APARTMENTS ON PLOT NO. 330/603 WITHIN KILIMANI, NAIROBI

GPS COORDINATES: -1^{0}17'31"S, 36^{0}46'18"E

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CERTIFICATION

This Environmental and Social Impact Assessment Report for the proposed construction of Grand Premier Apartments on Plot No. 330/603 was conducted and the report prepared by an Environmental Impact assessment (EIA) and Environmental Audit (EA) Lead Expert. The experts' registration details and signatures are as follows:

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PROPOSED PROJECT PROPONENT:

Name of Proponent/Representative ……..……...……

Designation……..……Signature…….…….

Date……Stamp (if available).....

ACRONYMS

CPP	-	Consultation and Public Participation
EA	-	Environmental Audit
EHS	-	Environmental Health and Safety
ESIA	-	Environmental and Social Impact Assessment
EMCA	-	Environmental Management and Coordination Act
EMMP	-	Environmental Management and Monitory Plan
EMP	-	Environmental Management Plan
GOK	-	Government of Kenya
IEA	-	Initial Environmental Audit
NEAP	-	National Environmental Action Plan
NEMA	-	National Environment Management Authority
NPEP	-	National Poverty Eradication Plan
OHS	-	Occupational Health and Safety
PEF	-	Poverty Eradication Commission
PPE	-	Personal Protective Equipment
TOR	-	Terms of Reference
VAT	-	Value Added Tax

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EXECUTIVE SUMMARY

The proposed project will be situated approximately 600 metres from Gitanga Road along Argwings Kodhek Road, Kilimani near Valley Arcade. It is within the jurisdiction of Nairobi County Government, Nairobi County on a plot measuring 0.2036 Ha. The development will be on Nairobi/Block/330/603 certificate of lease issued on 27th May 1971. The certificate of lease was issued in accordance with the registered land act chapter 300 by the ministry of land –Nairobi District land registry. The same has been annexed in this report. The location of the proposed project is on a prime land for Grand Premier Apartments construction and the proposed project is consistent with the current urban planning and zonation. The high rate of urbanization caused by rural-urban migration in the country has created a high demand for more residential housing. However it is a requirement in law to have all constructions subjected to an EIA process.

The apartment will be a thirteen storey building; with two basement parking area. There shall be toilets within the housing complex. The sewage waste will be managed by the Nairobi municipal council. The assessment team learnt that the materials were sourced from within the country. The source of energy will be mains electricity and water will be sourced from the Nairobi Water and Sewerage Company. Environmental concerns now need to be part of the planning and development process and not an afterthought, it is therefore advisable to avoid land use conflicts with the surrounding area. To avoid unnecessary conflicts that retard development in the country, the proponent undertook this Environmental and Social Impact Assessment and incorporated environmental concerns as advised by the Authority.

Environmental and Social Impact Assessment is a tool for environmental conservation and has been identified as a key component in new project implementation. According to section 58 of the Environmental Management and Coordination Act (EMCA) No.8 of 1999 second schedule 9 (1), and Environmental (Impact Assessment and Audit) regulation, 2003, new projects must undergo Environmental and Social Impact Assessment. The Report of the same must be submitted to National Environment Authority (NEMA) for approval and issuance of relevant certificates. This was necessary as many forms of developmental activities cause damage to the environment and hence the greatest challenge today is to maintain sustainable

development without interfering with the environment. The main probable impacts of the intended project include but not limited to: impact on the public safety, air and noise pollution.

While most of the impacts will be a mitigated in the short and medium term, it is vital for the developer to put adequate measures in place to mitigate all probable adverse impacts on the socioeconomic and biophysical components. Major recommendations include: inspection of the construction activities by a competent engineer, provision of adequate protective clothing and equipment to construction workers and proper waste handling and disposal. It is also recommended that upon completion adequate measures to enhance health and safety be implemented. It is also recommended that the developer must adhere to Building standards, public Health and Safety and Environmental regulations. A comprehensive Environmental Management Plan (EMP) has been prepared for the project. An Environmental audit should be carried out within 12 months of completion and necessary adjustments to the EMP made. It is our honest belief that the proposed measures shall be fully complied with. No major impacts on the environment are foreseen.

1.2 Scope Objective and Criteria of the Environmental and Social Impact Assessment (ESIA)

The scope of the assessment covered construction works of the proposed development which included ground preparation, masonry, and installation of service lines as well as the utilities required by the proposed project. The output of this work was a comprehensive Environmental and Social Impact Assessment Report for the purposes of applying for an EIA licence. The consultant on behalf of the proponent conducted the EIA by incorporating but not limited to the following terms of reference:

- The proposed location of the project.
- A concise description of the national environmental legislative and regulatory framework, baseline information, and any other relevant information related to the project.

- The technology, procedures and processes to be used, in the implementation of the project.
- The materials to be used in the construction and implementation of the project.
- The products, by-products and waste to be generated by the project.
- A description of the potentially affected environment.
- The environmental effects of the project including the social and cultural effects and the direct, indirect, cumulative, irreversible, short-term and long-term effects anticipated.
- To recommend a specific environmentally sound and affordable wastewater management system.
- Provide alternative technologies and processes available and reasons for preferring the chosen technology and processes.
- Analysis of alternatives including project site, design and technologies.
- An environmental management plan proposing the measures for eliminating, minimizing or mitigating adverse impacts on the environment, including the cost, timeframe and responsibility to implement the measures.
- Provide an action plan for the prevention and management of the foreseeable accidents and hazardous activities in the cause of carrying out development activities.
- Propose measures to prevent health hazards and to ensure security in the working environment for the employees, residents and for the management in case of emergencies.
- An identification of gaps in knowledge and uncertainties which were encountered in compiling the information.
- An economic and social analysis of the project.

1.3 Methodology Outline

Since the proposed site is located within an area with no rich natural resources whose total effect to the surroundings could be adverse and noting that the intended development and use of the facility will be in line with what exists in the surrounding areas, an environmental study report is seen to be adequate. The general steps followed during the assessment were as follows:

- Environment screening, in which the project was identified as among those requiring environmental impact assessment under schedule 2 of EMCA, 1999
- Environmental scoping that provided the key environmental issues
- Desktop studies and interviews
- Physical inspection of the site and surrounding areas
- EIA Public participation via the use of questionnaires
- Reporting.

1.4 Project Description

The project is focused on the construction of a ten storey building. The actual design components of the project include:

- Construction of a ten storey building
- Development utilities (water, drainage, electricity etc.)
- Construction of a septic tank

The project will cost approximately Kenya Shillings three million (38,000,000) only.

1.5 Impacts and Mitigation Measures

There are both positive and negative impacts associated with the proposed residential building project. These are identified according to phases namely: Construction Phase, Operational Phase and Decommissioning Phase. In general the following positive impacts are associated with the proposed development;

- Employment Opportunities
- Gains in the Local and National Economy
- Increase in National Housing Stock
- Optimal use of Land

The negative Impacts associated with the proposed project are:

- Storm water
- Noise pollution
- Dust emissions
- Increased water demand
- Generation of exhaust emissions
- Building materials and energy used
- Waste management
- Increased runoff from new impervious areas
- Workers accidents and hazards during construction

In order to alleviate the negative impacts associated with the project the proponents shall take several measures, among these are; Dust emissions will be controlled by the following measures where applicable:

- Watering all active construction areas when necessary.
- Cordon off the area during construction
- Put up a notice as per the Ministry of Roads
- Cover all trucks hauling soil, sand and other loose materials

- Pave, apply water when necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction site
- Sweep daily (with water sweepers) the access road, parking areas and staging areas at construction site.

The following noise-suppression techniques will be employed to minimise the impact of temporary construction 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 all substation construction activities in the residential areas.
- Install sound barriers for pile driving activity.
- Limit pickup trucks and other small equipment to an idling time when necessary, observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible.
- Equip workers with safety equipment

In order to control exhaust emissions the following measures shall be implemented during construction.

- Vehicle idling time shall be minimized.
- Alternatively fuelled construction equipment shall be used where feasible.
- Equipment shall be properly tuned and maintained.

Several measures shall be put in place to mitigate the impacts that are likely to lead to Hydrology and water quality degradation. The proponent will prepare a hazardous substance control and emergency response plan that will include preparations for quick and safe clean-up of accidental spills. It will prescribe hazardous-materials handling procedures to reduce the

potential for a spill during construction, and will include an emergency response programme to ensure quick and safe clean-up of accidental spills. The plan will identify areas where refuelling and vehicle maintenance activities and storage of hazardous materials, if any, will be permitted. Adequate collection and storage of waste on site and safe transportation to the disposal sites and disposal methods at designated area shall be provided. In addition covers for refuse containers and appropriate personal protective equipment shall also be provided by the proponent.

1.6 Conclusion

It is quite evident that the construction and operation of the proposed project will bring positive effects in the project area including creation of employment, quality business enterprise, improved infrastructure, Increase in learning facilities and Increase in Revenue among others. However, although the project will come with various positive impacts, negative impacts will also be experienced hence the need to mitigate them. The negative impacts of this project include: Increased population without commensurate services and facilities; increased pressure on infrastructure; air pollution; water pollution and generation of wastes among others. On the basis of the above and taking cognizance of the fact that the proponent has proved financially and environmentally credible, it is our recommendation that the project be allowed to go on provided the mitigation measures outlined in this report are adhered to and the Environmental Management Plan (EMP) is implemented to the letter.

CHAPTER 1. INTRODUCTION

1.1 Background and Rationale for an Environmental and Social Impact Assessment

The proposed development will enhance the provision of more housing facilities for the growing population. It will also optimize the use of the land, hence increasing its utility. The project will provide employment during both construction and operation phases. It will create market for goods and services and especially construction inputs which include raw materials such as building stones and blocks, sand, ballast etc and construction machinery. Many secondary businesses are also likely to spring up during the construction phase especially those providing foods and beverages to the construction workers.

More recently the development spurred on by regulators in Kenya and indeed globally, has recognized the need for change in order to safeguard the environment. In relation to this, Environmental concerns have now been integrated in the planning and implementation processes of any proposed projects in Kenya. The key objective is to mitigate conflicts with the environment at the vicinity; during implementation and operational phases. In addition, it is now mandatory for the proponents of such projects to carry out Environmental and Social Impact Assessments (ESIA), to enhance Sustainable Environmental Management (SEM) as well as controlling and revitalizing the much-degraded environment. The environmental management is regulated by the National Environmental Management Environment Authority (NEMA) in Kenya.

Pursuant to the prevailing legal requirements as envisaged in the EMCA and to ensure sustainable environmental management, the proponent undertook this EIA Study Report for the proposed project; and incorporated substantial environmental aspects as advised by NEMA. This EIA study report thus provides relevant information and environmental considerations on the project proponent’s intention to seek approval from NEMA for the development of the proposed project. The EIA was conducted by a NEMA registered expert.

1.2 Scope objective and criteria of the Environmental and Social Impact Assessment (EIA)

1.2.1 Scope

The Kenya Government policy on all new projects, programmes or activities requires that an Environmental and Social Impact Assessment be carried out at the planning stages of the proposed undertaking to ensure that significant impacts on the environment are taken into consideration during the design, construction, operation and decommissioning of the facility. The scope of this Environmental and Social Impact Assessment, therefore, covered:

- The baseline environmental conditions of the area,
- Description of the proposed project,
- Provisions of the relevant environmental laws,
- Identification and discuss of any adverse impacts to the environment anticipated from the proposed project,
- Appropriate mitigation measures, and
- Provision of an environmental management plan outline.

1.2.2 Terms of Reference (TOR) for the EIA Process

It was recognised that any form of development such as the proposed residential building project is likely to impact the site and the surrounding environment hence, before any commencement of any work, there was an urgent need to carry out an Environmental and Social Impact Assessment in compliance with the Environmental Management and Coordination Act (EMCA) of 1999 and Environmental Impact Assessment and Audit Regulations, 2003.

The Environmental and Social Impact Assessment included the necessary specialist studies to determine the environmental impacts relating to the biophysical, health and safety and socio-economic aspects and to determine the issues or concerns from the relevant authorities and interested and/or affected parties. The appropriate measures to ensure co-existence of the

proposed development with other social and economic activities in the area are provided as part of Environmental Management Action Plan.

The main objective of the assignment was to assist the proponent to prepare a study report after carrying out an Environmental and Social Impact Assessment (EIA) of the residential building project, to ensure the proposed development takes into consideration appropriate measures to mitigate any adverse impacts to the environment. The study identified existing and potential environmental impacts and possible concerns that interested and/or affected parties have with the development, as well as the associated prevention and mitigation measures for the negative impacts as stipulated in the Environmental Management Plan (EMP) proposed.

The consultant on behalf of the proponent conducted the study by incorporating but not limited to the following terms of reference:-

- The proposed location of the project.
- A concise description of the national environmental legislative and regulatory framework, baseline information, and any other relevant information related to the project.
- The objectives of the project.
- The technology, procedures and processes to be used, in the implementation of the project.
- The materials to be used in the construction and implementation of the project.
- The products, by-products and waste to be generated by the project.
- A description of the potentially affected environment.
- The environmental effects of the project including the social and cultural effects and the direct, indirect, cumulative, irreversible, short-term and long-term effects anticipated.

- To recommend a specific environmentally sound and affordable wastewater management system.
- Provide alternative technologies and processes available and reasons for preferring the chosen technology and processes.
- Analysis of alternatives including project site, design and technologies.
- An environmental management plan proposing the measures for eliminating, minimizing or mitigating adverse impacts on the environment, including the cost, timeframe and responsibility to implement the measures.
- Provide an action plan for the prevention and management of the foreseeable accidents and hazardous activities in the cause of carrying out development activities.
- Propose measures to prevent health hazards and to ensure security in the working environment for the employees, residents and for the management in case of emergencies.
- An identification of gaps in knowledge and uncertainties which were encountered in compiling the information.
- An economic and social analysis of the project.
- Such other matters as the Authority may require.

1.2.3 Data collection procedures

First, the Consultant undertook environmental screening and scoping to avoid unnecessary data. The data collection was carried out through questionnaires/standard interview schedules, use of checklists, observations and photography, site visits and desktop environmental studies, where necessary in the manner specified in Part V (section 31-41) of the Environmental (Impact Assessment and Audit) Regulations, 2003.

1.2.4 Reporting and documentation

The Environmental Impacts Assessment Study report from the findings was compiled in accordance with the guidelines issued by NEMA for such works and was prepared and submitted by the proponent for consideration and approval. The Consultant ensured constant briefing of the client during the exercise. Description plans and sketches showing various activities are part of the appendices.

1.2.5 Responsibilities and undertaking

The Consultant (Lead Expert) undertook to meet all logistical costs relating to the assignment, including those of production of the report and any other relevant material. The consultant arranged for own transport and travels during the exercise. On the site of the proposed project, the proponent provided a contact person(s) to provide information required by the consultant. The proponent also provided site plan(s) showing roads, service lines, buildings layout and the actual sizes of the sites, details of raw materials, proposed process outline and anticipated by-products, future development plans, operation permits and conditions, land-ownership documents and site history. The output from the consultants includes the following:-

- An Environmental and Social Impact Assessment (ESIA) report comprising of an executive summary, study approach, baseline conditions, anticipated impacts and proposed mitigation measures,
- An Environmental Management Plan outlines which also forms part of the report recommendations.

1.3 Methodology Outline

Since the proposed site is located within an area with no rich natural resources whose total effect to the surroundings could not be adverse and noting that the intended development and use of the facility will be in line with what exists in the surrounding areas, an environmental study report would be seen to be adequate. The general steps followed during the assessment were as follows:

i. Environment screening, in which the project was identified as among those requiring environmental impact assessment under schedule 2 of EMCA, 1999

ii. Environmental scoping that provided the key environmental issues

iii. Desk Stop studies and interviews

iv. Physical inspection of the site and surrounding areas

v. EIA Public participation by the use of questionnaires

vi. Reporting.

1.3.1 Environmental screening

This step was applied to determine whether an Environmental and Social Impact Assessment was required and what level of assessment was necessary. This was done in reference to requirements of the EMCA, 1999, and specifically the second schedule. Issues considered included the physical location, sensitive issues and nature of anticipated impacts.

1.3.2 Environmental scoping

The scoping process helped narrow down onto the most critical issues requiring attention during the assessment. Environmental issues were categorized into physical, natural/ecological and social, economic and cultural aspects.

1.3.3 Desktop study

This included documentary review on the nature of the proposed activities, project documents, designs policy and legislative framework as well as the environmental setting of the area among others. It also included discussions with managers and design engineers as well as interviews with neighbours.

1.3.4 Site assessment and public participation

Field visits were meant for physical inspections of the site characteristics and the environmental status of the surrounding areas to determine the anticipated impacts. To ensure adequate public participation in the EIA process, questionnaires were administered to the sites

neighbours within a one kilometre radius and the information gathered was subsequently synthesised and incorporated into the EIA study report.

1.3.5 Reporting

In addition to constant briefing of the client, this Environmental and Social Impact Assessment Report was prepared. The contents were presented for submission to NEMA as required by law.

CHAPTER 2. DESCRIPTION OF THE PROJECT

2.1 Proposed Project Description

The apartment will be a thirteen storey building; with two basement parking area. The proposed Grand Premier Apartments will consist of **four (4) units** that will be **Three (3) bedrooms**, **100 units** that will comprise of **Two (2) bedrooms,** and **48 units** that will be **One (1) bedroom**. There shall be toilets within the housing complex. The sewage waste will be managed by the Nairobi municipal council. The assessment team learnt that the materials were sourced from within the country. The source of energy will be mains electricity and water will be sourced from the Nairobi Water and Sewerage Company.

Environmental concerns now need to be part of the planning and development process and not an afterthought, it is therefore advisable to avoid land use conflicts with the surrounding area. To avoid unnecessary conflicts that retard development in the country, the proponent undertook this Environmental and Social Impact Assessment and incorporated environmental concerns as advised by the Authority. The project will cost approximately Kenya Shillings seven hundred million (Kshs. 700,000,000).

2.2 Location and size of the project

The proposed project will be situated approximately along Argwings Kodhek Road few metres before Valley Arcade. It is within the jurisdiction of Nairobi County Government, Nairobi County on a plot measuring 0.2036HA. The development will be on title deed issued on 27th May 2071. The title deed was issued in accordance with the registered Land Act Chapter 300 by the Ministry of Land–Nairobi District Land Registry. The same has been annexed in this report.

Figure 1: Location of the Proposed Project

The location of the proposed project is on a prime land for residential flat construction and the proposed project is in consistent with the current urban planning and zonation (Fig 1). The high rate of urbanization caused by rural-urban migration in the country has created a high demand for housing facilities. The assessment team learnt that the materials were sourced from within the country. The source of energy will be mains electricity and water will be sourced from Nairobi water pipeline.

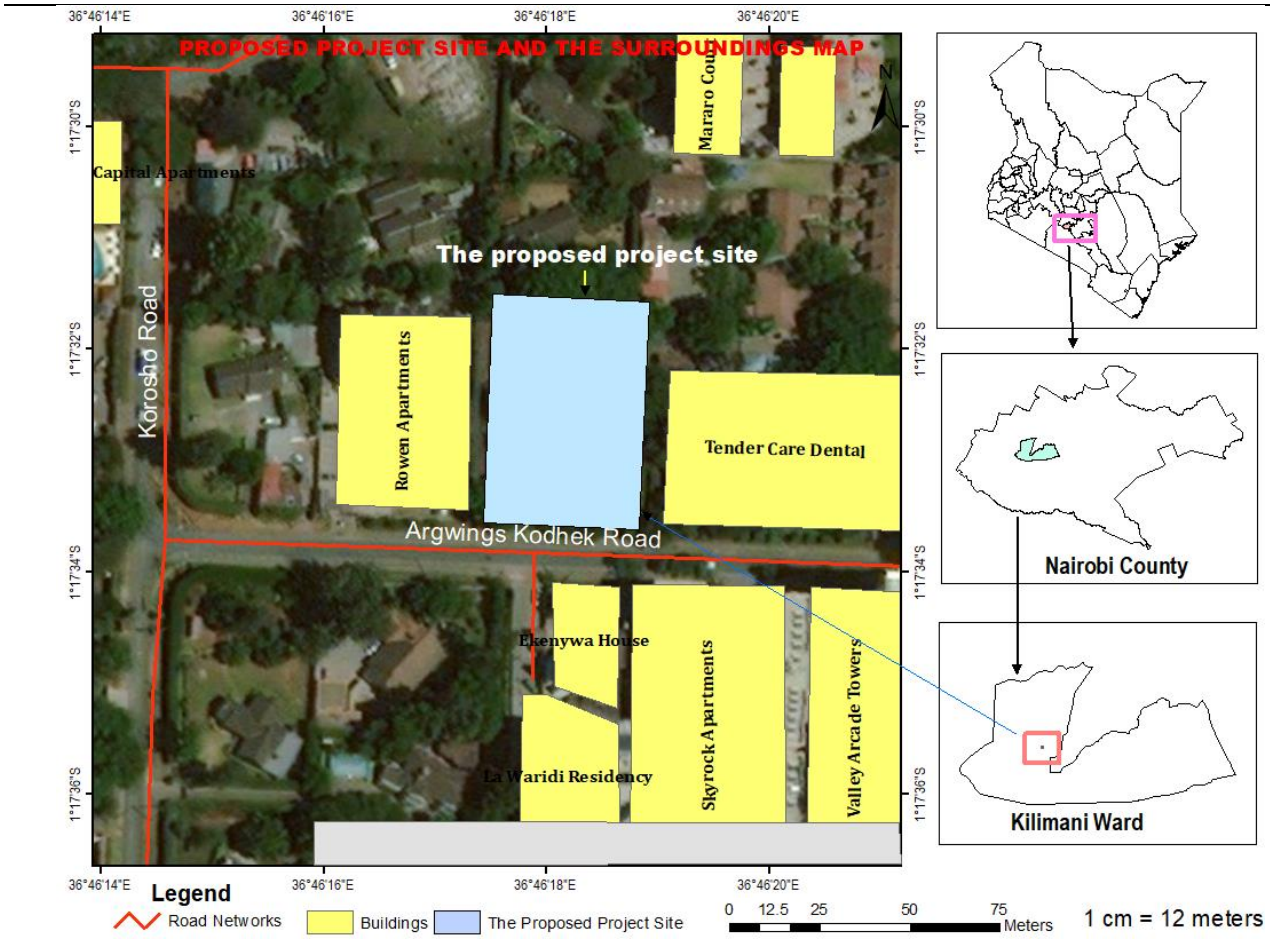


Figure 2: Location of the Proposed Project and Administrative boundaries

Plate 1: Decommissioning of structures at the proposed project site

Plate 2: Some stakeholders within the proposed project site

Plate 3: The adjacent multi-dwelling Grand Premier apartments

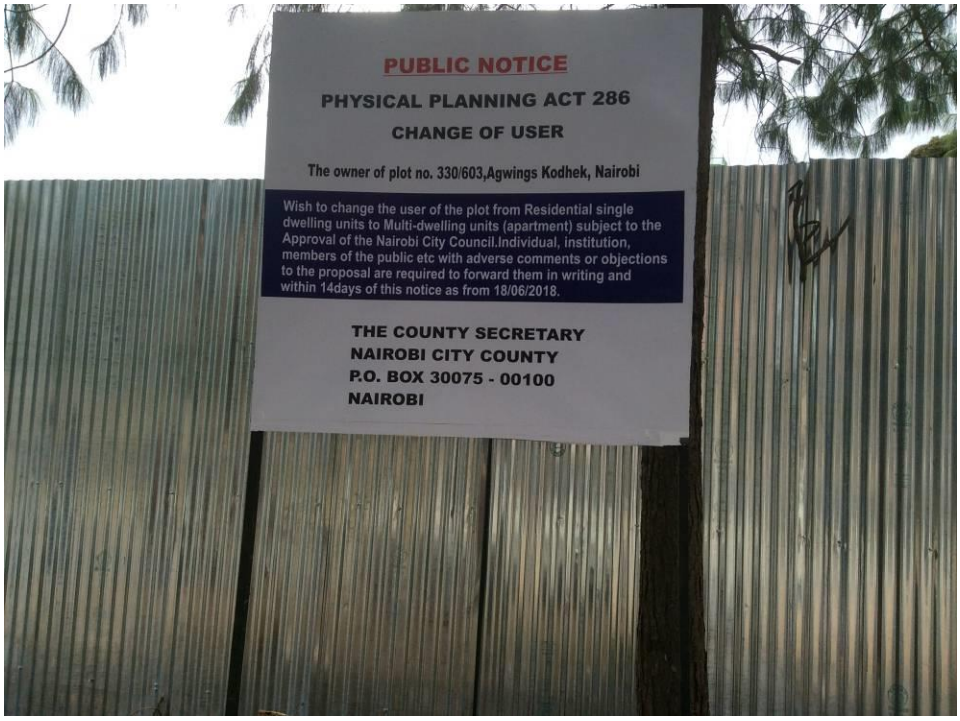


Plate 4: Public notice at the proposed project site during change of user process

2.3 Character of Surrounding Environment

The Kilimani area has a wide range of commercial engagements such as retail supermarkets, banks, insurance business, petrol station and small scale traders. There are also single dwellings and multi dwellings units. The proposed project is therefore in character with the surrounding.

Plate 5: Some vegatation cover neighbouring the proposed project site

2.4 Design of the project

In general, the design of the project will tend to essentially optimise the use of best available technology to prevent or minimize potentially significant environmental impacts associated with the project and to incorporate efficient operational controls together with trained staff, to ensure high level business and environmental performances.

2.5 Institutional Building

The technology used in the design and construction of the building will be based on international standards, which have been customized by various housing complexes in Kenya. The development will be a 13 **storey building** (refer to architectural drawings attached). The building will be provided with gutters to reduce storm water from the roof top through peripheral drainage systems into storm water drainage system. Drainage pipes will be of the pvc type and will be laid under the buildings and the driveway and will be encased in concrete. The building has two temporary latrines to be used during project's construction phase. The buildings will have adequate natural ventilation through provision of permanent vents in all rooms, adequate natural and artificial light, piped water stored in overhead tanks.

2.5.1 Electrical system

The site is currently connected to electricity however the power has not been extended to the area under construction since the construction is not yet complete. The various components of the electrical system shall comprise single and twin socket outlet, lockable meter board with glass view panel, and security lights. The necessary guidelines and precautionary measures relating to the use of electricity shall be adhered to.

2.5.2 Water reticulation system

The project will be supplied with water from Nairobi Water and Sewerage Company. There will be water storage tanks to increase water capacity at the project site. There will be a water meter to measure water abstraction and hence its cost.

2.5.3 Waste/Sewerage

Waste water from the toilets will be connected to a Nairobi Water and Sewerage System. Solid waste management will consists of dustbins stored in premises rooms protected from rain and scavenging animals. The waste will then be collected by a registered waste disposal company where it will be composted, palletised or re-cycled depending on the waste management strategy to be adopted.

2.5.4 Storm water run-off

All storm water drainage will be channelled into open storm water drain systems.

2.6 Description of the project's construction activities

2.6.1 Excavation and foundation works

Excavation will be carried out to prepare the site for construction of foundations, pavements and drainage systems. This may involve the use of heavy earthmoving machinery such as tractors.

2.6.2 Storage of materials

Building materials will be stored on site. Bulky materials such as rough stones, ballast, sand and steel will be carefully piled on site. To avoid piling large quantities of materials on site, the proponent will order bulky materials such as sand, gravel and stones in quotas. Materials such as cement, paints and glasses among others will be stored in temporary storage structures built for this purpose.

2.6.3 Masonry, concrete work and related activities

The construction of the building walls, foundations, floors, pavements, drainage systems, perimeter fence and garage among other components of the project involves a lot of masonry work and related activities. General masonry and related activities include stone shaping, concrete mixing, plastering, slab construction, construction of foundations, erection of building walls and curing of fresh concrete surfaces. These activities are known to be labour intensive and are supplemented by machinery such as concrete mixers.

2.6.4 Structural steel works

The building will be reinforced with structural steel for stability. Structural steel woks involve steel cutting, welding and erection.

2.6.5 Roofing works

Roofing activities will include raising the roofing materials such as iron sheets and structural timber to the roof and fastening the roofing materials to the roof.

2.6.6 Electrical work

Electrical work during construction of the premises will include installation of electrical gadgets and appliances including electrical cables, lighting apparatus, sockets etc. In addition, there will be other activities involving the use of electricity such as welding and metal cutting.

2.6.7 Storm water/run off

All storm water drainage will be channelled into open storm water drainage systems.

2.7 Description of the Project's Operational Activities

2.7 Solid waste and waste water management

The proponent will provide facilities for handling solid waste generated within the facility. These will include dust bins/skips for temporarily holding waste within the premises before final disposal at the designated dumping site.

2.7.1 Cleaning

The proponent will be responsible for ensuring regular washing and cleaning of the pavements, staircases etc. Cleaning operations will involve the use of substantial amounts of water, disinfectants and detergents.

2.7.2 General repairs and maintenance

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

2.8 Description of the Project's Decommissioning Activities

2.8.1 Demolition works

Upon decommissioning, the project components including buildings, pavements, drainage systems, and perimeter fence will be demolished. This will produce a lot of solid waste, which will be reused for other construction works or if not reusable, disposed of appropriately by a licensed waste disposal company.

2.8.2 Dismantling of equipment and fixtures

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

2.8.3 Site restoration

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

2.8.4 Material inputs, products, by-products and waste

Material Inputs:

Material inputs to be used in the construction and implementation of this project are listed below.

- Building stones (machine cut type)
- Building sand
- Ballast
- Cement
- Timber
- Steel
- PVC pipes
- Galvanized pipes
- Clay blocks
- Nails
- Damp proof membrane
- Wooden props
- Glass
- Paint

- Iron sheet
- Water
- Electrical wires

Tools and Machinery:

The following tools and machinery are to be used:

- Hammers and mattocks
- Wheelbarrows
- Spades, trowels and other masonry tools
- Concrete mixer (diesel-operated)

Outputs:

The outputs of this building development include:

- Thirteen floors of apartments,
- Power back-up generator (100kV),
- Borehole, and
- Gym and swimming pool.

Waste and by-products

The waste and by-products arising from this project include:

- Construction debris (from concrete and broken stones).
- Excavated soil.
- Wooden pieces, timber cut-offs and left-over timber.
- Waste water (at operation stage).

CHAPTER 3. BASELINE INFORMATION ON KILIMANI AREA

3.1 Location of the project

The project is located in Kilimani, Nairobi County. Kilimani is located approximately 4 kilometers (2 mi) west of Nairobi's central business district. This is south of Lavington and north of Woodley. The coordinates of the neighborhood are: 01°17'06.0"S, 36°47'12.0"E (Latitude:-1.285000; Longitude: 36.786667. Kilimani plays host to the headquarters of Sidian Bank located along Wood Avenue in Kilimani.

3.2 Climate

The climate of Kilimani area in Nairobi County and thus the project site is generally humid in character, with seasonal dry and wet periods. Rainfall has a bi-modal distribution with long rains occurring between March and May and the short rains between October and December with a mean annual rainfall amounting to 900 mm. Temperatures are highest in the months of January to mid-march and lowest in July and August.

Since Nairobi lies close to the Equator but being 1680 m above sea level, its temperatures are modified tropical, but not torrid. The mean annual is 17°C and mean daily maximum and daily minimum are 23°C and 12°C respectively. On the other hand, the mean annual rainfall is 1080 mm falling in two distinct seasons: long rains from March to May and short rains from mid-October to December.

3.4.1 Average Temperatures

With the exception of July and August, Nairobi has been recording mean monthly temperatures of 17°C.But, the daily range is usually high; differences between maximum and minimum daily temperatures are 10 °C in May and 15°C in February. The winds and clouds bring a cooling effect during the day with some instances recording a maximum of 15°C. The minimum temperature also remains low during cloudy nights, usually hovering around 8 °C and at times reaching 6°C. Clear skies in January and February also bring colder nights. The highest temperature ever registered in Nairobi was 32.8°C and the lowest was 3.9°C. 2

3.4.2 Average Rain Amounts

Nairobi experiences a bi-modal rainfall pattern ranging from 500mm to1000mm per annum. This is due to high humilities usually experienced in the city. Most of the rainfall figures crash down in in one major and one minor monsoon seasons respectively. The major monsoon season is experienced in the months of March, April and May, and is called the "Long Rains" by the locals. The minor monsoon seasons occur between October and December, referred as "Short Rains" period. That is the information derived from the meteorological department. With the climatic variations experienced globally, this climatic data has been changing over years.

3.4.3 Geology

The site is underlain by Cenozoic volcanic and sediments with the lavas showing an easterly flow direction away from the Great Rift Valley. The formations are quite deep, resting directly on the basement rock and are considered to be part of post-Miocene era. The volcanics are represented by Kerichwa valley series (thinly bedded, impermeable strata), Nairobi Trachytes (thin flows with inter bedded sediments or tuffs), Ngong Basalts, Upper Athi series (sandy sediments, tuffs and welded tuffs with subordinate quantities of clay) and the Mbagathi phonolitic trachyte (vesicular, porphyritic rock with crowded feldspar laths in a rusty brown fine grained matrix).

3.4.4 Soils

The soils of the site area are products of weathering of mainly volcanic rocks. Weathering has produced soils that reach more than 50 feet (15m) in thickness. A number of subdivisions are recognized in the Nairobi area according to drainage, climatic regions and slopes and other categories have been introduced for lithosols and regosols. The area is characterized by soil types ranging from sandy-clayed to black cotton like soils at the top. The Exploratory Soil Map of Kenya (Sombroek et al, 1982) describes the soil distribution pattern and the solid characteristics of the area that holds the premises under audit and its environs as the vertisols. The vertisols are imperfectly drained and vary from shallow to very deep dark gray (black

cotton soils) to black half ripe clay soils. They are dark red or black friable to firm cracking clay soils that are acidic in some places.

3.5 Socio-Economic Environment

The attributes of socio-economic environment include land use; population and housing; economic activity (including employment and income), community; transportation and health and safety.

3.5.1. Land use

Land use is a primary indicator of the extent and degree of the impact man has made on the surface of the earth. It reflects political, social, and economic aspects of the intensity of human lifestyles. The relationship between land, soil, and physical conditions on the one hand and human activities on the other hand may be used to evaluate land use conditions. The proposed project site is on Nairobi County and this site lies within an area for both commercial and residential activities.

Plate 6: Proposed project site (left) and adjacent Grand Premier apartments (right)

3.5.2. Economic Activity

Nairobi is home to a good number of manufacturing industries which offer employment to the indigenous population, people from other parts of the country and abroad. Some of the major industries include Uniliver, General Motors, Mabati Rolling Mills, Kapa Oil Refineries, East African Motors, Toyota Kenya Ltd. and Madhupaper International. Other economic activities in the city include retail and wholesale of merchandise, professional consultancy, banking, construction activities, and open air markets, running petrol stations.

CHAPTER 4. RELEVANT LEGISLATIGVE AND REGULATORY FRAMEWORK

4.1 Introduction

There is a growing concern in Kenya and at global level that many forms of development activities cause damage to the environment. Development activities have the potential to damage the natural resources upon which the economies are based. Environmental and Social Impact Assessment is a useful tool for protection of the environment from the negative effects of developmental activities. It is now accepted that development projects must be economically viable, socially acceptable and environmentally sound.

According to Sections 58 and 138 of the Environmental Management and Coordination Act (EMCA) No. 8 of 1999 and Section 3 of the Environmental (Impact Assessment and Audit) Regulations 2003 (Legal No. 101), residential complexes require an Environmental and Social Impact Assessment project/study report prepared and submitted to the National Environment Management Authority (NEMA) for review and eventual Licensing before the development commences. This was necessary as many forms of developmental activities cause damage to the environment and hence the greatest challenge today is to maintain sustainable development without interfering with the environment.

4.2 Environmental Problems in Kenya

There are many environmental problems and challenges in Kenya today. Among the cardinal environmental problems include: loss of biodiversity and habitat, land degradation, land use conflicts, human animal conflicts, water management and environmental pollution. This has been aggravated by lack of awareness and inadequate information amongst the public on the consequences of their interaction with the environment.

4.3 Environmental Policy Framework

Environmental and Social Impact Assessment (EIA) critically examines the effects of a project on the environment. An EIA identifies both negative and positive impacts of any development activity or project, how it affects people, their property and the environment. EIA also identifies measures to mitigate the negative impacts, while maximizing on the positive ones. EIA is basically a preventive process. It seeks to minimize adverse impacts on

the environment and reduces risks. If a proper EIA is carried out, then the safety of the environment can be properly managed at all stages of a project-planning, design, construction, operation, monitoring and evaluation as well as decommissioning. The assessment is required at all stages of project development with a view to ensuring environmentally sustainable development for both existing and proposed public and private sector development ventures. The National EIA regulations were issued in accordance with the provisions of Environmental Management and Coordination Act (EMCA) of 1999. The EIA Regulations must be administered, taking into cognizance provisions of EMCA 1999 and other relevant national laws.

4.4 Institutional Framework

At present there are over twenty (20) institutions and departments which deal with environmental issues in Kenya. Some of the key institutions include the National Environmental Council (NEC), National Environment Management Authority (NEMA), the Forestry Department, Kenya Wildlife Services (KWS) and others.

4.4.1 National Environment Management Authority (NEMA)

The objective and purpose for which NEMA is established is to exercise general supervision and co-ordinate over all matters relating to the environment and to be the principal instrument of the government in the implementation of all policies relating to the environment:

However, NEMA mandate is designated to the following committees:

i). National Environment Council (NEC)

EMCA 1999 No. 8 part iii section 4 outlines the establishment of the National Environment Council (NEC). NEC is responsible for policy formulation and directions for purposes of EMCA; set national goals and objectives and determines policies and priorities for the protection of the environment and promote co-operation among public departments, local authorities, private sector, non-governmental organisations and such other organisations engaged in environmental protection programmes.

ii). National Shelter Strategy to the Year 2000

This strategy followed the international Year of shelter for the homeless in 1987 and was formulated to advocate a change in policy in order to allow other actors to come in and assist the government in providing housing. The government was to simply facilitate other actors such as the proposed commercial building project developers to invest in shelter.

iii). The National Poverty Eradication Plan (NPEP)

The NPEP has the objective of reducing the incidence of poverty in both rural and urban areas by 50 percent by the year 2015; as well as strengthening the capabilities of the poor and vulnerable groups to earn income.

4.4.2 Environmental Legal Framework

Environmental Management and Co-ordination Act No. 8 of 1999, provide a legal and institutional framework for the management of the environmental related matters. It is the framework law on environment, which was enacted on the 14th of January 1999 and commenced in January 2002. Topmost in the administration of EMCA is National Environment Council (NEC), which formulates policies, set goals, and promotes environmental protection programmes. The implementing organ is National Environment Management Authority (NEMA). EMCA comprises of the parts covering all aspects of the environment.

Part VIII, section 72 of the Act prohibits discharging or applying poisonous, toxic, noxious or obstructing matter, radioactive or any other pollutants into aquatic environment. Section 73 requires that operators of projects which discharge effluent or other pollutants submit to NEMA accurate information about the quantities and quality of the effluent. Section 74 demands that all effluent generated from point sources are discharged only into the existing sewages system upon issuance of prescribed permit from the Local Authorities. Figure 1 below shows the EMCA Institutional Framework.

4.4.3 Public Health Act (Cap. 242)

Part IX, section 115, of the Act states that no person/institution shall cause nuisance or condition liable to be injurious or dangerous to human health. Section 116 requires that Local Authorities take all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and sanitary to prevent occurrence of nuisance or condition liable to be injurious or dangerous to human health. Such nuisance or conditions are defined under section 118 as waste pipes, sewers, drainers or refuse pits in such state, situated or constructed as in the opinion of the medical officer of health to be offensive or injurious to health.

4.4.5 Physical Planning Act, 1999

The Local Authorities are empowered under section 29 of the Act to reserve and maintain all land planned for open spaces, parks, urban forests and green belts. The same section, therefore allows for the prohibition or control of the use and development of land and buildings in the interest of proper and orderly development of an area. Section 30 states that any person who carries out development without development permission will be required to restore the land to its original condition. It also states that no other licensing authority shall grant license for commercial or industrial use or occupation of any building without a development permission granted by the respective Local Authority.

4.4.6 Land Planning Act (Cap. 303)

Section 9 of the subsidiary legislation (The Development and Use of Land Regulations, 1961) under this Act requires that before the local authorities submit any plans to then Minister for approval, steps should be taken as may be necessary to acquire the owners of any land affected by such plans.

4.4.7 Water Act, 2002

Part II, section 18, of the Water Act 2002 provides for national monitoring and information system on water resources. Following on this, sub-section 3 allows the Water Resources

Management Authority (WRMA) to demand from any person or institution, specified information, documents, samples or materials on water resources. Under these rules, specific records may require to be kept by a facility operator and the information thereof furnished to the Authority.

The Water Act Cap 372 vests the rights of all water to the state, and the power for the control of all body of water with the Minister, the powers is exercised through the Minister and the Director of water resources in consultation with the water catchments boards, it aims at among others:

i. Provision of conservation of water, and
ii. Appointment and use of water resources.

4.4.8 Electricity Power Act No. 11 of 1997

The Electric Power Act No. 11 enacted in 1997 deals with generation, transmission, distribution, supply and use of electrical energy as well as the legal basis for establishing the systems associated with these purposes. In this respect, the following environmental issues will be considered before approval is granted:

i. The need to protect and manage the environment, and conserve natural resources;

ii. The ability to operate in a manner designated to protect the health and safety of the project employees; the local and other potentially affected communities.

Under schedule 3 of the Electric Power (licensing) Regulations 2003, it is mandatory to comply with all safety, health and environmental laws. Moreover, schedule 2 (regulation 9) of the Electric Power (licensing) Regulations 2003 stipulates that licensing and authorisation to generate and transmit electrical power must be supported by the following documents which are approved by NEMA.

i. Environmental and Social Impact Assessment Report (ESIA) or

ii. Initial Environmental Audit Report (IEA) and

iii. Environmental Management Plan (EMP)

4.4.9 Building Code 2000

Section 194 requires that where sewer exists, the occupants of the nearby premises shall apply to the Local Authority for a permit to connect to the sewer line and all the wastewater must be discharged into sewers.

4.4.10 Penal Code Act (Cap.63)

Section 191 of the penal code states that if any person or institution that voluntarily corrupts or foils water for public springs or reservoirs, rendering it less fit for its ordinary use is guilty of an offence. Section 192 of the same Act says a person who makes or vitiates the atmosphere in any place to make it noxious to health of persons /institution, dwelling or business premises in the neighbourhood or those passing along public way, commit an offence.

4.4.11 Occupational Safety and health Act (OSHA) (Cap 514)

Before any premises are occupied, or used a certificate of registration must be obtained from the chief inspector. The occupier must keep a general register. The Act covers provisions for health, safety and welfare.

Health

The premise must be kept clean, daily removal of accumulated dust from floors, free from effluvia arising from any drain, sanitary convenience or nuisance and without prejudice to the generality of foregoing provision. A 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, must be provided subject to conformity with any standards prescribed by rules. Food and drinks should not be partaken in dangerous places or workrooms.

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.

Safety

Fencing of premises and dangerous parts of other machinery is mandatory. Training and supervision of inexperienced workers, protection of eyes with goggles or effective screens must be provided in certain specified processes. Floors, passages, gangways, stairs, and ladders must be soundly constructed and properly maintained and handrails must be provided for stairs.

Special precaution against gassing is laid down for work in confined spaces where persons are liable to overcome by dangerous fumes. Air receivers and fittings must be of sound construction and properly maintained. Adequate and suitable means for extinguishing fire must be provided in addition to adequate means of escape in case of fire must be provided.

Welfare

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. Sitting facilities for all female workers whose work is done while standing should be provided to enable them take advantage of any opportunity for resting.

Section 42 stipulates that every premise shall be provided with maintenance, readily accessible means for extinguishing fire and person trained in the correct use of such means shall be present during all working periods.

Section 45 states that regular individual examination or surveys of health conditions of industrial medicine and hygiene must be performed and the cost will be met by the employer. This will ensure that the examination can take place without any loss of earning for the employees and if possible within normal working hours.

Section 55B provides for development and maintenance of an effective programme of collection, compilation and analysis of occupational safety. This will ensure that health statistics, which shall cover injuries and illness including disabling during working hours, are adhered.

4.4.12 Way leaves Act Cap 292

According to the Way leaves Act cap 292 Section 2, Private land does not include any land sold or leased under any Act dealing with Government lands. Section 3 of the Act states that the Government may carry any sewer, drain or pipeline into, though, over or under any lands whatsoever, but may not in so doing interfere with any existing building. Section 8 further states that any person who, without the consent of the Permanent Secretary to the Ministry responsible for works (which consent shall not be unreasonably withheld), causes any building to be newly erected over any sewer, drain or pipeline the property of the Government shall be guilty of an offence and liable to a fine of one hundred and fifty shillings, and a further fine of sixty shillings for every day during which the offence is continued after written notice in that behalf from the Permanent Secretary; and the Permanent Secretary may cause any building erected in contravention of this section to be altered, demolished or otherwise dealt with as he may think fit, and may recover any expense incurred by the Government in so doing from the offender.

4.4.13 Registration of Titles Act Cap 281

Section 34 of this Act states that when land is intended to be transferred or any right of way or other easement is intended to be created or transferred, the registered proprietor or, if the proprietor is of unsound mind, the guardian or other person appointed by the court to act on his/her behalf in the matter, shall execute, in original only, a transfer in form F in the First Schedule, which transfer shall, for description of the land intended be dealt with, refer to the grant or certificate of title of the land, or shall give such description as may be sufficient to identify it, and shall contain an accurate statement of the land and easement, or the easement, intended to be transferred or created, and a memorandum of all leases, charges and other encumbrances to which the land may be subject, and of all rights-of-way, easements and privileges intended to be conveyed.

4.4.14 Land Titles Act Cap 282

The Land Titles Act Cap 282 section 10 (1) states that there shall be appointed and attached to the Land Registration Court a qualified surveyor who, with such assistants as may be necessary, shall survey land, make a plan or plans thereof and define and mark the boundaries of any areas therein as, when and where directed by the Recorder of Titles, either before, during or after the termination of any question concerning land or any interest connected therewith, and every area so defined and marked shall be further marked with a number of other distinctive symbol to be shown upon the plan or plans for the purposes of complete identification and registration thereof as is herein after prescribed.

CHAPTER 5. PUBLIC PARTICIPATION

5.1 Sources of Information

One of the key information sources used during the Environmental and Social Impact Assessment exercise was public participation exercise. Positive and negative views of the project site neighbours were sought during the site visit. The exercise was conducted by a team of experienced registered environmental experts via administration of pre-designed questionnaires and by interviewing neighbours surrounding the proposed project site. The purpose for such interviews was to identify the positive and negative impacts and subsequently promote and mitigate them respectively. It also helped in identifying any other miscellaneous issues which may bring conflicts in case project implementation proceeds as planned.

5.2 Issues raised

Potential positive and negative impacts of the proposed development were raised by the neighbors during the interview. They also raised measures to mitigate the negative impacts.

Increase in housing facilities

The people interviewed mentioned that the proposed project would be beneficial, since it would address the high demand for housing in the area.

Employment Opportunities

The persons interviewed were positive that during its construction, the project has and will continue to create numerous employment opportunities for the local residents most of whom are currently jobless.

Dust emissions

The people expressed concern over possibility of generation of large amount of dust and fumes within the project site and surrounding areas as a result of excavation works and transportation of building materials. The proponent will ensure that dust levels at the site are minimized through sprinkling water in areas being excavated and along the tracks used by the

transport trucks within the site. Additional mitigation measures presented within the EMP will be fully implemented to minimize the impacts of dust generation.

Summary of possible positive impacts:

i. Employment opportunities
ii. Increased residential houses
iii. Improved Business opportunities
iv. improve economy growth of the area
v. Enhanced security/decreased idleness

Summary of possible negative impacts and proposed mitigation measures:

i. Noise pollution
ii. Propose to adhere to the noise regulations of 2009 in abating noise pollution
iii. Dust emissions
iv. The proponent to sprinkle water to reduce dust emissions. Dust nets and covers to be installed at the site
v. Traffic jam and congestion
vi. Use of alternative roads or movements during the off work hours such as during the night in transporting materials to and from the site
vii. Water shortage
viii. The proponent to adapt methods of conserving water and supplementing supply though will have to adapt ways of conserving water and supplementing supply through installing water harvesting and storage techniques such as water tank storage tanks, for operational use in the present and future project activities.
ix. Security scare
x. To deploy security firm that will provide security services to the site and the neighbors
xi. Solid waste
xii. Roads to be swept, the waste to be degraded, dust bins provided for waste collection. Waste to be transported by licensed transported and disposed in a designated and authorized disposal site.
xiii. Waste water
xiv. Waste water be drained in existing sewer systems as well as expanding the sewer lines.
xv. Overpopulation
xvi. Lose of scenic view- blocked by tall buildings

Eight three (83) percent of the participants supports the project, while seventeen (17) percent of the participants does not support the project (=3)

Source of information

Consultation and public consultation exercise took place on 22nd November 2018 by the lead expert. Pre-designed questionnaires were administered to the neighbors surrounding the proposed development. The purpose of the exercise in compliance to EMCA, Cap 387 of 2015 and Environmental Impact Assessment &Audit Regulations, 2003, is to identify possible positive and negative impacts of the proposed development as well as adopt and mitigate them respectively. General view of the proposed development is good.

CHAPTER 6. POTENTIAL IMPACTS

6.1 Introduction

This Section identifies both positive and negative impacts associated with the proposed project. These impacts are hereby identified at three distinct phases of the project i.e. - Construction Phase, Operation Phase and Decommissioning Phase although another study should be carried out during the projects decommissioning phase.

6.2 Construction phase

6.2.1 Positive Impacts

1. Employment opportunities

One of the main positive impacts during projects construction phase is the availability of employment opportunities especially to casual workers and several other specialised workers. Employment opportunities are of benefit both economically and in a social sense. In the economic sense it means abundant unskilled labour will be used in construction hence economic production. Several workers including casual labourers, masons, carpenters, joiners, electricians and plumbers are expected to work on the site from start to the end. Apart from casual labour, semi skilled and unskilled labour and formal employees are also expected to obtain gainful employment during the period of construction.

2. Improving growth of the economy

Through the use of locally available materials during the construction phase of the project including cement, concrete and ceramic tiles, timber, sand, ballast electrical cables etc, the project will contribute towards growth of the economy by contributing to the gross domestic product. The consumption of these materials, fuel oil and others will attract taxes including VAT which will be payable to the government hence increasing government revenue while the cost of these raw materials will be payable directly to the producers.

3. Boosting of the informal sector

There are usually several informal businesses which come up during the construction periods of such projects. These include activities such as food vending who benefit directly from the construction staff members who buy food and other commodities from them. This will promote the informal sector in securing some temporary revenue and hence livelihood.

6.2.2 Negative Impacts

1. Disposal of excavation materials

Some of the excavation material will be rendered unusable and thus will have to be disposed of. This also applies to some of the soil/rocks which may not be reusable after excavation processes are complete. All these materials needs to be collected, transported and disposed off appropriately in approved designated areas. It is encouraged that other alternative uses of these materials should be found.

2. Storm water

Storm water runoff either from the site or from the neighbouring compounds may run into the site thereby causing interference to the construction operation.

3. Noise pollution

The construction works on site will most likely have noise operation due to the moving machines (mixers, tippers, communicating workers), incoming vehicles to deliver construction materials, workers to site and other normal construction activities. This may prove to be a potential source of disturbance to the surrounding neighbours and a health hazard to the workers themselves. Such noise emissions should be minimised as much as possible from the source point while workers should be provided with appropriate personal protective wear.

4. Dust emissions

Particulate matter pollution is likely to occur during the site clearance, excavation and loading and transportation of the construction waste. There is a possibility of PM_{10} suspended and settle-able particles affecting the site workers and even neighbours health.

5. Increased water demand

Both the workers and the construction works will create an increased demand for water in addition to the existing demand. Water will be mostly used in the creation of aggregates for construction works and for wetting surfaces for softening or hardening after creating the formworks.

6. Generation of exhaust emissions

Exhaust emissions are likely to be generated during the construction period by the various construction machinery and equipment. Motor vehicles used to mobilise the work force and materials for construction would cause a potentially significant air quality impact by emitting pollutants through gaseous exhaust emissions.

7. Building materials and energy used

Several building materials will be required for construction of the flats and associated facilities. These will include sand, ballast, hard core, timber, cement, clay tiles, metal sheets, electrical gadgets, steel, plumbing materials, glass and paints among others. Most of these materials will be obtained locally within the surrounding areas.

The main sources of energy that will be required for construction of the project will include mains electricity and fossil fuels (especially diesel). Electricity will be used for welding, metal cutting/grinding and provision of light. Diesel will run material transport vehicles and building equipment/machinery. The proponent should promote efficient use of building materials and energy through proper planning to reduce economic and environmental costs of construction activities.

8. Waste management

Large amounts of solid waste will be generated during construction of the project. These will include metal cuttings, rejected materials, surplus materials, surplus spoil, excavated materials, paper bags, empty cartons, empty paint and solvent containers, broken glass among others.

Solid wastes if not well managed have a potential of causing disease outbreaks due to suitable breeding conditions for vectors of cholera and typhoid. Malaria outbreak could also be exacerbated by the presence of open water ditches for breeding of anopheles mosquitoes. The major vulnerable groups are children who could be exposed to these conditions.

The construction workers will also generate faecal waste during their day-to-day operations. The generated waste needs proper handling to prevent disease, for example cholera, typhoid and diarrhoea outbreak on the site. Unless this is addressed, it can prove to be an environmental/health disaster. A pit latrine(s) or mobile toilets should be established on site to avoid such health risks.

9. Increased runoff from new impervious areas

Construction of houses and paved roads could result in additional runoff through creation of impervious areas and compaction of soils. Impervious areas and compacted soils generally have higher runoff coefficients than natural area, and increased flood peaks are a common occurrence in developed areas.

10. Workers accidents and hazards during construction

During construction of the proposed project, it is expected that construction workers are likely to have accidental injuries and hazards as a result of accidental occurrences, handling hazardous waste, lack or neglect of the use of protective wear etc. All necessary health and safety guidelines should be adhered to so as to avoid such circumstances. Workers are also likely to be exposed to diseases from contact with potentially harmful building materials. It is therefore recommended that before the construction activities, there is need for the materials to be well inspected and harmonised to the occupational health and safety standards.

6.3 Operation phase

6.3.1 Positive Impacts

1. Economic growth of the area

The development of this flat will lead to increase in population in the area and hence more customers for the businesses in the area.

2. Employment opportunities

Employment opportunities are one of the long term impacts of the project that will be realised after construction and during the operation and maintenance of the flats.

3. Optimal use of land

By creating building the design has incorporated an optimal use of the available land by providing residential units. Land is a scarce resource in Kenya and through construction of the proposed project will ensure optimal use of land.

4. Incorporation of collective waste management

The project is designed such that there will be provision of a designated spot for the dumping of garbage which is well protected from rain and animals. This wastes will thus be collected from the site in bulk and as one unit such that the careless disposal and hence proliferation of wastes within the surrounding areas will be curbed.

5. Increase in revenue

There will be positive gain for the revenue system arising from the sale or renting of the houses to the people. The proponent will thus be left with the management part of the apartments from which revenue will still be collected.

6.3.2 Negative Impacts

1. Increased pressure on infrastructure

The project will lead to increased pressure on existing infrastructure such as roads, service lines etc due to the increased number of people who will be using these facilities which will directly translate into increased in volume of the relevant parameter.

2. Electricity consumption

In completion, the project shall consume large amount of electricity due to the number of units being proposed and the activities that will take place once the project is complete. Since electric energy in Kenya is generated mainly through natural resources, namely water and geothermal resources, increased use of electricity have adverse impacts on these natural resources base and their sustainability.

3. Occupants solid waste

A lot of waste such as waste from foodstuffs, empty plastic containers, cartons, papers etc will be generated during the operational phase of the project. Once the proposed project is complete 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.

6.4 Decommissioning phase

6.4.1 Positive impacts

1. Rehabilitation

Upon decommissioning of the proposed project, rehabilitation of the project site will be carried out to restore the site to its original status or to a better state than it was originally. This will include replacement of topsoil and re-vegetation which will lead to improved visual quality of the area.

2. Employment Opportunities

For demolition to take place properly and in good time, several people will be involved. As a result several employment opportunities will be created for the demolition staff during the demolition phase of the proposed project.

6.4.2 Negative Impacts

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 proposed project.

2. Solid Waste Generation

Demolition of the flats 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.

3. Dust

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

CHAPTER 7. MITIGATION MEASURES AND MONITORING PROGRAMMES

7.1 Introduction

This section highlights the necessary mitigation measures for the expected negative impacts of the proposed project. The potential impacts and the possible mitigation measures have herein been analyzed under three categories. These are Construction phase, Operation phase and Decommissioning Phase. References are made as to where decommissioning mitigation measures can be sought.

7.2 Construction related impacts

1. Construction waste

It is recommended that construction waste 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 construction materials left over at the end of construction will be used in other projects rather than being disposed of. In addition, damaged or wasted construction materials including cabinets, doors, plumbing and lighting fixtures, marbles and glass will be recovered for refurbishing and use in other projects.

Such measures will involve the sale or donation of such recyclable/reusable materials to construction companies, local community groups, institutions and individual residents or home owners. The proponent shall put in place measures to ensure that construction materials requirements are carefully budgeted and to ensure that the amount of construction materials left on site after construction is kept minimal.

It is further recommended that the proponent should consider the use of recycled or refurbished construction materials. Purchasing and using once-used or recovered construction materials will lead to financial savings and reduction of the amount of construction debris disposed of as waste.

Additional recommendations for minimization of solid waste during construction of the project include:-

i. Use of durable, long- lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time.

ii. Provision of facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements.

iii. Use of building materials that have minimal packaging to avoid the generation of excessive packaging waste

iv. Use of construction materials containing recycled content when possible and in accordance with accepted standards.

2. Hydrology and water quality degradation

Several measures shall be put in place to mitigate the impacts that are likely to lead to surface and groundwater quality degradation. The proponent will prepare a hazardous substance control systems and emergency response plans that will include preparations for quick and safe clean-up of accidental spills. It will prescribe hazardous-materials handling procedures to reduce the potential for a spill during construction, and will include an emergency response programme to ensure quick and safe clean-up of accidental spills. The plan will identify areas where refuelling and vehicle maintenance activities and storage of hazardous materials, if any, will be permitted.

3. Increased runoff

Increased runoff from paved grounds and expansive roofs causing extreme flooding and overflows of drainage systems shall be mitigated. Surface runoff and roof water shall be harvested and stored in underground reservoir for reuse or shall be directly channelled into storm water drains. A storm water management plan that minimizes impervious area infiltration by use of recharge areas and use of detention and/or retention with graduated outlet control structures will be designed.

4. Noise pollution

Significance of noise impacts depends on whether the project would increase noise levels above the existing ambient levels by introducing new sources of noise. Noise impacts would be considered significant if the project would result in the following:-

i. Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

ii. Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels.

iii. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

iv. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

v. The proponents shall put in place several measures that will mitigate noise pollution arising during the construction phase. The following noise-suppression techniques will be employed to minimise the impact of temporary construction noise at the project site.

vi. Install portable barriers to shield compressors and other small stationary equipment where necessary.

vii. Use quiet equipment (i.e. equipment designed with noise control elements).

viii. Co-ordinate with relevant agencies regarding all substation construction activities in the residential areas.

ix. Install sound barriers for pile driving activity.

x. Limit pickup trucks and other small equipment to an idling time of five minutes, observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible.

5. Air quality

Controlling dust during construction is useful in minimizing nuisance conditions and consequently health (respiratory and eye) complications. It is recommended that a standard set of feasible dust control measures be implemented for all construction activities. Emissions of other contaminants (Nitrogen oxides, Carbon dioxide, Sulphur oxides, and diesel related Particulate Matter PM_{10}) that would occur in the exhaust from heavy equipment are also included.

The proponent is committed to implementing measures that shall reduce air quality impacts associated with construction. All personnel working on the project will be trained on methods for minimizing air quality impacts during construction. This means that construction workers will be trained regarding the minimization of emissions during construction. Specific training will be focused on minimizing dust and exhaust gas emissions from heavy construction vehicles. Construction vehicles drivers will be under strict instructions to minimize unnecessary trips, refill petrol fuel tanks in the afternoon, and minimize idling of engines.

Dust emissions will be controlled by the following measures:

i. Watering all active construction areas when necessary.

ii. Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.

iii. Pave, apply water when necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.

iv. Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.

Generation of exhaust emission

i. In order to control exhaust emissions the following measures shall be implemented during construction.

ii. Vehicle idling time shall be minimized

iii. Alternatively fuelled construction equipment shall be used where feasible

iv. Equipment shall be properly tuned and maintained

6. Worker accidents and hazards when handling hazardous wastes

Necessary health and safety rules shall be enforced by the site foreman to ensure that all staff members adhere to these standards and are thus safe. Adequate collection and storage of waste on site and safe transportation to the disposal sites and disposal methods at designated area shall be provided. In addition covers for refuse containers and appropriate personal protective equipments to be used by workers shall also be provided by the proponent.

Workers accidents especially in deep trenching operations and from gas accumulation in septic and other confined spaces shall be mitigated by enforcing adherence to safety procedures and preparing contingency plan for accident response in addition safety education and training shall be emphasized.

7. Populations of disease vectors

Well-designed waste management system and storm water drainage systems have to be put in place so as to ensure that breeding grounds of disease carrying vectors are such as rats, flies, mosquitoes, cockroaches etc are effectively controlled. Complete waste collection and handling service will be provided by the proponent.

8. Possible exposure of workers to diseases

Possible exposure of workers to diseases from building materials at construction site shall be mitigated by occupational health and safety standards enforcement which encompasses the inspection of such raw materials to ensure required standards are met.

Controlling oil spills during construction phase:

The proponent will control the dangers of oil spills during construction by maintaining the machinery in specific areas designed for this purpose hence might not be a serious impact as a result of the construction.

7.3 Operation Phase Impacts

7.3.1 Ensuring efficient solid waste management

The proponent will be responsible for efficient management of solid waste generated by the project during its operation. In this regard, the proponent will provide waste handling facilities such as waste bins and skips for temporarily holding domestic waste generated at the site. In addition, the proponent will ensure that they are disposed of regularly and appropriately. It is recommended that the proponent puts in place measures to ensure that the workers of the apartment manage their waste efficiently through recycling, reuse and proper disposal procedures.

7.3.2 Ensure efficient energy consumption

The proponent shall plan and install an energy-efficient lighting system at the flats. This will contribute immensely to energy conservation during the operational phase of the project. In addition, pupil teachers and other workers of the apartment will be sensitised to ensure energy efficiency in their daily operations. To complement these measures, it will be important to monitor energy use during the operation phase.

7.3.3 Ensure efficient water use

The proponent will install water-conserving automatic taps and toilets. Moreover, any water leaks through damaged pipes and faulty taps will be fixed promptly by qualified staff. In addition, the tenants of the rooms will be sensitized to use water efficiently.

7.4 Decommissioning Phase Impacts

7.4.1 Efficient solid waste management

Solid waste resulting from demolition or dismantling works will be managed as described above.

7.4.2 Reduction of dust concentration

High levels of dust concentration resulting from demolition or dismantling works will be minimized as described above.

7.4.3 Minimization of noise and vibration

Significant impacts on the acoustic environment will be mitigated as already described above.

CHAPTER 8. ANALYSIS OF PROJECT ALTERNATIVES

This section analyses the project alternatives in terms of technology scale and waste management options.

8.1 No Project alternative

The No Project Alternative option in respect to the proposed project implies that the project achievements be reversed. This option is a suitable alternative from an extreme environmental perspective as it ensures returning the site to its previous natural condition. Under the No Project Alternative, the proponent's proposal would not receive the necessary approval from NEMA. The proposed project would not be constructed and there would be no demand for the Grand Premier apartments. This option will however, involve several losses both to the landowner and the community as a whole. The landowner will continue to pay rent on the plot while the property remains idle. The No Project Option is the least preferred from the socio-economic and partly environmental perspective due to the following factors:

i. The economic status of the Kenyans and the local people would remain unchanged.
ii. The local skills would remain under-utilized.
iii. No employment opportunities will be created for Kenyans who will work in the project area.
iv. Increased urban poverty and crime in Kenya.
v. Discouragement for investors to produce this level of affordable business enterprises.
vi. Development of infrastructural facilities (roads, electrical etc. will not be undertaken.

In addition the anticipated insignificant environmental impacts resulting from construction, and occupation of the flats, as proposed, would not occur. From the analysis above, it becomes apparent that the No Project alternative is no alternative to the local people, Kenyans, and the government of Kenya.

8.2 The Proposed Development Alternative

Under the proposed development alternative, the developers of the proposed project would be issued with an EIA License. In issuing the license, NEMA would approve the proponent's proposed development of the Grand Premier apartments, provided all environmental measures are complied with during the construction period and occupation phases. This alternative consists of the applicant's final proposal with the inclusion of the NEMA regulations and procedures as stipulated in the environmental impacts to the maximum extent practicable.

8.3 Analysis of Alternative Construction Materials and Technology

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 saves energy and water will be given first priority without compromising on cost or availability factors. The concrete pillars and walls will be made using locally sourced stones, cement, sand (washed and clean), metal bars and fittings that meet the Kenya Bureau of Standards requirements. Heavy use of timber during construction is discouraged because of destruction of forests. The exotic species would be preferred to indigenous species in the construction where need will arise.

8.4 Waste Water Management Alternatives

Two most suitable technologies are discussed below:-

Alternative one: Connection sewer system

Connection to a main sewer line will solve the waste water management issue at a very minimal cost and in an environmental efficient manner.

Alternative two: Use of septic tanks

This involves the construction of underground concrete-made tanks to store the sludge with soak pits.

Solid waste management alternatives

The proposed project will generate a lot of solid wastes. An integrated solid waste management system is recommendable. First, the proponent will give priority to Reduction at Source of the materials. Secondly, Recycling, Reuse and compositing of the waste will be the second alternative in priority. This will call for a source separation programme to be put in place. The recyclables will be sold to waste buyers within the surrounding areas. Finally, sanitary land-filling will be the last option for the proponent to consider.

CHAPTER 9. ENVIRONMENTAL MANAGEMENT PLAN

9.1 Significance of an EMP

Environmental Management Plan (EMP) for developing projects is usually to provide a logical framework within which identified negative environmental impacts can be mitigated and monitored. In addition the EMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures and monitoring can be done. The EMP is a vital output of an Environmental and Social Impact Assessment as it provides a checklist for project monitoring and evaluation. The EMP has addressed the identified potential negative impacts and mitigation measures of the Proposed Project based on the section of Environmental Impacts and Mitigation Measures of the Negative Impacts.

9.2 Construction Phase EMP

The necessary objectives, activities, mitigation measures, and allocation of costs and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the construction phase of the project.

Table 1: Environmental Management Plan during Construction Phase

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
1. Minimize extraction site impacts and ensure efficient use of raw materials in construction				
High Demand of Raw material	**1.** Source building materials from local suppliers who use environmentally friendly processes in their operations.	Proponent & Contractor	Throughout construction period	20,000
	2. Ensure accurate budgeting and estimation of actual construction material requirements to ensure that the least amount of material necessary is ordered.	Proponent & Contractor	Throughout construction period	50,000
	3. Ensure that damage or loss of materials at the construction site is kept minimal through proper storage.	Proponent & Contractor	Throughout construction period	50,000
	4. Use at least 5%-10% recycled, refurbished or salvaged materials to reduce the use of raw materials and divert material from landfills	Proponent & Contractor	Throughout construction period	100,000
2. Reduce storm-water, runoff and soil erosion				
Increased storm water, runoff and soil erosion	**1.** Surface runoff and roof water shall be harvested and stored in underground reservoir for reuse.	The Civil Engineer, Mechanical Engineer and Proponent	2 months	150,000

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
	2. A storm water management plan that minimizes impervious area infiltration by use of recharge areas and use of detention and/or retention with graduated outlet control structure will be designed.	The Civil Engineer, Mechanical Engineer and Proponent	1 month	
3. Minimize solid waste generation and ensure efficient solid waste management during construction				
Increased solid waste generation	**1.** Use of an integrated solid waste management system i.e. through a hierarchy of options: i. Source reduction ii. Recycling iii. Composting and reuse iv. Combustion v. Sanitary land filling.	Proponent & Contractor	Throughout construction period	30,500
	2. Through accurate estimation of the sizes and 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.	Proponent & Contractor	One-off	0
	3. Ensure that construction materials left over at the end of construction will be used in other projects rather than being disposed of.	Proponent & Contractor	One-off	10,000
	4. Ensure that damaged or wasted construction materials including cabinets, doors, plumbing and lighting fixtures, marbles and glass will be recovered for refurbishing and use in other projects	Proponent & Contractor	One-off	10,000

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
	5. Donate recyclable/reusable or residual materials to local community groups, institutions and individual local residents or home owners.	Proponent & Contractor	One-off	0
	6. Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time	Proponent & Contractor	Throughout construction period	20,000
	7.Provide facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements	Proponent & Contractor	One-off	30,000
	8. Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste.	Proponent & Contractor	Throughout construction period	0
4. Reduce dust emissions				
Dust emission	**1.** Ensure strict enforcement of on-site speed limit regulations	Proponent & Contractor	Throughout construction period	0
	2. Avoid excavation works in extremely dry weathers	Proponent & Contractor	Throughout construction period	50,000 per month
	3. Sprinkle water on graded access routes when necessary to reduce dust generation by construction vehicles	Proponent & Contractor	Throughout construction period	

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
	4. Personal Protective equipment to be worn	Proponent	Throughout construction period	
	5.construction materials on site to be covered to prevent to be blown off by wind	Contractor	Throughout construction period	
5. Minimization of exhaust emissions				
Exhaust emission	**1.** Vehicle idling time shall be minimised	Proponent & Contractor	Throughout construction period	0
	2. Alternatively fuelled construction equipment shall be used where feasible equipment shall be properly tuned and maintained	Proponent & Contractor	Throughout construction period	0
	3. Sensitise truck drivers to avoid unnecessary racing of vehicle engines at loading/offloading points and parking areas, and to switch off or keep vehicle engines at these points	Proponent & Contractor	Throughout construction period	0
6. Minimization of Noise and Vibration				
Noise and vibration	**1.** Sensitise construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used.	Proponent & Contractor	Throughout construction period	0
	2. Sensitise construction drivers to avoid gunning of vehicle engines or unnecessary hooting especially when passing through sensitive areas such as churches, residential areas and apartments	Proponent & Contractor	Throughout construction period	0

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
	3. Ensure that construction machinery are kept in good condition to reduce noise generation	Proponent & Contractor	Throughout construction period	20,500
	4. Ensure that all generators and heavy duty equipment are insulated or placed in enclosures to minimize ambient noise levels.	Proponent & Contractor	Throughout construction period	10,000
	5. The noisy construction works will entirely be planned to be during day time when most of the neighbours will be at work.	Proponent & all site foreman	Throughout construction period	10,000
7. Minimization of Energy Consumption				
Increased energy consumption	**1.**Ensure electrical equipment, appliances and lights are switched off when not being used	Proponent & Contractor	Throughout construction period	10,000
	2. Install energy saving fluorescent tubes at all lighting points instead of bulbs which consume higher electric energy	Proponent & Contractor	Throughout construction period	20,000
8. Minimize water consumption and ensure more efficient and safe water use				
High Water Demand	1. Promptly detect and repair of water pipe and tank leaks	Proponent	Continuous	10,000/month
	2. Ensure taps are not running when not in use	Proponent	Continuous	5,000/month
	3. Install a discharge meter at water outlets to determine and monitor total water usage	Proponent	One-off	10,000

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
	4.proper recycling of water from other uses for sprinkling dusty pavements	Contractor	Continuous	0
9. Minimize occupational health and safety risks				
	▪ Ensure the general safety and security at all times by providing day and night security guards and adequate lighting within and around the premises.	Proponent	Continuous	20,000
	▪ Construction of a perimeter wall around the project area	Contractor	On commencement	50,000
Personal Protective Gear (PPG)	• Suitable overalls, safety footwear, dust masks, gas masks, respirators, gloves, ear protection equipment etc should be made available and construction personnel must be trained to use the equipment	Proponent & Contractor	Once off	20,000
Health and safety impacts	• Implement all necessary measures to ensure health and safety of workers and the general public during operation of the housing project as stipulated in OSHA, 2007	Proponent	Continuous	-
First Aid	• Well stocked first aid box which is easily available and accessible should be provided within the premises	Proponent & Contractor	One-off	15,000
	• Provision must be made for persons to be trained in first aid, with a certificate issued by a recognised body.	Proponent & Contractor	One-off	10,000
Fire protection	• Fire fighting equipment such as fire extinguishers should be provided at strategic locations such as stores and construction areas.	Proponent & Contractor	One-off	20,000

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
	• Regular inspection and servicing of the equipment must be undertaken by a reputable service provider and records of such inspections maintained	Proponent & Contractor	Every 3 months	10,000
	• Fire escape routes and assembly point to be marked	Proponent & Contactor	Continuous	5, 000
	• Signs such as "NO SMOKING" must be prominently displayed within the premises, especially in parts where inflammable materials are stored	Proponent & Contractor	One-off	2,000

9.3 Operational Phase EMP

The necessary objectives, activities, mitigation measures, and allocation of costs and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the operational phase (Table 2)

Table 2: Environmental Management Plan for the operation phase

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
1. Minimization of solid waste generation and ensuring more efficient solid waste management				
Solid waste generation	1. Provide solid waste handling facilities such as waste bins and skips	Proponent/ Apartment Management	One-off	2,000
	2. Ensure that solid waste generated at the offices and classrooms is regularly disposed of appropriately at authorised dumping sites	Proponent/ Apartment Management	Continuous	3,000/ month
	3. Ensure that teachers and students of the apartment manage their waste efficiently through recycling, reuse and proper disposal procedures.	Proponent/ Apartment Management	Continuous	–
	3. Donate redundant but serviceable equipment to charities and institutions	Proponent/ Apartment Management	Continuous	0
2. Minimise risks of sewage release into environment				
Sewage disposal	1. Provide adequate and safe means of handling sewage generated at the classrooms and offices i.e. septic tanks	Proponent & Contractor	One-off	300,000
	2. Conduct regular inspections for drainage pipe blockages or damages and fix appropriately	Proponent & Contractor, Apartment Management	Continuous	500 per inspection
	3. Ensure regular monitoring of the sewage discharged from the project to ensure that the stipulated sewage/effluent discharge rules and standards are not violated	Proponent/ Apartment Management	Continuous	500/ parameter
3. Minimize energy consumption				
Energy Resource Utilisation	1. Switch off electrical equipment, appliances and lights when not being used	Proponent/ Apartment Management	Continuous	–
	2. Install occupation sensing lighting at various locations such as storage areas which are not in use all the time	Proponent/ Apartment Management	One-off	10-40 % higher than ordinary lighting

Expected Negative impact	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
	3. Install energy saving fluorescent tubes at all lighting points within the flats instead of bulbs which consume higher electric energy	Proponent/ Apartment Management	One-off	10-40 % higher than ordinary lighting
	4. Monitor energy use during the operation of the project and set targets for efficient energy use	Proponent/ Apartment Management	Continuous	2,000/month
	5. Sensitise occupants to use energy efficiently	Proponent/ Apartment Management	Continuous	500/month
4. Minimize water consumption and ensure more efficient and safe water use				
Water consumption	1. Promptly detect and repair water pipe and tank leaks	Proponent/ Apartment Management	Continuous	1,000/month
	2. Users to conserve water e.g. by avoiding unnecessary toilet flushing.	Proponent/ Apartment Management	Continuous	500/month
	3. Ensure taps are not running when not in use	Proponent/ Apartment Management	Continuous	500/month
	4. Install water conserving taps that turn-off automatically when water is not being used	Proponent/ Apartment Management	One-off	10-40 % higher than ordinary taps
	5. Install a discharge meter at water outlets to determine and monitor total water usage	Proponent/ Apartment Management	One-off	2,000
5. Minimization of health and safety impacts				
1. Implement all necessary measures to ensure health and safety of the workers and the general public during operation of the project as stipulated in OSHA, 2007		Proponent/ Apartment Management	Continuous	–
6. Ensure the general safety and security of the premises and surrounding areas				
1. Ensure the general safety and security at all times by providing day and night security guards and adequate lighting within and around the premises.		Proponent/ Apartment Management	Continuous	10,000/ month

9.4 Decommissioning Phase

In addition to the mitigation measures provided, it is necessary to outline some basic mitigation measures that will be required to be undertaken once all operational activities of the project have ceased. The necessary objectives, mitigation measures, allocation of responsibilities, time frames and costs pertaining to prevention, minimization and monitoring of all potential impacts associated with the decommissioning and closure phase of the project are outlined.

Table 3: Environmental management plan for the decommissioning phase

Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Ksh)
1. Demolition waste management			
1. All buildings, machinery, equipment, structures and partitions that will not be used for other purposes must be removed and recycled/reused as far as possible	Contractor, Proponent	One-off	
2. All foundations must be removed and recycled, reused or disposed of at a licensed disposal site			
3. Where recycling/reuse of the machinery, equipment, implements, structures, partitions and other demolition waste is not possible, the materials should be taken to a licensed waste disposal site	Contractor, Proponent	One-off	
4. Donate reusable demolition waste to charitable organizations, individuals and institutions	Contractor, Proponent	One-off	
2. Rehabilitation of project site			
1. Implement an appropriate re-vegetation programme to restore the site to its original status	Contractor, Proponent	One-off	
2. Consider use of indigenous plant species in re-vegetation	Contractor, Proponent	One-off	
3. Trees should be planted at suitable locations so as to interrupt slight lines (screen planting), between the adjacent residential area and the development.	Contractor, Proponent	Once-off	

CHAPTER 10. CONCLUSION AND RECOMMENDATION

This study report is a designated project in accordance with EMCA, 1999 and will be submitted to NEMA in conformity with the requirements of the Environmental Management and Coordination Act, 1999 and the Environmental (Impact Assessment and Audit) Regulations, 2003.

This EIA Report has provided an assessment of the potential environmental impacts associated with the planning and design, building and construction, operation, commissioning and decommissioning of the project, with the consideration of the potential cumulative impact from building & construction and related activities. Specific mitigation measures requirements for the project, as well as an environmental Management Plan have been developed in the study. The key environmental outcomes arising from the EIA study report and the principal findings are herein.

The proposed project will have numerous positive impacts including creation of employment; quality learning environment, improved infrastructure, Increase in National Housing Stock and Increase in revenue among others as has been outlined within the report. The negative environmental impacts that will result from establishment of the project which include increased population without commensurate services and facilities; increased pressure on infrastructure; air pollution; water pollution and generation wastes among others which however can be mitigated.

The proponent of the proposed project shall be committed to putting in place several measures to mitigate the negative environmental, safety, health and social impacts associated with the life cycle of the project. It is recommended that in addition to this commitment, the proponent shall focus on implementing the measures outlined in the EMP as well as adhering to all relevant national and international environmental, health and safety standards, policies and regulations that govern establishment and operation of such projects. It is also recommended that the positive impacts that emanate from such activities shall be maximised as much as possible. It is expected that these measures will go a long way in ensuring the best possible environmental compliance and performance standards.

The lead expert expects the mitigation measures to be strictly adhered to by all the parties involved. Furthermore, the lead expert considers that the counteractive measures as outlined in this document presented by the developer can preclude noise and atmospheric pollution from the development from having any severe effect on the neighbouring establishments. No major impact on the geological conservation value of the site is involved. Thus the lead expert concludes that despite the site-specific challenges, the development will not have any considerable impact on landforms, landscape and recommend it for licensing.

11. REFERENCES

Kenya gazette supplement Acts 2000, Environmental Management and Coordination Act Number 8 of 1999. Government printer, Nairobi

Kenya gazette supplement Acts Building Code 2000 by government printer, Nairobi

Kenya gazette supplement Acts Land Planning Act (Cap. 303) government printer, Nairobi

Kenya gazette supplement Acts Local Authority Act (Cap. 265) government printer, Nairobi

Kenya gazette supplement Acts Penal Code Act (Cap.63) government printer, Nairobi

Kenya gazette supplement Acts Physical Planning Act, 1999 government printer, Nairobi

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

Kenya gazette supplement Acts Water Act, 2002 government printer, Nairobi

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

12. APPENDICES

Appendix 12.1: Terms of Reference for the Assignment

1. Scope of EIA Study report

The ESIA experts conducted the Environmental and Social Impact Assessment (ESIA) Study report and prepared an EIA Study report as per the general EIA guidelines and administrative procedures issued by the Authority as provided for by the Environmental (Impact Assessment and Audit) Regulations 2003. The scope of the EIA study as established under these regulations included the following:-

2. Contents of the Study report:

A study report should include the following details:

- Name of the proponent, PIN number, address and contact person
- Title of the project
- Objectives and scope of the project
- Nature of the project;
- Location of the proposed project, including the physical area that may be affected by the project's activities;
- Types of activities that will be undertaken during the project construction, operation and decommissioning phases;
- Design(s) of the project;
- Materials to be used, products and by-products, including waste to be generated by the project and the method(s) of their disposal;
- Potential environmental impacts of the project;
- Mitigation measures to be taken during and after implementation of the project;
- An action plan for the prevention and management of foreseeable accidents during the project cycle;
- A plan to ensure the health and safety of the workers, and neighbouring communities;
- Economic and social benefits to the local community and the nation in general;
- Project budget;
- Views of the public about the project, indicating representativeness of the potentially affected people; and
- An environmental management plan (EMP) for the entire project cycle.

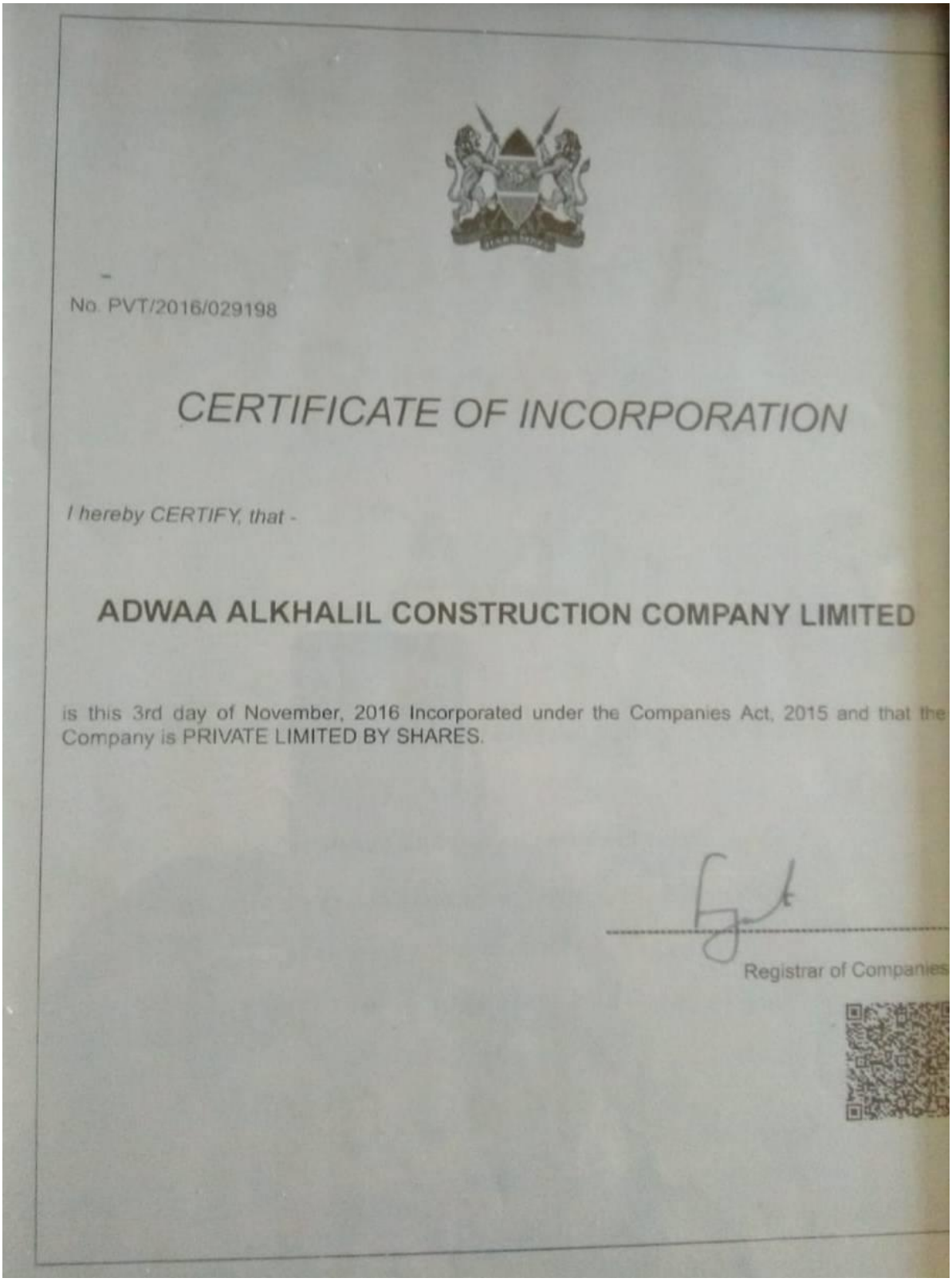
3. EIA Study Guiding Issues (Ref: Second schedule EIA/Audit Regulations, 2003):

1. Ecological considerations including the effect of project on the number, diversity, breeding habits of wild animals and vegetation,
2. Effect of project on:-
   - Soil fertility
   - Breeding populations of fish, game or wild animals
   - Natural regeneration of woodland and sustainable yield
   - Wetland resource degrading or wise use of wetlands
3. Ecosystem maintenance including –
   - Effect of proposal on food chains
   - Nutrient cycles
   - Aquifer recharge, water runoff rate
   - Real extent of habitats
   - Fragile ecosystems
4. Social considerations including –
   - Economic impacts
   - Social cohesion or disruption
   - Effect on human health
   - Immigration or emigration
   - Communication – roads opened up, closed, rerouted
   - Effects on culture and objects of cultural value
5. Effect on landscape including –
   - Views opened up or closed
   - Visual impacts (features, removal of vegetation e.t.c.)
   - Compatibility with surrounding area
   - Amenity opened up or closed
6. Land uses –
   - Effects of project on current land uses and land use potentials to the project area
   - Possibility of multiple use
   - Effects of project on surrounding land uses and land use potentials
7. Effects of project on water resources including –
   - Rivers
   - Springs
   - Lakes (natural and man-made)
   - Underground water and
   - Drainage patterns/drainage systems
8. Expected Outputs
   - The expected outputs from the EIA study were as follows:-
   - A description of the proposed site and the immediate surroundings with respect to
   - The proposed project,
   - Stakeholders' opinions and suggestions on the proposed development,
   - Clear impact projections that would be associated with the proposed project,
   - Appropriate mitigation measures and a monitoring plan on the significant impacts,
   - An environmental management plan.
   - Five copies and an electronic copy of the EIA report for submission to NEMA.
9. Responsibility of the Client
   - Pay for any testing that may be demanded by NEMA
   - Pay consultancy fees for the EIA study report
10. Appendices
   - All relevant documents)

Appendix 12.2: List of Stakeholders and Neighbours Interviewed

No	*Name*	*ID Number/ Plot Name*	*Position*	*Mobile Telephone*
1.	Joseph Kadira	1116496	Neighbour	0718050641
2.	Ahmed Abdi	27584550	Neighbour	0708103889
3.	Agnes Mwikali	30248334	Neighbour	0704856738
4.	William Kiremi	36456624	Neighbour	0743839402
5.	Flora Ntinyari	22211558	Neighbour	0717839586
6.	Jacintah Mary Shighadi	29905156	Neighbour	0728217405
7.	Mary W Karunditu	33028377	Neighbour	0717522725
8.	Agnes Makana	23945314	Neighbour	0723885960
9.	Kaberia Kamena	22462719	Neighbour	0725481481
10.	Yegon Nicholas	29652417	Neighbour	0705134376
11.	Francis Musyoka Mariwa / David Silver Stay Nairobi Hospital	22139563	Neighbour	0734360543
12.	Pamela Nanjala	30575557	Neighbour	0716255916
13.	Naftali Nyamanga	27646461	Neighbour	0780806845
14.	Peter Muyembe	6281478	Neighbour	0712658146
15.	Eshter Kamau	28773555	Neighbour	0728753738
16.	Terresia Gikuhi	27752379	Neighbour	0727031574
17.	Walter Omukaga	33324511	Neighbour	0700094031
18.	Samuel Opora	29988674	Neighbour	0741467221
19.	Zam Zom	Sky Rock	Neighbour	0722817603
20.	Brenda Orwiri	-	Neighbour	0722540636
21.	Philip	-	Neighbour	0725645880
22.	Rafiq (Tenent)	-	Neighbour	0712614133
23.	Mwajuma Juma	-	Neighbour	0722244037
24.	Michael Odera	-	Neighbour	0202527923
25.	Ali Mziwa	-	Neighbour	0722518008
26.	Irene Obonyo	-	Neighbour	0725646790

Appendix 12.3: Company Incorporation document



No. PVT/2016/029198

CERTIFICATE OF INCORPORATION

I hereby CERTIFY, that -

ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

is this 3rd day of November, 2016 Incorporated under the Companies Act, 2015 and that the Company is PRIVATE LIMITED BY SHARES.

Registrar of Companies

Appendix 12.4: KRA Personal Identification Number (PIN)

KENYA REVENUE AUTHORITY

www.kra.go.ke

PIN Certificate

Tel: +254 (020) 4999 999
Cell: +254(0711)099 999
Email: callcentre@kra.go.ke

Certificate Date : 15/12/2017

Personal Identification Number
P051680606Y

This is to certify that taxpayer shown herein has been registered with Kenya Revenue Authority

Taxpayer Information

Taxpayer Name	ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED
Email Address	ADWAALKHALIL2@GMAIL.COM

Registered Address

L.R. Number :	**Building :** KINDARUMA APARTMENTS
Street/Road : KINDARUMA ROAD	**City/Town :** Nairobi
County : Nairobi	**District :** Starehe District
Tax Area : CBD	**Station :** North of Nairobi
P. O. Box : 76444	**Postal Code :** 00508

Tax Obligation(s) Registration Details

Sr. No.	Tax Obligation(s)	Effective From Date	Effective Till Date	Status
1	Income Tax - Company	15/12/2017	N.A.	Active

The above PIN must appear on all your tax invoices and correspondences with Kenya Revenue Authority. Your accounting end month is December unless a change has been approved by the Commissioner-Domestic Taxes Department. The status of Tax Obligation(s) with 'Dormant' status will automatically change to 'Active' on date mentioned in "Effective Till Date" or any transaction done during the period. This certificate shall remain in force till further updated.

Disclaimer : This is a system generated certificate and does not require signature.

Appendix 12.5: NEMA Registered Lead Expert Registration Certificates

FORM 5 (r. 14(4))

Application Reference No: 272
Registration No: 0673
FOR OFFICIAL USE

THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT

CERTIFICATE OF REGISTRATION AS AN ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT EXPERT

This is to certify Ms. **MR. JOSEPH KATHIAI KURAUKA**
of **P. O. BOX 17586 - 00100, NAIROBI** (Address)
has been registered as an Environmental Impact Assessment Expert in accordance with the provisions of the Environment Management and Coordination Act and is authorized to practice in the capacity of a Lead Expert/Associate Expert/Firm of Experts (Type) **LEAD EXPERT**

Dated this **4TH** day **APRIL** of 20**07**

Signature

(Seal)

Director General
The National Environmental Management Authority

GPK (L)

Appendix 12.6: NEMA Registered Lead Expert Practicing License, Year 2018

FORM 7 (r.15(2))

nema

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/7786

Application Reference No: NEMA/EIA/EL/10829

M/S **Dr. Joseph Kathini Kuraaka**
(individual or firm) of address

P.O. Box 17586-00100, Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **0673**

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

Issued Date: **3/27/2018** Expiry Date: **12/31/2018**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2008 Certified

Appendix 12.7: NEMA Registered Associate Expert Registration Certificates

Appendix 12.8: NEMA Registered Associate Expert Practicing License, Year 2018

FORM 7 (r.15(2))

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

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

License No : NEMA/EIA/ERPL/7755
Application Reference No: NEMA/EIA/EL/10792

M/S **Leah Muthoni Mutonyi**
(individual or firm) of address

P.O Box 575, Nyeri

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Associate Expert**
registration number **8408**

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

Issued Date: **3/23/2018** Expiry Date: **12/31/2018**

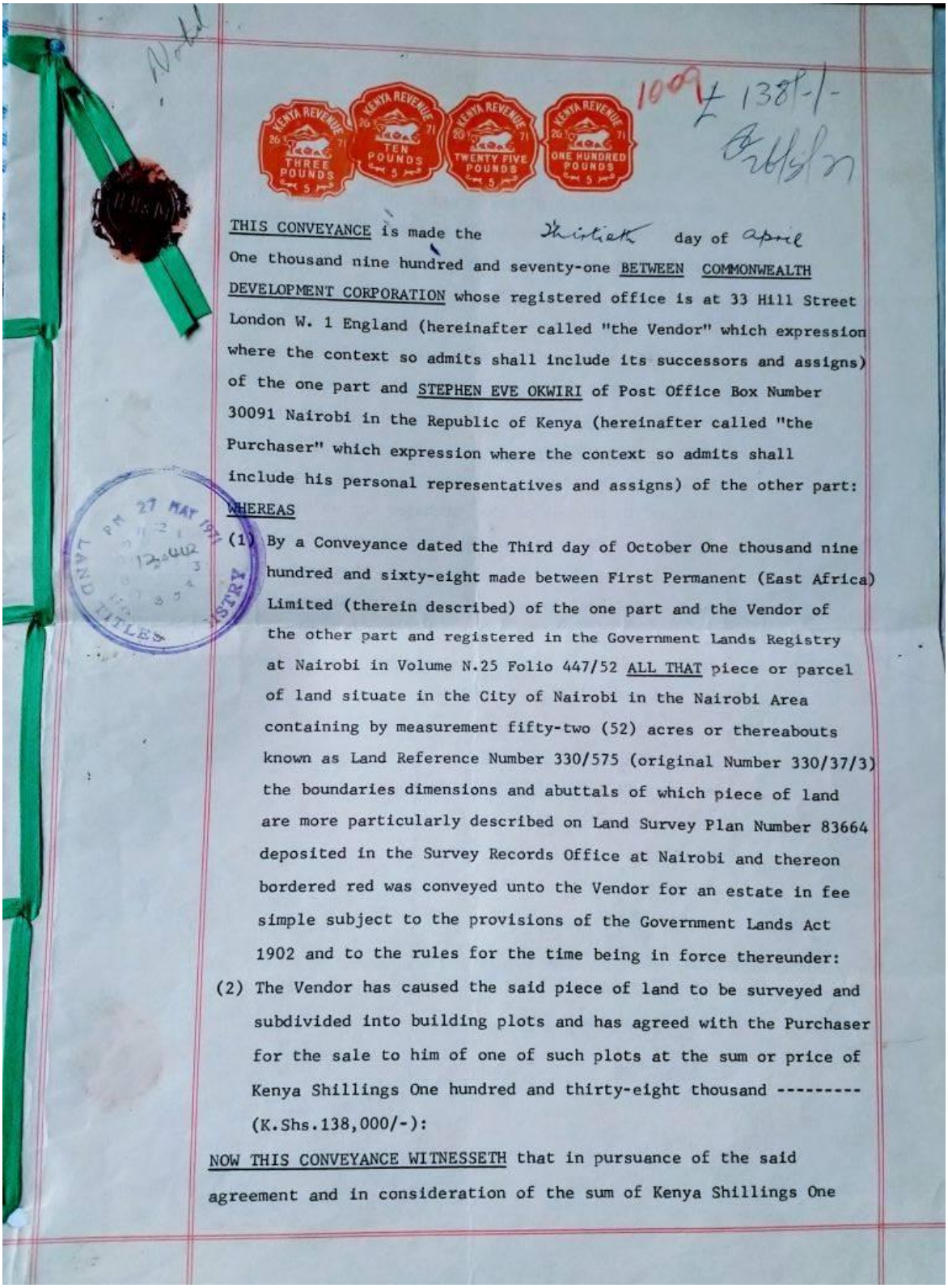
Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2008 Certified

Appendix 12.9: Copy of Title Deed



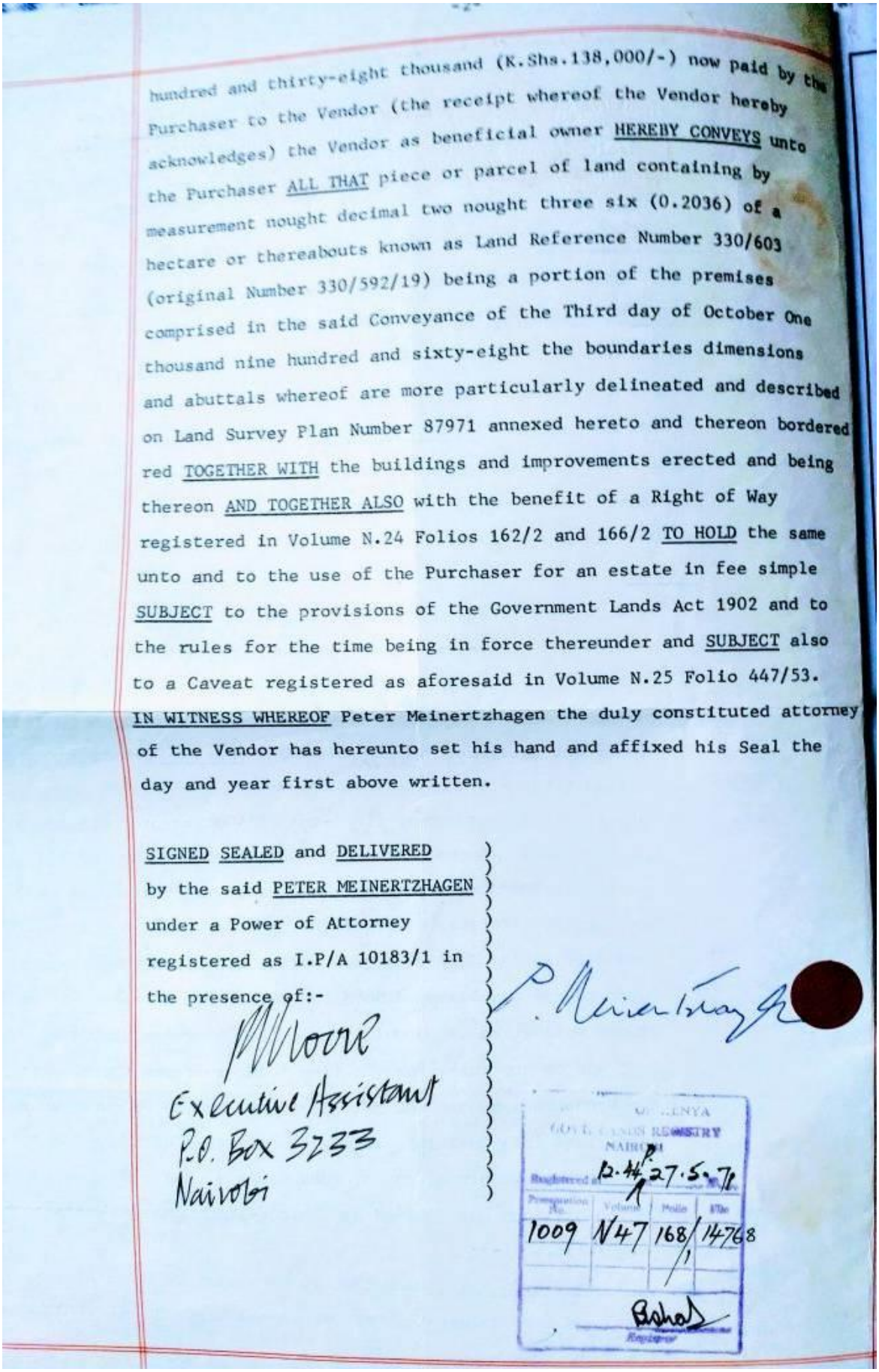
THIS CONVEYANCE is made the thirtieth day of April One thousand nine hundred and seventy-one BETWEEN COMMONWEALTH DEVELOPMENT CORPORATION whose registered office is at 33 Hill Street London W. 1 England (hereinafter called "the Vendor" which expression where the context so admits shall include its successors and assigns) of the one part and STEPHEN EVE OKWIRI of Post Office Box Number 30091 Nairobi in the Republic of Kenya (hereinafter called "the Purchaser" which expression where the context so admits shall include his personal representatives and assigns) of the other part:

WHEREAS

(1) By a Conveyance dated the Third day of October One thousand nine hundred and sixty-eight made between First Permanent (East Africa) Limited (therein described) of the one part and the Vendor of the other part and registered in the Government Lands Registry at Nairobi in Volume N.25 Folio 447/52 ALL THAT piece or parcel of land situate in the City of Nairobi in the Nairobi Area containing by measurement fifty-two (52) acres or thereabouts known as Land Reference Number 330/575 (original Number 330/37/3) the boundaries dimensions and abuttals of which piece of land are more particularly described on Land Survey Plan Number 83664 deposited in the Survey Records Office at Nairobi and thereon bordered red was conveyed unto the Vendor for an estate in fee simple subject to the provisions of the Government Lands Act 1902 and to the rules for the time being in force thereunder:

(2) The Vendor has caused the said piece of land to be surveyed and subdivided into building plots and has agreed with the Purchaser for the sale to him of one of such plots at the sum or price of Kenya Shillings One hundred and thirty-eight thousand --------- (K.Shs.138,000/-):

NOW THIS CONVEYANCE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Kenya Shillings One



hundred and thirty-eight thousand (K.Shs.138,000/-) now paid by the Purchaser to the Vendor (the receipt whereof the Vendor hereby acknowledges) the Vendor as beneficial owner HEREBY CONVEYS unto the Purchaser ALL THAT piece or parcel of land containing by measurement nought decimal two nought three six (0.2036) of a hectare or thereabouts known as Land Reference Number 330/603 (original Number 330/592/19) being a portion of the premises comprised in the said Conveyance of the Third day of October One thousand nine hundred and sixty-eight the boundaries dimensions and abuttals whereof are more particularly delineated and described on Land Survey Plan Number 87971 annexed hereto and thereon bordered red TOGETHER WITH the buildings and improvements erected and being thereon AND TOGETHER ALSO with the benefit of a Right of Way registered in Volume N.24 Folios 162/2 and 166/2 TO HOLD the same unto and to the use of the Purchaser for an estate in fee simple SUBJECT to the provisions of the Government Lands Act 1902 and to the rules for the time being in force thereunder and SUBJECT also to a Caveat registered as aforesaid in Volume N.25 Folio 447/53.

IN WITNESS WHEREOF Peter Meinertzhagen the duly constituted attorney of the Vendor has hereunto set his hand and affixed his Seal the day and year first above written.

SIGNED SEALED and DELIVERED by the said PETER MEINERTZHAGEN under a Power of Attorney registered as I.P/A 10183/1 in the presence of:-

Executive Assistant
P.O. Box 3233
Nairobi

REGISTRY
NAIROBI
27.5.71
1009 N47 168/1 14768

~~COLONY & PROTECTORATE OF~~ KENYA

DISTRICT OF NAIROBI AREA
Locality City of Nairobi
Meridional District South A 37 / G II d 1

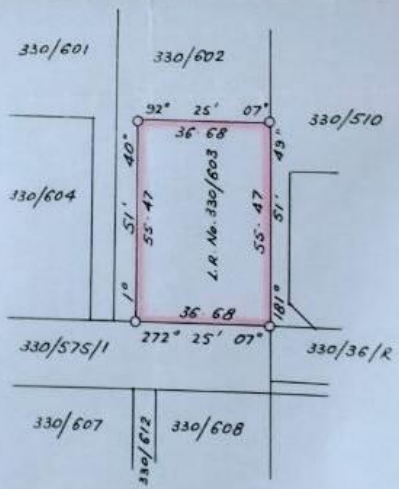
Land Reference No. 330/603
(Orig. No. ~~330/575/10~~ 330/592/9) See
Subdivision No. — (Orig. No. —
of Section No. —

Scale: 1 in. 1250 or ~~Feet to 1 Inch~~

Area = 0.2036 Ha (approx)

Distances shown are in Metres

Bearings ° ' "	Distances ~~Feet~~



J. Pickwell
Licensed Surveyor

S. MUNGE
for Director of Surveys
Nairobi 24TH AUGUST 1970

Traced by
Compared by

Please quote this PLAN No. 87971

Appendix 12.10: Stakeholders Comments on Proposed Apartment

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Joseph Kadira

Distance from the proposed project site: Senate

Tel: 0718050641 ID No.: 11164496 Email: —

1. Please indicate your views about the proposed project including general comments.
   Good project
2. List the possible positive impacts that could result from the proposed project
   — Employment opportunities
   — housing
3. List the possible negative impacts that could result from the proposed project
   — Noise
   — Dust
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☒	No		Noise	☒	Yes	☐	No
Waste water	☐	Yes	☒	No		Traffic	☒	Yes	☐	No
Dust	☒	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Reduce for Noise & Dust
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Business Signature: Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): AHMED ABDI

Distance from the proposed project site: IMMEDIATE

Tel: 0708103889 ID No.: 27584110 Email: ahmedaliabdy@gmail.com

1. Please indicate your views about the proposed project including general comments.
   Nothing much, they are doing development
2. List the possible positive impacts that could result from the proposed project
   Employment
3. List the possible negative impacts that could result from the proposed project
   Can't say
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☐	No		Noise	☐	Yes	☐	No
Waste water	☐	Yes	☐	No		Traffic	☐	Yes	☐	No
Dust	☒	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Dusting nets
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Civil Engineer Signature: [signature] Date: 22/10/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Agnes Mwikali

Distance from the proposed project site: 15m

Tel: 0704 856 738 ID No.: 36278234 Email: —

1. Please indicate your views about the proposed project including general comments.
   Good development
2. List the possible positive impacts that could result from the proposed project
   Employment
3. List the possible negative impacts that could result from the proposed project
   Dust
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☒	Yes	☐	No		Noise	☒	Yes	☐	No
Waste water	☒	Yes	☐	No		Traffic	☒	Yes	☐	No
Dust	☒	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Spill water on the dust
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: House Keeping Signature: Agnes Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): William Kiremi

Distance from the proposed project site: 10 metre.

Tel: ~~0790~~ 0743839402 ID No.: 36456624 Email: williamkiremimuriuki3@gmail.com

1. Please indicate your views about the proposed project including general comments.
   It's a good development.
2. List the possible positive impacts that could result from the proposed project
   - Offer apartments for better living & reduce rental on people.
3. List the possible negative impacts that could result from the proposed project
   - Traffic jam.
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☒	No		Noise	☒	Yes	☐	No
Waste water	☐	Yes	☒	No		Traffic	☒	Yes	☐	No
Dust	☐	Yes	☒	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   - Use silencer machines to reduce noise
   - Find new parking for the lorries.
6. To your opinion do you support the proposed project? Yes ☒ No ☐

   If No, please give details:

Occupation: Gate Keeper Signature: [signature] Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): William Kirimi

Distance from the proposed project site: 10 metre

Tel: ~~0790~~ 0743839402 ID No.: 36456624 Email: williamkirimimuriuki3@gmail.com

1. Please indicate your views about the proposed project including general comments.
   It's a good development.
2. List the possible positive impacts that could result from the proposed project
   - Offer apartments for better living & reduce rental on people
3. List the possible negative impacts that could result from the proposed project
   - Traffic jam.
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☒	No		Noise	☒	Yes	☐	No
Waste water	☐	Yes	☒	No		Traffic	☒	Yes	☐	No
Dust	☐	Yes	☒	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   - Use silencer machines to reduce noise
   - Find road parking for the lorries.
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Gate Keeper Signature: [signature] Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Flora ~~nya~~ ntinyari

Distance from the proposed project site: 10metres

Tel: 0717839586 ID No.: 22241558 Email: @Florantinyari.com

1. Please indicate your views about the proposed project including general comments.
   It's a development
2. List the possible positive impacts that could result from the proposed project
   No any benefits
3. List the possible negative impacts that could result from the proposed project
   Trafficking of the ways.
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☒	No	Noise	☒	Yes	☐	No
Waste water	☐	Yes	☒	No	Traffic	☒	Yes	☐	No
Dust	☐	Yes	☒	No	Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   - Silence the machines
   - Reduce traffic for trucks.
6. To your opinion do you support the proposed project? Yes ☒ No ☐

   If No, please give details:

Occupation: Househelp Signature: [signature] Date: 22/10/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): JACINTAH MARY SHIGHADI

Distance from the proposed project site: .....

Tel: 0728217405 ID No.: 29905156 Email: Jacimary50@gmail.com

1. Please indicate your views about the proposed project including general comments.
   It will help people to get and acquire houses.
2. List the possible positive impacts that could result from the proposed project
   It has created job opportunities
   It has decreased Idleness
3. List the possible negative impacts that could result from the proposed project
   Air their is noise
   Dust in air
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☑	No		Noise	☑	Yes	☐	No
Waste water	☐	Yes	☑	No		Traffic	☑	Yes	☐	No
Dust	☐	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   To use other Roads Not only one.
   T
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Security Signature: ..... Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Mary W. Karundi tu

Distance from the proposed project site: 5-10 m

Tel: 0717-522-725 ID No.: 330-28-377 Email: wiscape@gmail.com

1. Please indicate your views about the proposed project including general comments.
   Great. more homes for sale
2. List the possible positive impacts that could result from the proposed project
   People can own homes
3. List the possible negative impacts that could result from the proposed project
   Water / traffic
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☒	Yes	☐	No	Noise	☐	Yes	☒	No
Waste water	☒	Yes	☐	No	Traffic	☒	Yes	☐	No
Dust	☒	Yes	☐	No	Others (specify)	Congestion			

5. Please propose what can be done to overcome the negative impacts if any

6. To your opinion do you support the proposed project? Yes ☒ No ☐

   If No, please give details:

Occupation: Administrator Signature: [signature] Date: 21/11/18

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

Kilimani K.K

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Agnes Makena.

Distance from the proposed project site: 110m

Tel: 0722865960 ID No.: 23945314 Email info@tendercaredental.com

1. Please indicate your views about the proposed project including general comments.
   No idea:
2. List the possible positive impacts that could result from the proposed project
   - No ideas
3. List the possible negative impacts that could result from the proposed project
   - No idea
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☑	Yes	☐	No		Noise	☐	Yes	☑	No
Waste water	☑	Yes	☐	No		Traffic	☐	Yes	☑	No
Dust	☑	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   * Spill water.
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Caretaker Signature: .... Date: 22/11/2018.

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Kabera Kamero

Distance from the proposed project site: 20 meters

Tel: 0725481981 ID No.: 22462719 Email: Kkamero@gmail.com

1. Please indicate your views about the proposed project including general comments.
   They should excavate at night instead of one day instead of creating unecessary traffic
2. List the possible positive impacts that could result from the proposed project
   Increased housing
3. List the possible negative impacts that could result from the proposed project
   - Dust from the site on the road which is not cleaned up
   - Noise affecting residences
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☑	Yes	☐	No	Noise	☑	Yes	☐	No
Waste water	☑	Yes	☐	No	Traffic	☑	Yes	☐	No
Dust	☑	Yes	☐	No	Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Work at night and during weekends
6. To your opinion do you support the proposed project? Yes ☐ No ☑

   If No, please give details:
   Inconveniencing the public when they could work at off peak hours

Occupation: Businessperson Signature: KK Date: 27/11/18

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Kev Tegan Nicholas

Distance from the proposed project site: 20m

Tel: 0705134376 ID No.: 29652417 Email: —

1. Please indicate your views about the proposed project including general comments.
   No problem
2. List the possible positive impacts that could result from the proposed project
   — Profit to owner
   — Employment to other people
3. List the possible negative impacts that could result from the proposed project
   — No
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☐	No		Noise	☐	Yes	☑	No
Waste water	☐	Yes	☐	No		Traffic	☐	Yes	☑	No
Dust	☐	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   N/A
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Guard Signature: [signature] Date: 22/11/2018.

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Francis Muyoki Maina C/o David silver stay NAIROBI, HSPL

Distance from the proposed project site: 1.250

Tel: 0734360543 ID No.: 22137663 Email: francismuyoki1@gmail.com

1. Please indicate your views about the proposed project including general comments.
   Most problem
2. List the possible positive impacts that could result from the proposed project
   No positive impact.
3. List the possible negative impacts that could result from the proposed project
   Water level on the borehole
   Noise & cutting of trees / traffic
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☑	Yes	☐	No	Noise	☑	Yes	☐	No
Waste water	☑	Yes	☐	No	Traffic	☑	Yes	☐	No
Dust	☑	Yes	☐	No	Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Stop the project
6. To your opinion do you support the proposed project? Yes ☐ No ☑

   If No, please give details:

Occupation: Caretaker/Security Signature: [redacted] Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): PAMELA KANYALA

Distance from the proposed project site: 12m.

Tel: 0716.25.59.16 ID No.: 30575557 Email: glensamcalt@gmail.com

1. Please indicate your views about the proposed project including general comments.
   not bad
2. List the possible positive impacts that could result from the proposed project
   - Employment - Creates more competition
   - Business
3. List the possible negative impacts that could result from the proposed project
   - Congestion
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☑	Yes	☐	No		Noise	☑	Yes	☐	No
Waste water	☐	Yes	☑	No		Traffic	☑	Yes	☐	No
Dust	☐	Yes	☑	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   - More roads for traffic
   - Solid waste should employ Common Area cleaning Company.
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: MANAGER, SKYROCK APARTMENTS Signature: [signature] Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): NAFTALI NTAMANGA.

Distance from the proposed project site: 12m

Tel: [illegible] ID No.: 27646461. Email naftaliguto71@gmail.com

1. Please indicate your views about the proposed project including general comments.
   It's okey.
2. List the possible positive impacts that could result from the proposed project
   – It would lead to reduction of prices of Apartments.
   –
3. List the possible negative impacts that could result from the proposed project
   – congestion
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☑	Yes	☐	No		Noise	☑	Yes	☐	No
Waste water	☐	Yes	☑	No		Traffic	☑	Yes	☐	No
Dust	☑	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Proper disposal of solid waste by ensuring the sewerage system is properly done.
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Property managing agent [illegible] Signature: [signature] Date: 22/11/2018.

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Peter Muyembe.

Distance from the proposed project site: 150m

Tel: 0712658146 ID No.: 6281478 Email: petermuyembe@gmail.co[illegible]

1. Please indicate your views about the proposed project including general comments.
   - We would not like traffic jam, sewer clogging & water shortage & increase in population.
2. List the possible positive impacts that could result from the proposed project
   - none
3. List the possible negative impacts that could result from the proposed project
   - Traffic jam - water shortage
   - Sewer system jam
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☑	Yes	☐	No		Noise	☑	Yes	☐	No
Waste water	☑	Yes	☐	No		Traffic	☑	Yes	☐	No
Dust	☑	Yes	☐	No		Others (specify)	Security Issues			

5. Please propose what can be done to overcome the negative impacts if any
   - Build Town houses instead of Flats
   - Security issues should be reinforced & Reduction of Traffic.
   - Expansion of the sewer lines.
6. To your opinion do you support the proposed project? Yes ☐ No ☑

   If No, please give details:

Occupation: Thomson's security manager. Signature: [signature] Date: 22/11/2018.

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Terresia Gikuhi

Distance from the proposed project site: 25m

Tel: 0727031574 ID No.: 27752379 Email. terzahgikuhi@gmail.com

1. Please indicate your views about the proposed project including general comments.
   good project, More neighbours More security
2. List the possible positive impacts that could result from the proposed project
   More neighbours equals more interaction and growth in this area.
3. List the possible negative impacts that could result from the proposed project
   Security scares due to many major constructions, traffic will be a major problem. over population, Void blockage due to tall buildings.
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☑	No		Noise	☐	Yes	☑	No
Waste water	☑	Yes	☐	No		Traffic	☑	Yes	☐	No
Dust	☐	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Nothing that I can think of in terms of overpopulation and tall buildings however Security needs to be tightened.
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Sales rep Vally A towers Signature: Date: 22 Nov 2018.

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Walter Omukoso

Distance from the proposed project site: 1 Km

Tel: 0700994631 ID No.: 33324511 Email: —

1. Please indicate your views about the proposed project including general comments.
   No views
2. List the possible positive impacts that could result from the proposed project
   Offer Employment
3. List the possible negative impacts that could result from the proposed project
   Noise, Dust
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☒	Yes	☐	No		Noise	☑	Yes	☐	No
Waste water	☒	Yes	☐	No		Traffic	☒	Yes	☐	No
Dust	☑	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   Dust off with water
   No ideas about noise reduction.
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Guard Signature: [signature] Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Samuel Otoya

Distance from the proposed project site: 350m

Tel: 0741456221 ID No.: 29988674 Email: samuelotoya20@gmail.com

1. Please indicate your views about the proposed project including general comments.
   Good job
2. List the possible positive impacts that could result from the proposed project
   - Opportunities
3. List the possible negative impacts that could result from the proposed project
   - Traffic
   - Dust, Noise
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☒	No	Noise	☑	Yes	☐	No
Waste water	☐	Yes	☒	No	Traffic	☐	Yes	☑	No
Dust	☐	Yes	☑	No	Others (specify)	N/A			

5. Please propose what can be done to overcome the negative impacts if any
   - Less traffic
   - Reduce dust, noise

6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Caretaker Leonard Signature: Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

C/o Three Five Apartments

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

QUESTIONNAIRE FOR CONSULTATION AND PUBLIC PARTICIPATION

FOR THE PROPOSED GRAND PREMIER APARTMENTS DEVELOPMENT ON PLOT L.R. NO. 330/603, KILIMANI, NAIROBI COUNTY

PROPONENT NAME: ADWAA ALKHALIL DEVELOPMENT COMPANY LIMITED

This in compliance with the provisions of the Environmental Management and Coordination Act, Cap 387 of 2015 and Environmental Impact Assessment and Audit Regulations, 2003 and in pursuance of sustainability and harmony, we kindly request for your views, opinion and recommendations regarding the proposed flats development on Plot L.R. No 330/603. The project will comprise of proposed flats development.

Respondent's details:

Name of contact person (respondent): Esther Kamau.

Distance from the proposed project site: 50metres

Tel: ~~0~~ 0728753738 ID No.: 28773555 Email: esthrkamau124@gmail.com

1. Please indicate your views about the proposed project including general comments.
   Great
2. List the possible positive impacts that could result from the proposed project
   - Increased clients to our service
3. List the possible negative impacts that could result from the proposed project
   - Noise & Dust
4. Please tick below on expected negative impacts to existing environmental condition and other considerations such as pollution to soil, water, air, noise, dust, solid waste and health in relation to the proposed project.

Solid waste	☐	Yes	☐	No		Noise	☑	Yes	☐	No
Waste water	☐	Yes	☒	No		Traffic	☐	Yes	☒	No
Dust	☑	Yes	☐	No		Others (specify)				

5. Please propose what can be done to overcome the negative impacts if any
   - Spill water, sweep dust the dust
   - minimize the noise
6. To your opinion do you support the proposed project? Yes ☑ No ☐

   If No, please give details:

Occupation: Saloonist Signature: [signature] Date: 22/11/2018

Note: These details will **ONLY** be used for ESIA public participation of the proposed project.

DR. JOSEPH KURAUKA_ESIA LEAD EXPERT_0720851435

ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 001/18

Date of Interview 27/July/2018

Name of Enumerator Salim Mwinyi

Background Information of the respondent

Question 1.

i. Name of the Respondent Zam Zam

ii. Identification Card Number Sky Rock.

iii. Gender 01=Male [ ] 02=Female [ ]

iv. Phone number 0722 817603.

Question 2. Respodent residence distance from the proposed site 50.

i. House/plot number Sky Rock.

ii. Location/Direction Kilimani

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

No. objection

1

Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?

By reducing dust emission, ~~gas~~ and ~~to~~ noise pollution
Proper management of traffic flow

Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [✓]

2 = No [ ]

If No, make comments:

THANK YOU FOR YOUR TIME!

2

ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 002/18

Date of Interview 27/JULY/2018

Name of Enumerator SALIM MWAMOYI

Background Information of the respondent

Question 1.

i. Name of the Respondent BRENDA ORWIRI

ii. Identification Card Number 0722540636

iii. Gender 01=Male [ ] 02=Female [√]

iv. Phone number 0722540636.

Question 2. Respodent residence distance from the proposed site 150 mr

i. House/plot number 330/629.

ii. Location/Direction Kilimani

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

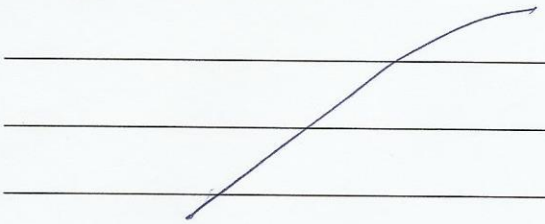
(1) Increase on Employment

(2) Beautyfication

(3) Modernization

1

Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?



Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [✓]

2 = No [ ]

If No, make comments:

THANK YOU FOR YOUR TIME!

2

ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 003/18

Date of Interview 27/July/2018

Name of Enumerator Sam Mwiti

Background Information of the respondent

Question 1.

i. Name of the Respondent Philip

ii. Identification Card Number ~

iii. Gender 01=Male [M] 02=Female [ ]

iv. Phone number 0725645880

Question 2. Respodent residence distance from the proposed site 100m.

i. House/plot number 330/558

ii. Location/Direction Kilimani

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

(1) Sound – noisy

(2) Traffic –

(3) Rent will go down.

(4) Employment.

Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?

- Silin Road
- work 8 – 5 p.m.

Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [✓]

2 = No [ ]

If No, make comments:

THANK YOU FOR YOUR TIME!

2

ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 004\18

Date of Interview 27\JULY\2018.

Name of Enumerator SALIM MUHSIN

Background Information of the respondent

Question 1.

i. Name of the Respondent RAFIQ (TENANT)

ii. Identification Card Number 0712 61 41 33

iii. Gender 01=Male [M] 02=Female [ ]

iv. Phone number 0712614133

Question 2. Respodent residence distance from the proposed site IMMEDIATE NEIGHBOUR.

i. House/plot number 330\602.

ii. Location/Direction ADJOINING ADJOINING — KILIMANI

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

(1) TRAFFIC JAM.

(2) ~~SECURITY~~ SAFETY

(3) POWER RE SHORTAGE.

(3) WATER —"—

(4) NOISE/DUST.

1

Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?

(1) WORKING ~~HOUR~~ HOURS 2 — 5 p.m.

(2) SIGN BOARD — SAFETY

(4) APPLY FOR BIOGAS TRANSFORMA.

(5) SINK BORE HOLE TO SUPPLEMENT WATER SUPPLY.

Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [✓]

2 = No [ ]

If No, make comments:

THANK YOU FOR YOUR TIME!

2

ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 005/18

Date of Interview 27-JULY-2018

Name of Enumerator SALIM MWINDI. ~~MWAJUMA JUMA.~~

Background Information of the respondent

Question 1.

i. Name of the Respondent MWAJUMA JUMA

ii. Identification Card Number 07222 44037.

iii. Gender 01=Male [ ] 02=Female [✓]

iv. Phone number _____

Question 2. Respodent residence distance from the proposed site 50 M

i. House/plot number COCO JAMBO. APTS/RANT.

ii. Location/Direction KILIMANI AGWING KODHEK.

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

- INCREASE BUSINESS - MORE CUSTOMER
- TO RENTS WILL GO DOWN.
- SECURITY WILL BE ~~HEDGED~~. INCREASED.
- CREAT EMPOYMENT DURING CONSTRUCTION AND AFTER.

1

Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?

- KPLC - KENYA POWER TO PUT UP POWER STATION
- NAIROBI WATER TO INCREASE WATER SUPPLY.
- EXPANSION OF ROAD
- COMMUNITY SECURITY.

Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [✓]

2 = No [ ]

If No, make comments:

THANK YOU FOR YOUR TIME!

2

ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 006/18

Date of Interview 27/July/2018.

Name of Enumerator SALIM MWANZI

Background Information of the respondent

Question 1.

i. Name of the Respondent MICHEAL OBERA

ii. Identification Card Number 0202527923.

iii. Gender 01=Male [✓] 02=Female [ ]

iv. Phone number 020-2527923.

Question 2. Respodent residence distance from the proposed site 150

i. House/plot number 330/630.

ii. Location/Direction Kilimani

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

(1) Employment.

(I) Rent – down.

1

Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?

(1) Expansion of the Road.

(2) More parking Space.

Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [✓]

2 = No [ ]

If No, make comments:

THANK YOU FOR YOUR TIME!

ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 007/18

Date of Interview _____

Name of Enumerator Salim Mwinji

Background Information of the respondent

Question 1.

i. Name of the Respondent Ali Mzinga.

ii. Identification Card Number 07225180 08.

iii. Gender 01=Male [✓] 02=Female [ ]

iv. Phone number 0722518008.

Question 2. Respodent residence distance from the proposed site 200m

i. House/plot number 330/ Valley Arcade.

ii. Location/Direction Kileleshwa

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

No Objection

Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?

N/A

Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [✓]

2 = No [ ]

If No, make comments:

N/A

THANK YOU FOR YOUR TIME!

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ENVIRONMENTAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED RESIDENTIAL APARTMENT CONSTRUCTION ON PLOT L.R N.O 330/603 WITHIN KILIMANI, NAIROBI

PROPONENT: ADWAA ALKHALIL CONSTRUCTION COMPANY LIMITED

The owner of the above stated parcel proposes to construct a residential apartment at the said site. It is a requirement under the Environmental Impact Assessment and Audit regulations, 2003 to seek views of the public when conducting Environmental Impact Assessment in respect of the proposed development so that they can give their views on environmental, social and economic implications of the project. As a neighbor/stakeholder, you are invited to give your comments on the proposed activity.

Questionnaire No. 008/18

Date of Interview 22/ July/ 2018.

Name of Enumerator Salim Mwanji

Background Information of the respondent

Question 1.

i. Name of the Respondent Irene Obonyo.

ii. Identification Card Number 0725 646790

iii. Gender 01=Male [ ] 02=Female [✓]

iv. Phone number 0725 646790

Question 2. Respodent residence distance from the proposed site 250 m.

i. House/plot number Tree Apartments

ii. Location/Direction Kilimani

Question 3. What are the possible environmental and social impacts of the proposed residential flat construction?

No Objection

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Question 4. What are the possible mitigation measures to be put in place to address the negative impacts?

Question 5. Do you support the proposed residential apartments by Adwaa Alkhalil Construction Company Limited?

1 = Yes [ ]

2 = No [ ]

If No, make comments:

THANK YOU FOR YOUR TIME!

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