ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR THE PROPOSED CONSTRUCTION OF

A STUDENT HOSTEL IN PARKLANDS,

NAIROBI COUNTY.

CERTIFICATION

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KHUZEIMA EZZI

BESTVIEW HOLDINGS LTD

PROPONENT

DISCLAIMER

1. *The Green Kenya Investment Corporation limited was instructed by Best View Holdings Ltd on 5th April 2022 to carry out an Environmental Impact Assessment (EIA) for the development of the proposed student hostel in Parklands.*

2. *A contract executed on 7th April 2022 and the terms of reference forms basis of engagement between parties but subject to guidelines issued by NEMA from time to time directly or through the regulators.*

3. *The information in this report is considered accurate as it includes project designs and information provided by the proponent Best View Holdings, site visits, legal framework, literature review information from printed and other sources, target community and stakeholders acquired during site field visits, public consultation and the same having been validated.*

4. *The report is strictly confidential to the proponent and any materials thereof should strictly be applied in accordance with the agreement between the contracted consultants and the proponent. No part of the report may be used in any other document or by third parties without the express authority of the consultant.*

5. *The consultant shall be part of the project monitoring team to ensure compliance with the conditions of the EIA license issued by NEMA. The terms of such engagement shall be set by the lead consultant but shall not be materially different from other site professionals of similar level.*

6. *The proponent shall retain the consultant to obtain effluent discharge license and to undertake the environmental audits for three years at such terms as shall be mutually agreed between the two parties.*

7. *The consultant shall apply for variation of contract to factor costs arising from delays occasioned by the proponent.*

8. *Any disputes arising from the execution of this report, the implementation of the Environmental Management Plan (EMP) and all subsequent audits and project decommissioning will to be addressed by a single Arbitrator jointly appointed, within thirty days, by the Consultant and the Proponent. The consultant may after lapse of thirty days appoint an arbitrator whose decision shall be bidding.*

9. *In absence of (8) here above, the decision of a single arbitrator appointed by the consultant shall make a final and binding decision.*

DOCUMENT CONTROL SHEET

Table 1: Document control sheet

S/NO.	CLIENT	BEST VIEW HOLDINGS LTD		SIGNATURE
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6	**CHECKED BY**	ERIC KINYURU MWIRIGI – ASSOCIATE EXPERT.		
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LIST OF ACRONYMS.

Table 2: List of Acronyms

S/No	ABBREVIATION	PARTICULARS
1	BTS	Base Transceiver Station
2	CAGR	Compound Annual Growth Rate
3	CBD	Central Business District
4	CCTV	Closed-Circuit Television
5	CPP	Consultation and Public Participation
6	CRONYMS	Meaning
7	DRSRS	Department of Resource Surveys and Remote sensing
8	EHS	Environmental Health and Safety
9	EIA	Environmental Impact Assessment
10	EMCA	Environmental Management and Co-ordination Act
11	EMP	Environmental Management Plan
12	ERC	Energy Regulatory Commission
13	GDP	Gross Domestic Product
14	GHG	Green House Gas
15	GKIC	Green Kenya Investment Corporation
16	IFC	International Fire Code
17	KEFRI	Kenya Forestry Research Institute
18	KFS	Kenya Forest Service
19	KNBS	Kenya National Bureau of Statistics
20	KPLC	Kenya Power and Lighting Company

21	L.R. No.	Land Registration Number
22	LED	Light Emitting Diodes
23	NCA	National Construction Authority
24	NCC	National Cadet Corps
25	NCG	Nairobi County Government
26	NEAP	National Environmental Action Plan
27	NEMA	National Environmental Management Authority
28	NET	National Environmental Tribunal
29	NWSC	Nairobi Water and Sewerage Company
30	PCC	Public Complaints Committee
31	PP	Public Participation
32	PPEs	Personal Protective Equipment
33	PPP	Public-Private Partnerships
34	SDG's	Sustainable Development Goals
35	SVP	Soil Vent Pipes
36	TOR	Terms of Reference
37	TVET	Technical and Vocational Education and Training
38	UN	United Nation
39	VAT	Value Added Tax

ANNEXURES

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S|NO	PARTICULARS	FOLIO
1	Lead expert practicing license	Annexure 1
2	Bestview holdings Ltd certificate of incorporation	Annexure 2
3	Kenya Revenue Authority (PIN Number)	Annexure 3
4	Title deed	Annexure 4
5	Deed Plan	Annexure 5
6	Architectural designs	Annexure 6
7	Bills of quantities	Annexure 7
8	Questionnaires	Annexure 8
9.	Screening checklist	Annexure 9
10	Scoping checklist	Annexure 10
11	Contract letter	Annexure 11

EXECUTIVE SUMMARY

1. The Best View Holdings Ltd herein referred as the proponent proposed to construct a student's hostel in Parklands on plot number L.R. No. 209/8904
2. The proponent contracted Green Kenya Investment Corporation to carry out Environmental Impact Assessment Study in accordance with Environment (Impact Assessment and Audit) Regulations.
3. In recent years the number of students' enrolment in institutions of higher learning has been increasing putting pressure on on-campus accommodation facilities hence prompting students to seek alternative accommodation in nearby private facilities.
4. The proposed development will comprise of 258 student housing units divided into two blocks that can be accessed independently of each other through their own elevators. The executive block will comprise of one bedroom and two-bedroom units while the studio block shall comprise of premium and standard studio units each with their own bathrooms.
5. In carrying out the study, various methodologies were used to gather data and obtain vital information of the project including the anticipated impacts, the proposed mitigation measures and the Environmental Monitoring Plan that will be implemented throughout the project.
6. The project site, L.R. No. 209/8904 is located at the end of Ashok Lane off 2nd Parklands Avenue Road in Parklands area, Nairobi County measuring approximately 0.1082 Ha (0.25acres).
7. Policy, legal and institutional frameworks that are relevant to the proposed project were identified and described by the consultant. The proponent is required to adhere to these frameworks to comply with environmental regulations.
8. The consultant obtained the baseline survey and public information to identify both the project positive and negative environmental impact within depth discussions to outline measures for the enhancement of positive impacts while mitigation measures for each negative impact.
9. Analyzing Alternatives to the project is an important step in the study of the proposed project with the intention of identifying the economic, technical, and environmental reasons for selecting the preferred option. The summary to this analysis of alternatives is explained in detail herein.

10. The consultant presented an EMP on the monitoring and management of the project. The EMP prudently addresses environmental, health and safety measures. In all phases of development of the proposed project the key objective should be to safeguard the environment.

11. The recommendations were formulated with the consultant recommending actions that the proponent needs to act to further safeguard the environment against negative impacts and to adhere to national regulations during the three main phases which included Annual environmental audits and installation of wind turbine to harness wind power for lighting.

12. The expert conclusion is that Considering the positive socioeconomic and environmental benefits to accrue because of the development, and the EIA having found no major impacts to arise from the development, it is our recommendation that the project be allowed to proceed on the understanding that the proponent will adhere to the recommended mitigation measures and will further implement the proposed EMP.

CHAPTER 1

BACKGROUND AND RATIONALE

Background

Best View holdings limited is a sister company to Fairdeal Properties founded in 2008 (14 years ago) with the vision of providing quality solutions across all segments of the Kenyan real estate market ranging from provision of lighting, furniture and related household items to development of commercial and residentials properties. In the last 10 years, Fairdeal Properties has established a strong presence in the fast-growing Kenyan real estate sector with a portfolio of more than 25 completed and ongoing projects both in Mombasa and Nairobi. Some of their major milestones include the following;

Table 3: Completed projects

S/NO	PROPERTY NAME	DESCRIPTION	LOCATION
1	Parklands square	Apartments	Parklands (Nairobi)
2	Johari apartments	Apartments	Kilimani (Nairobi)
3	Palm terraces	Apartments	Nyali (Mombasa)
4	Epic business Park	Commercial building	Nyali Mombasa)
5	Fairdeal business park	Warehouses	Embakasi (Nairobi)
6	Mashaal heights	Apartments	Kizingo (Mombasa)
7	Parklands square	Apartments	Parklanda (Nairobi)
8	Hydro apartments	Apartments	Nyari (Mombasa)
9	Junction suites	Apartments	Ngong road (Nairobi)
10	Fairdeal industrial park	warehouses	Kikambala (Mombasa)
11	Sandy shores apartments	Apartments	Kikambala (Mombasa)

Source: Best View Holdings limited

Upon realization of the growing demand in students housing, the company is seeking to construct a student's hostel in parklands area in Nairobi County to enable university students have affordable accommodation.

The study was commissioned to ensure compliance with international and domestic policies, legislation and inculcation of environmental best practices. The report is meant to identify and address negative impacts and other undesirable issues that may be related to the construction and operation of the project. In the long term, the project should promote a safe and secure environment and ensure adherence and compliance with the environmental and other policies and laws as well as best environmental practices.

1.2 Problem statement

Kenyan universities and colleges enrolment has experienced an exponential growth especially between the period of 2014 and 2021. According to the Kenya National Bureau of Statistics (KNBS) 2021 Economic Survey, the student population in universities and vocational centres stood at 997,904 in FY2020/21 from 664,000 in FY2014/15. This represented a five-year compound annual growth rate (CAGR) of 8.5%, further expanding the student housing deficit by approximately 60,000 units. The numbers are set to increase as the university/college age demographic continues to grow. According to the 2019 population and housing census data, the number of individuals between 18-24 years, who mostly represents university and vocational entry students, was 6.4 million, representing 13.4% of the total Kenyan population of 47.6 million. The overall number of technical and vocational education and training (TVET) institutions increased by 7.5% to 2,301 in 2020, from 2,140 in 2019. This increase, especially in satellite branches, is supported by government policy to

increase the number of higher learning institutions to accommodate the growing students population.

The situation has put a lot of pressure on on-campus accommodation facilities prompting students to seek alternative accommodation in nearby private facilities. There are on-going plans by universities to build hostels to accommodate over half a million students in the next five years supported by Public-Private Partnerships (PPP) to curb the ever-growing student housing crisis.

In light of these prevailing circumstances, the Proponent Best view holdings Ltd has proposed to develop a 258-bed capacity student housing scheme on plot LR No. 209/8904 located in Parklands area Nairobi County.

The proposed project aims to increase the number of available accommodation facilities for university and college students. Other advantages associated with the project include and not limited to; optimization of land use and its utility, creation of employment especially during construction phase, creation of a market for goods and services (construction inputs) among others.

Environmental concerns have now been integrated in the planning and implementation processes of any proposed projects; to mitigate conflicts with the environment at the vicinity. In addition, it is now mandatory for EIA to be undertaken on projects of such magnitude and nature to enhance sustainable environmental management as well as controlling and revitalizing the much-degraded environment.

1.3 Objectives of the EIA

The purpose of this EIA is to ensure adequate identification of potentially negative environmental impacts. Secondly to purpose workable mitigation measures and thirdly to formulate an environmental management plan (EMP) articulating envisaged impacts.

The main objectives of this EIA therefore include the following:

i. To identify and evaluate the significant environmental impacts of the project ii. To evaluate the impacts of the various alternatives on the project iii. To propose mitigation measures for the significant negative impacts of the project on the environment.

iv. To generate baseline data for monitoring and evaluating impacts, including mitigation measures during the project cycle.

v. To seek the views and concerns of all stakeholders regarding the proposed project.

vi. To highlight environment issues with a view to guiding policy makers, planners, stake holders and government agencies to make environmentally and economically sustainable decisions

vii. To incorporate Environmental Management Plans and monitoring mechanisms

1.4 Terms of Reference (TOR)

The following are the Terms of Reference for the proposed project as developed by the lead expert in conjunction with the project proponent;

i. Undertake the project screening and consult the regulator for licensing.

ii. Undertake project scoping and report on:

a). Assessment and description of location/site, objectives, scope, nature of the proposed project,

b). Analysis of the proposed project activities during the proposed project cycle; construction, operation, decommissioning phases,

c). Establish the suitability of the proposed project in the proposed location,

d). Review and establish all relevant baseline information.

e). Description of policy, legal and institutional framework which have a bearing on the proposed project.

f). Analysis of the designs, technology, and advice on relevant environmental issues.

g). Undertake Public Participation (PP).

h). Identify and analyse proposed project alternatives.

i). Identify and predict potential environmental impacts

j). Recommend mitigation measures for all the potential negative impacts identified,

k). Develop an Environmental Management and Monitoring Plan.

l). Make necessary observations, recommendations and conclusion.

1.5 Scope of the study

The EIA study will involve the following;

a) A description of the project Documentation of all baseline information
b) Socio-economic study to get the views of different stakeholders
c) Review of the policy, legal and institutional framework
d) Assessment of both the positive and negative impacts.
e) Developing mitigation measures for the negative impacts identified
f) Designing of an Environmental Management Plan for the project
g) Making recommendations
h) Proposing the process of decommissioning.

1.6 Methodology

The general steps followed during the assessment were as follows: -

I. Environmental Screening

A Screening Report is annexed to this report. This was carried to ascertain whether an EIA Study was necessary for the proposed project. The process was guided by the second schedule of EMCA. The expert established that this project stands to cause considerable impacts both positive and negative on the Environment. It was not prudent to abort the process at the screening level. The expert, therefore, recommended further identification of risks and the scoping level as well as recommendations on satisfactory mitigation.

II. Environmental Scoping

The scoping process was carried out in entirety to identify areas of environmental concern and the potential positive impacts that would accrue from the implementation of the proposed project. A site reconnaissance and visual survey to determine the baseline information of the project were categorized into Physical, Natural/ecological, and environmental aspects. The Impacts were also classified. This was accomplished as follows: -

a. Comparative study of the project location, land ownership and existing land uses in the neighbourhood.
b. Discussion with the project Design team.
c. Discussion with the Project Proponent(s), managers, project professionals and operators concerned.
d. Seeking Community/stakeholder Consultations.

e. Development and Proposal of mitigation measures to minimize any negative impacts, recommending feasible and cost-effective measures to prevent and reduce significant impacts.

f. Proposal of a monitoring plan to monitor the proposed mitigation measures during the project construction, operation, and decommissioning phase.

g. Preparation and submission of the report to NEMA

The data used for developing the EIA can be categorized into two, primary and secondary data, as tabulated below.

Table 4: Sources of data

S/No.	TYPE OF DATA	SOURCE OF DATA
1	Secondary data	Baker, B. H., J. G. Mitchell, and L. A. J. Williams. ―Stratigraphy, Geochronology and VolcanoTectonic Evolution of the Kedong–Naivasha–Kinangop Region, Gregory Rift Valley, Kenya. *Journal of the Geological Society* 145, no. 1 (1988): 107–16. Building Code 2000 Act EMCA,2015: Environmental Impact Assessment and Audit Regulations 2003. Kenya National Bureau of Statistics, 2021: Economic Survey Report Physical Planning Act, The Constitution of Kenya, 2010. The Occupational Safety and Health Act, 2007 Water Act,
2	Primary data	Formal/informal interviews, field observations, pictures, and questionnaires.

1.7 Justification of the project

1.7.1 Demand for Student accommodation

Currently, all universities in Kenya are experiencing an acute student housing shortage. The existing capacity is limited and new developments have ultimately not kept pace with the growth in enrolment. According to the Ministry of Education, available student housing in Kenya stands at 300,000 against a university enrolment of 520,900 as at 2018, excluding technical colleges. Kenya National Bureau of statistics 2019 Economic Survey pointed out that student accommodation stood at 796,000 units in 2017/18 and was expected to grow by 15.5 per cent to 919,400 in the 2018/19 academic year. The numbers are set to increase as the university/college age demographic continues to grow. According to the 2019 census data, the number of 18–24-year individuals, which represents college-going population, came in at 6.4 million, representing 13.4 per cent of the total Kenyan population of 47.6 million. The student accommodation stood at 796,000 units in 2017/18 and was expected to grow by 15.5 per cent to 919,400 in the 2018/19 academic year.

Nairobi CBD region where the proposed project is set to be constructed has seven university campuses excluding tertiary colleges which have as well witnessed a tremendous increase in student population. These campuses include University of Nairobi (Main Campus), University of Nairobi (Chiromo), KEMU CBD Campus, African Nazarene CBD Campus, Mount Kenya University, St. Paul‘s CBD Campus and KCA CBD Campus. The proposed development therefore comes as a timely venture to cater for the existing accommodation deficit.

1.7.2 Adjacent Land use analysis

Currently there are developments adjacent to the site. The common land uses are malls, hostels, church, maisonettes/bungalows and learning institutions. Particular reference

is *Excel Global College, Bayinah Academy, Mp shah hospital and Citam Parklands church*. At a radius of five (5) Kilometers, there are shops, religious facilities and other community facilities which will be adequate to serve the incoming development. More details can be seen from the map below.

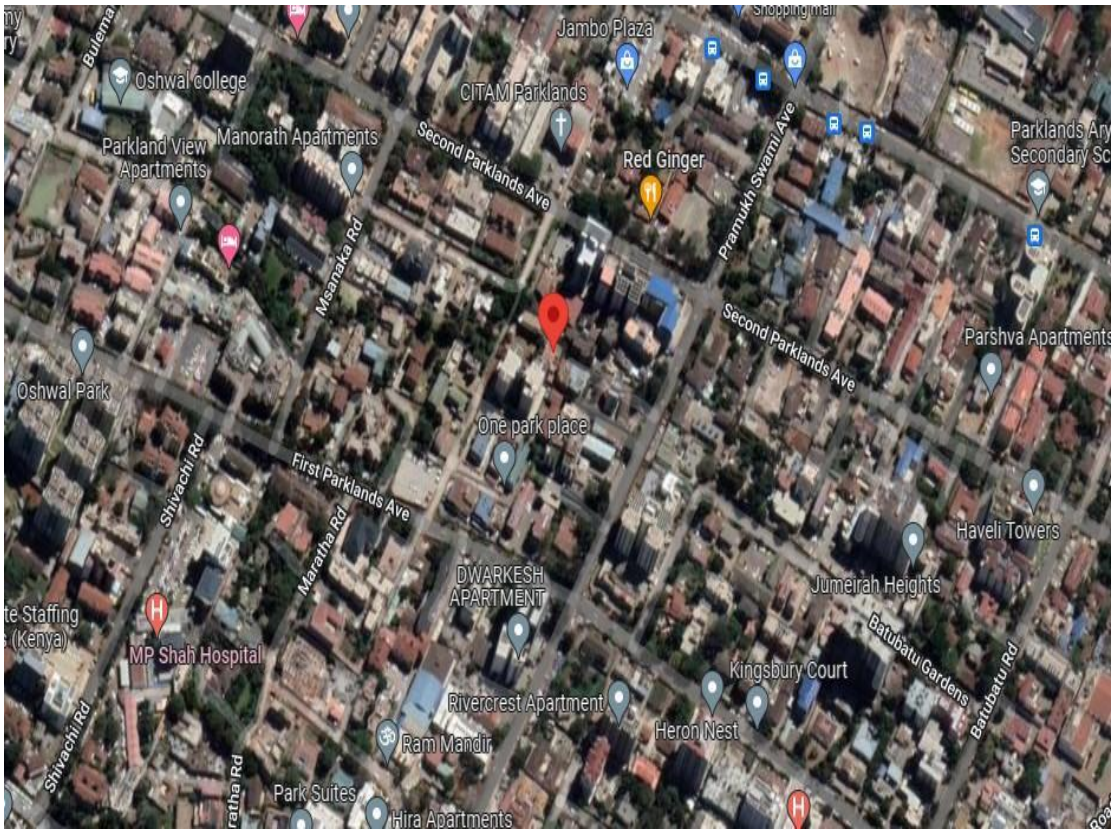

Plate 1:Project location

1.7.3 Economic Benefits

The proposed development will have various economic benefits. The project will provide employment opportunities during the three main phases and reduce poverty.

The Nairobi County government will raise extra revenue from both the enhanced Land Rates and approval fees. The National government will also get more revenue in the form of taxes and charges.

1.7.4 Neighbourhood Development Trend

The site under consideration falls in an area that is fast urbanizing. There are a high number of ongoing constructions which are predominantly mixed developments. The main development within the area includes Commercial premises, educational & residential apartments. The proposed development will therefore be in conformity with this trend which will ensure better utilization of the land giving it higher value.

Plate 2:Neighbourhood development trend

Plate 3: Neighbourhood development trend

Plate 4:Neighbourhood development trend

CHAPTER 2

PROJECT DESCRIPTION

2.1 Nature of the Project

The proponent, Best View holdings ltd, is proposing to construct a student hostel on plot L.R No 209/8904 in Parklands area, Nairobi County. The proposed development will comprise of 258 bed capacity Housing units and associated ancillary. The development will aim at providing habitable student housing infrastructure and/or increase the utility of the Land in the area.

Plate 5: Site
Source; site visit 11/4/2022

2.2 Project Location and Size

The property, L.R. No. 209/8904 is located at the end of Ashok Lane off 2nd Parklands Avenue Road in Parklands area, Nairobi County measuring approximately 0.1082 Ha (0.25acres). It lies within coordinates, 1°15'41.9"S 36°48'56.5"E. The site borders the Sri Murugan Koil to the west and one park place to the East. The site currently has one old maisonette that has been abandoned and not in use. The maisonette will be demolished to pave way for the new development. The area is well served with utilities such as electricity, water and access road as presented in figure below.

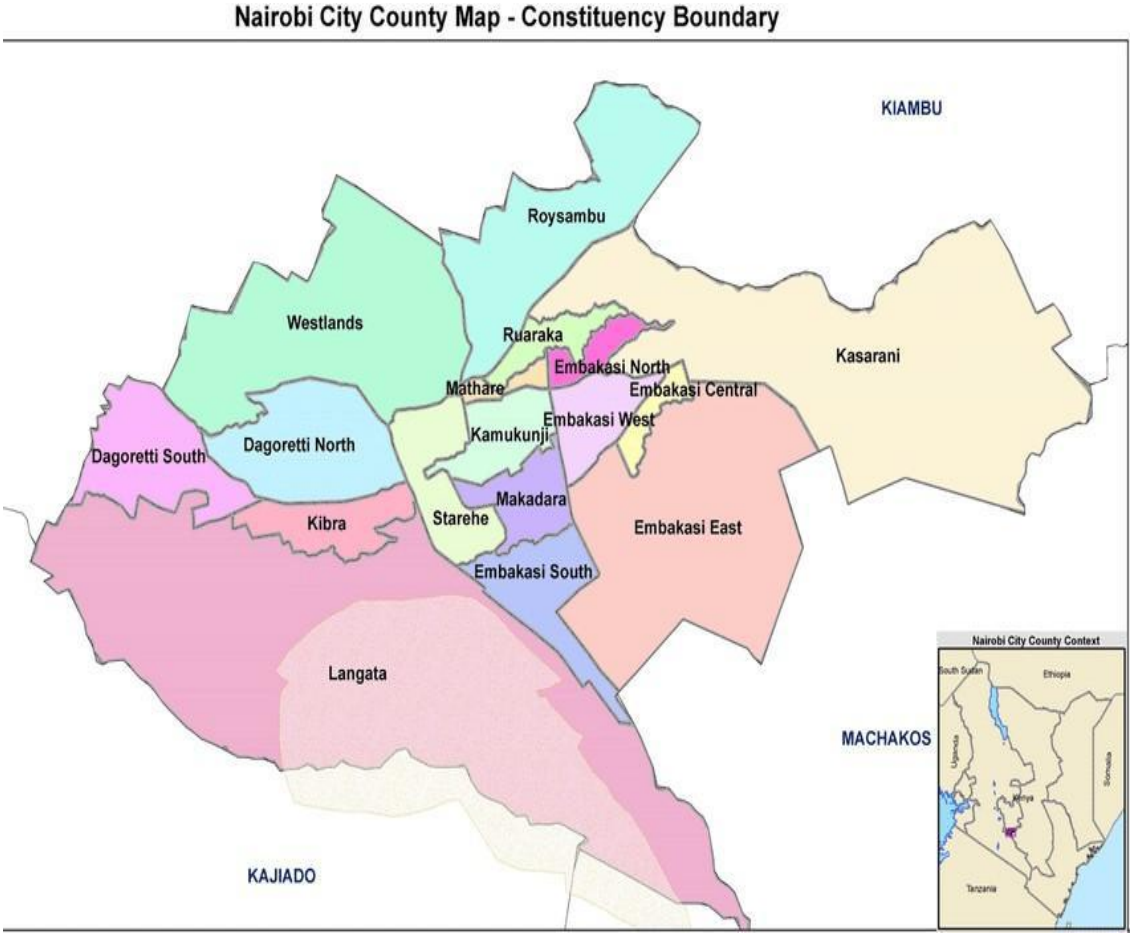

Plate 6:Nairobi County Map

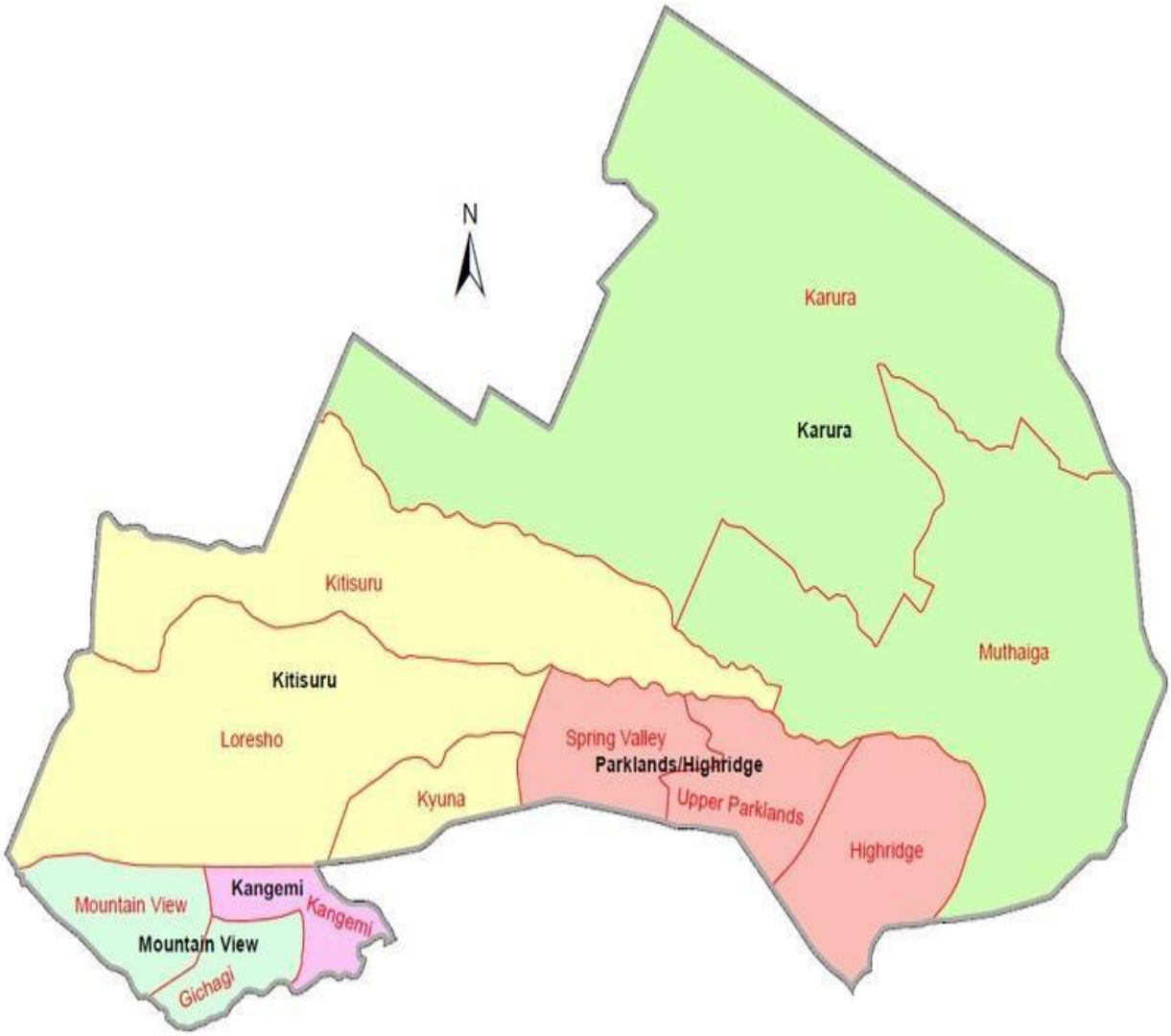

Plate 7:Westlands Constituency map

2.4 Land Tenure, Use, Ownership and Management

The parcel of land on which the subject development is proposed is held on Leasehold interest for 99 years from 1st of September 1977. The certificate of Title is drawn under The Registration of Titles Act (Chapter 281) as L.R. No. 209/8904 and the current registered proprietor is Best View Holdings Limited (See *attached copy of the ownership document).*

2.5 Project Description

The project is divided into two blocks that can be accessed independent of each other through elevators.

(i) Executive block which comprises of one bedroom and two-bedroom units (ii) Studios block compromising of premium and standard studio units.

In terms of amenities following are the tentative amenities for each block.

1. Executive block (12 typical floors+rooftop)

- Restaurant on the first floor
- Rooftop open recreational area with jacuzzi
- Laundry area on the rooftop

2. Studio block (10 typical floors+ rooftop)

- Cinema (1st floor)
- Study rooms (1st floor)
- Indoor games (1st floor)
- Kitchen and gathering area (on each floor)
- Laundry area (roof top)
- Gym (roof top)
- Open recreational area (roof top)

Table 5:Total number of units

S/N	FACILITY	NUMBER (BEDS)	NUMBER (UNITS)	TOTAL
1	Studios		72	72
2	Premium studios		116	116
3	One bedroom	47		47
4	Two bedrooms	23		23
Total		70	188	258

Source- proponent

More fine details of the proposal, specifications and features of the proposed project can be obtained from the drawings attached in the report.

2.5 Project Technology

The construction technology to be used in the project will employ light mechanization and high labour inputs. Locally available equipment, construction materials and labour will be used, which will be provided by a locally registered contractor. Light earth moving equipment will be used at the initial stages especially in the excavation, removal, and transportation of soils. Transportation of building materials and waste debris into the site will also involve sizeable trucks.

Concrete mixing and mobile elevator equipment will be installed during the construction. Other equipment will include dump trucks and an assortment of hand tools. As such dust and noise will arise from the operations of the equipment and are likely to be issues of concern. This requires the contractor to undertake the use appropriate technology that will reduce the impact of both noise and dust at the construction site.

The project will employ considerable number of workers at various stages of construction. This will include manual labourers, technicians, foremen and supervisors and a host of professional involved in various fields. Minimal staff will remain during the operation phase. A registered contractor and several sub-contractors will undertake the construction process. All the construction process will be under the close supervision of the project engineer, county building inspectors and the project architect.

2.6 Project Materials

2.6.1. Materials and finishes

The choice of construction material is important to bring out the character and aesthetic value. The floor will be made of cement screed and ceramic tiles, the walls

of natural dressed stone with internal plaster painted and ceramic tiles, ceiling of plaster painted and a roof of concrete slab

2.7. Description of the Project's Construction Activities

2.7.1. Pre-construction Investigations

The implementation of the project's design and construction phase will start with thorough investigation of the site's biological and physical resources to minimize any unforeseen adverse impacts during the project cycle. The maisonette currently on the plot will be demolished as described in section 2.9 below. Some of the usable material will be used for the current project for example in construction of a site office. Excavation will be carried out to prepare the site for construction of foundations, pavements, and drainage systems. This will involve a combination of earth-moving machinery such as bulldozers and wheel loaders as well as manual labour.

2.7.2. Sourcing and Transportation of Building Materials

Building materials will be transported to the project site from their extraction, manufacture, or storage sites using transport trucks. The building materials to be used in construction of the project will be sourced from various Counties. Greater emphasis will be laid on procurement of building materials from within the local area, which will make both economic and environmental sense as it will reduce negative impacts of transportation of the materials to the project site through reduced distance of travel by the materials transport vehicles.

2.7.3. Site Clearance

The site has one old maisonette currently not in use. All decommissioning procedures will be followed to demolish the structure. Some of the usable material will be used for the current project while the waste will be collected for disposal by a licensed operator. The vegetation cover including grass, and few trees on the site will be

cleared. The proponent shall ensure as many indigenous trees as possible are used for re-vegetation as well as conserving the trees along the plot boundary.

2.7.4. 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 bits. Materials such as cement, paints and glasses among others will be stored in temporary storage structures, which will be constructed within the project site for this purpose.

2.7.5 Excavation and Foundation Works

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

2.7.6 Masonry, Concrete Work and Related Activities

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

2.7.7 Structural Steel Works

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

2.7.8 Electrical Work

Electrical work during construction of the premises will include installation of electrical gadgets, devices 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. All the electrical works will be carried out by a licensed electrician to the satisfaction of the Kenya Power and Lighting Company (KPLC).

2.7.9 Mechanical works

The mechanical works shall be done by qualified technicians under the supervision of the Project Mechanical Engineer and shall follow the set standards. The works will include the following:

i. Plumbing and drainage

ii. Service ducts accessible from all floor levels

iii. Soil vent pipes (SVP) provided on doors and windows

iv. Storm drains pipes

v. Inspection chamber covers and framing

vi. Underground foul and waste drainpipes

2.7.10 Landscaping

To improve the aesthetic value or visual quality of the site once construction ceases, the proponent will carry out landscaping. This will include establishment of a theme garden and lush grass lawns where applicable and will involve replenishment of the topsoil. It is noteworthy that the proponent will use plant species that are available locally preferably indigenous ones for landscaping.

2.8. Description of the Project's Operational Activities

2.8.1 Residence

The proposed development will comprise of 258 units. Several student activities such as cooking, washing, leisure and recreational activities will thus accompany residence.

2.8.2 Solid Waste

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. The solid wastes from each block will be assembled in the garbage collection point ready for disposal by a NEMA licensed waste disposal company. Private waste disposal companies that are approved by NEMA and County Government will be responsible for solid waste disposal.

2.8.3. Wastewater and storm water Management

Sewage generated from each unit will be discharged into the existing sewer lines and then to the NCC mains sewer line available on the site/area. Storm water will be properly channelled to improve drainage within the development.

2.8.4. Cleaning

The proponent will be responsible for regular washing and cleaning of the pavements and communal areas. Individual tenants will be responsible for washing and cleaning their own premises/ residences. Cleaning operations will involve the use of substantial amounts of water, disinfectants, and detergents.

2.8.5. General Repairs and Maintenance

The houses and associated facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include repair of building walls and floors, repairs and maintenance of electrical gadgets and equipment, repairs

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

2.9. Description of the Project's Decommissioning Activities

Decommissioning is an important phase in the project cycle and comes last to wind up the operational activities of a particular project. It refers to the final disposal of the project and associated materials at the expiry of the project lifespan. If such a stage is reached, the proponent needs to remove all materials resulting from the demolition/ decommissioning from the site. The following should be undertaken to restore the environment:

i Remove all underground facilities from the site

ii The site should be well landscaped by flattening the mounds of soil

iii Planting indigenous trees and flowers

iv All the equipment should be removed from the site

v Fence and signpost unsafe areas until natural stabilization occurs

vi Backfill surface openings (if practical)

2.9.1. Dismantling of Equipment and Fixtures

All equipment including electrical installations, furniture partitions, pipework and sinks among others will be dismantled and removed from the site on decommissioning of the project. Priority will be given to reuse of the equipment in other projects. This will be achieved through resale of the equipment to other building owners or contractors or donation of this equipment to schools, churches, and charitable institutions.

2.9.2. 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 topsoil and re-vegetation using indigenous plant species.

2.10 Construction Products, By Products and Wastes

It is anticipated that the project will generate a variety of products, by-products and wastes during its construction and operational phases. The characteristics of the products, by-products and wastes are discussed in this section.

2.10.1 Products

The final product will be a 258-bed capacity Student hostel having other auxiliary facilities.

2.10.2 By-Products

The by-products will be disposed-off as follows:

i. **Soil:** The soil generated during excavation will be reused elsewhere in the project. Unusable soil will be transported for disposal at designated dumping sites.

ii. **Pieces of timber/wood:** large pieces of timber/wood generated during the construction phase will be transported back to the contractor ‘s yard for reuse in future while the small pieces of timber/wood will be disposed-off for use as fuel for cooking and heating.

iii. **Empty cans and drums:** These will be used to store water during construction. The damaged ones will be disposed-off to registered scrap metal and plastic waste dealers.

iv. **Excess sand, ballast, and stockpiles:** These can be used for future construction activities for example during future renovations. Upon completion of the project, these will be moved by the contractor to a suitable yard.

2.10.3 Waste

The waste generated during construction will include construction debris, excavated soil and rocks and sanitary waste. The other wastes that may likely to be generated during operation are solid waste such as paper, plastics, cans, organic waste, and sanitary waste. These wastes will be disposed by the proponent in accordance with the standards and documented procedures stipulated in the EMCA Waste Management Regulations.

2.11 Project Budget and Duration

The proposed project is estimated to cost approximately **Kes. 332,539,468** as indicated in the table below. The project implementation works is estimated to take 36 months after commencement *(attached is the BOQ summary)*

Table 6: Total project budget

S/No.	DESCRIPTION	AMOUNT	(%)
1	Pre-liminary costs	20,000,000	6
2	Construction cost	242,632,364	73
3	Professional fees (provisional)	36,394,854	11
4	EMP implementation	7,500,000	2.2
5	Contingency (provisional)	26,012,250	7.8
6	**TOTAL PROJECT COST**	**332,539,468**	**100.00**

Source: GKIC.

On account of the foregoing financial provisions, the expert has confidence that the EMP will be fully implemented.

CHAPTER 3

BASELINE INFORMATION

3.1. Administrative Location

The proposed project is located in Parklands area, Nairobi City County. The proposed residential apartments will be constructed along at the end of Ashok Lane off second parklands avenue road.

3.2 Physical Environment

3.2.1 Climate

Nairobi County is generally flat with an altitude of 1,795 metres above the sea level, this attribute explains the moderate climatic patterns that are experienced in the county. The coldest period is experienced in June and July while the hottest months are January and December. The mean temperatures range between 18 degrees Celsius and 20 degrees Celsius but this is projected to change because of climate change and global warming of the necessary measures is not put in place. The County also experience bimodal rainfall that falls in different times of the year. The average amount of rainfall is approximately 1,500mm and 2,200 mm per annum.

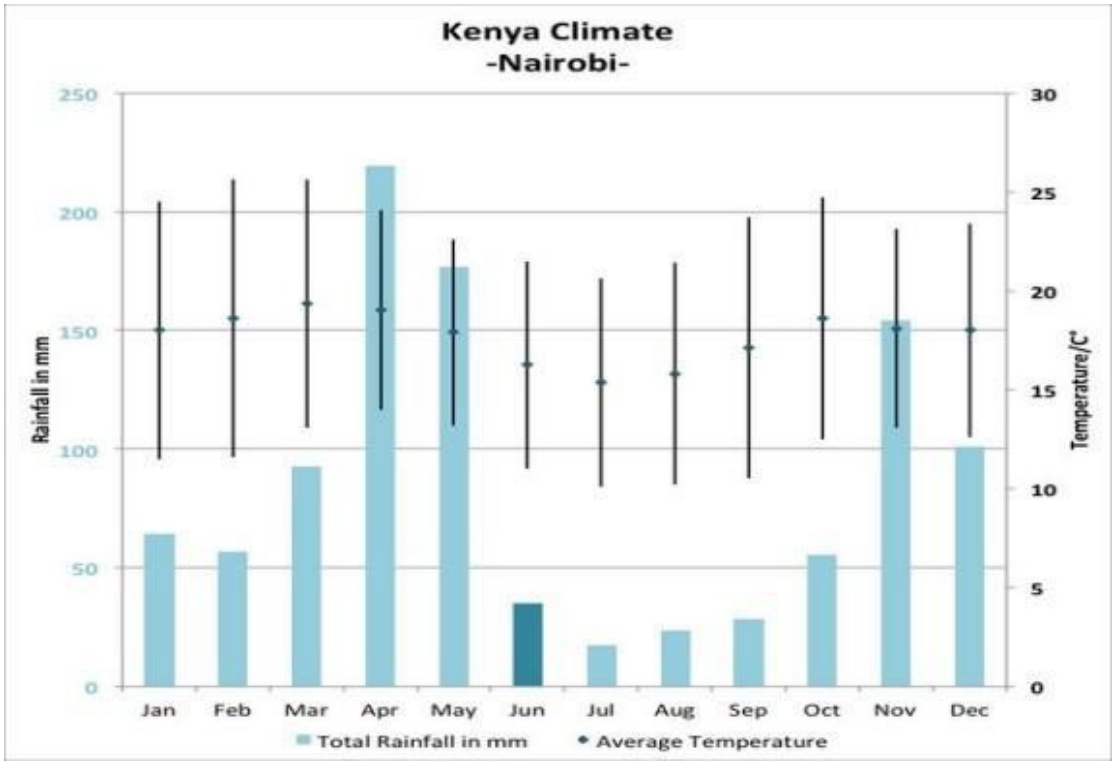

Figure 1:Nairobi Climate

3.2.2 Geology and Soils

The proposed site soils can be categorized under the Nairobi City soils which comprise of several spots of sensitive soils and variable/inclined ground profiles. The surface is covered by the following patches of soils: black cotton clay, red or brown clays, red silt soils, laterites, decomposed tuffs, alluvium, or swamp soils. The shallow groundwater is found to flow towards the Nairobi River and joins River Athi that discharges water to the Indian Ocean.

3.2.3 Hydrology

The main source of water is the Nairobi Water and Sewerage Company. The drainage in the area is majorly determined by the gradient of the general slope in the area.

3.3. Demography

According to the 2019 Population and Housing Census, there are about 45 million people in Kenya. Of these, nearly 4.3 million people reside in Nairobi City County. Thus, Nairobi supports almost 10 % of the national population. Nairobi City County is growing at the rate of over 4.1 % p.a. which is above the national average of approximately 2.3 % p.a. The population has been tremendously increasing on a yearly basis.

3.4 Infrastructure

Nairobi County is generally well served by infrastructure such as roads and other services such as electricity, schools, and health centres. Piped water supply is also connected to several parts of the county. Generally, the proposed project area is secure with easy access to public transportation networks.

3.4.1 Roads

The proposed project is within Parklands area which is about 5.1km from Nairobi CBD. Road transport is the main mode of access to the proposed site either by Private vehicle, Town service vehicles commonly Known as Matatu or Taxi services. The matatu leading to the project site can be found at Odeon Matatu No.9 or 6 stage. The proposed project can also be accessed through Nairobi Express way, a 27.1km road from Mlolongo passing through Jomo Kenyatta International Airport (JKIA) and Nairobi's CBD to the James Gichuru junction along Waiyaki way.

3.4.2 Water

Nairobi Water and Sewerage Co Ltd will supply the proposed project site as it does with other neighbouring plots. Borehole will also be sunk to supplement NWSC water supply

3.4.3 Communication

There is existing communication infrastructure in the area. For instance, there are existing BTSs in the area and many people own mobile phones. Internet and mobile providers are available and vary in terms of services such as Safaricom, Airtel, Telkom

Kenya and many more others.

3.4.4 Security

Security in the area is generally good. The proposed development will be secured by use of CCTVs, screening of individuals and cars, a perimeter fence and by hiring a reputable security firm. Moreover, the project location was not among areas mentioned as crime hotspots in the crime report of 2018 by National Police Service

3.4.5 Energy

Majority of the people in Parklands area use Charcoal, paraffin, and Liquefied petroleum gas for cooking. The energy mix is similar to a typical household in the country. The area is also served with electricity. There is an electricity line opposite to the proposed site.

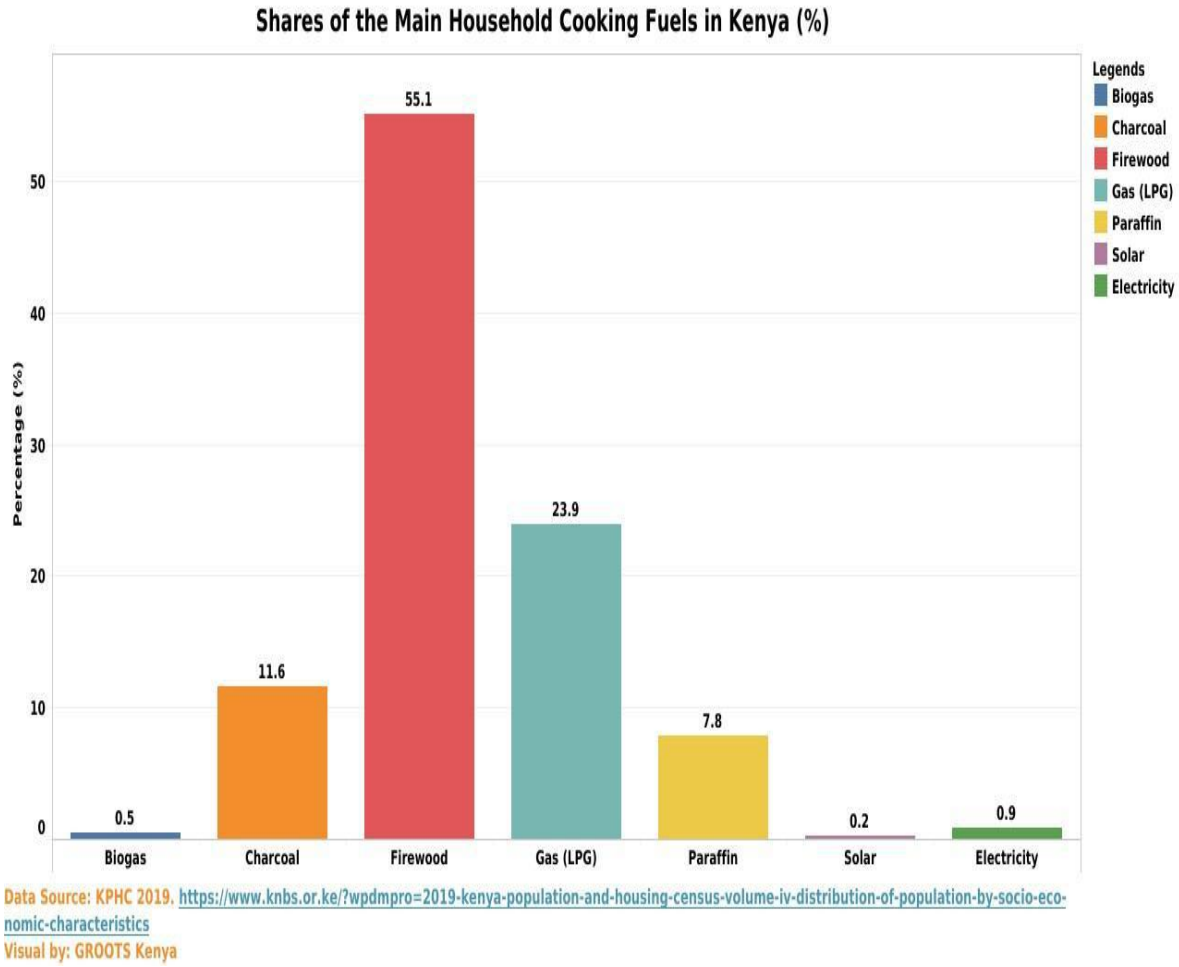

Figure 2:Household energy mix (%)

CHAPTER 4

POLICY, LEGAL AND INSTITUTION 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 economy is based. EIA is a useful tool for protection of the environment from the negative effects of development 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. 5 of 2015 and Section 3 of the Environmental (Impact Assessment and Audit) Regulations 2003

(Legal No. 101), requires an EIA 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 through sustainable use of natural resources without interfering with the environment.

4.2 Global policies

The development of this project has been bench-marked against UN and International guidelines.

4.2.1. The World Commission on Environment and Development

The commission commonly referred to as the Brundtland Commission is focused on the environmental aspects of development. Economic sustainable development is

development for which progress towards environmental and social sustainability occurs within available financial resources. Social sustainable development maintains the cohesion of a society and its ability to help its members work together to achieve common goals, while at the same time meeting individual needs for health and well-being, adequate nutrition, shelter, cultural expression, and political involvement.

4.2.2. The Rio Declaration on Environment and Development

The Rio Declaration on Environment and Development was adopted by more than 178 governments at the United Nation Conference on Environment and Development, known as the earth summit, held in Rio de Janeiro, Brazil from 3rd to 14th June 1992. Under Agenda 21, Principal No. 10 of the declaration underscores that environmental. Issues are best handled with participation of all concerned citizens at all relevant levels. At the national level, everyone shall have appropriate access to information concerning environment that is held by public authorities. States shall encourage and facilitate public participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy shall be provided. The foregoing discussion is relevant to the proposed development because Kenya legislation demands that public must be involved before any development project that is likely to have adverse impacts to the environment is initiated by a project proponent. The environment Act has further established public complaints committee (PCC) where the issues raised by the public regarding any proposed development can be addressed

4.2.3 Sustainable Development Goals (SDG's)

On September 25th 2015, countries adopted the United Nations Sustainable Development Goals (SDG's) of United Nations Conference on Sustainable Development, Rio+20 which took place in Rio de Janeiro, Brazil on 20-22 June 2012. The SDGs aimed at contributing towards ending poverty, protecting the planet, and

ensuring prosperity for all as part of a new sustainable development agenda. The SDG ‘s has very significant implications for investment needs and the role of the public sector is fundamental and pivotal. At the same time the contribution of the private sector is indispensable. The proponent has committed to the SDG ‘s through the proposed development in the following ways:

- **SDG 3 -Good Health & Well Being --**Targets achieved:

(i) Contribute to improved health and productivity through the provision of a safe and clean environment

- **SDG 4** – Quality Education. The project will enable achievement of this goal through provision of quality and affordable student residencies
- **SDG 6** – clean water and sanitation. The proponent will be required to provide clean drinking water for workers during construction and students during operational phase.
- **SDG 8 -Decent work and economic growth -**Targets achieved:

i. Employment creation that will contribute to reducing the proportion of youth not in employment.

ii. Providing an environment that emphasizes on protection of labour rights and promotes safe and secure working environments for all workers

- **SDG 10** – Reduced inequality. Equal opportunity for employment across gender must be given throughout the project cycle
- **SDG 11** – Sustainable cities. The development offers opportunities to achieve this goal. Through construction of multi storied buildings it is possible to reduce both the direct and indirect demand of built-up and bio productive areas correspondingly.

4.3 National Policies

There are several policies that are pertinent to this project, chief of which is the constitution of Kenya. A brief description of the policies is given below:

4.3.1 The Constitution of Kenya 2010

The Constitution of Kenya is the supreme law of the Republic of Kenya and binds all persons and all State organs at all levels of government. It provides the broad framework regulating all existence and development aspects of interest to the people of Kenya, and along which all national and sectorial legislative documents are drawn. In relation to environment, Article 42 of Chapter 4, the Bill of Rights, confers to every person the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative measures, particularly those contemplated in Article 69, and to have obligations relating to the environment fulfilled under Article 70. Chapter 5 of the new constitution provides the main pillars on which the 77 environmental statutes are hinged and covers "Land and Environment" and includes the articles 69 and 70. Part 1 of the Chapter dwells on land, outlining the principles informing land policy, land classification as well as land use and property. Part 2 of the Chapter directs focus on the environment and natural resources. It provides for a clear outline of the state‘s obligation with respect to the environment. The Chapter seeks to eliminate processes & activities likely to endanger the environment.

There are further provisions on enforcement of environmental rights as well as establishment of legislation relating to the environment in accordance to the guidelines provided in this Chapter. In conformity with the Constitution of Kenya 2010, every activity or project undertaken within the Republic of Kenya must be in tandem with the state‘s vision for the national environment as well as adherence to the right of every individual to a clean and healthy environment. The proposed development project is a development activity that will utilize sensitive components of

the physical and natural resources hence need for a clearly spelt out environmental management plan to curb probable adverse effects to the environment.

4.3.2 Kenya Vision 2030

Kenya Vision 2030 is the country ‘s development blueprint which aims at making Kenya a newly industrializing middle-income country providing high quality life for all its citizens by the year 2030. The vision has been developed through an all-inclusive stakeholder consultative process, involving Kenyans from all parts of the country. The vision is based on three pillars ‘namely, the Economic Pillar, the Social Pillar and the Political Pillar. The Kenya Vision 2030 economic pillar aims at providing prosperity of all Kenyans through an economic development programme aimed at achieving an average GDP growth rate of 10% per annum over the next 25 years from the year 2008. The social pillar seeks to build a just and cohesive society with social equity in a clean and secure environment. On the other hand, the political pillar aims at realizing a democratic political system founded on issue–based politics that respects the rule of law and protects the rights and freedoms of every individual in the Kenyan society.

The proposed project is in line with the economic and social pillars of Kenya vision 2030 and therefore its implementation will contribute to Kenya’s realization of the objectives set in the Kenya Vision 2030.

4.3.3 Public Health Policy

The prevailing public health policy calls upon the project proponent to ensure that buildings are adequately provided with utilities so that they are fit for human habitation. The proposed development has been designed by professional architects and engineers and as such will have all amenities/utilities that are essential for

safeguarding public health for all people using the facilities during the construction, operational and decommissioning phases of the project.

4.4 Institutional Framework

There are different institutions that deal with environmental issues in Kenya. Some of the key institutions include National Environmental Management Authority (NEMA), the Department of Resource Surveys and Remote sensing (DRSRS), the Water Department, The Kenya Forest Service (KFS), The Kenya Forestry Research Institute (KEFRI) among others. While implementing the project, both the proponent and the contractor will have to work in liaison with a number of these institutions when dealing with issues within the jurisdiction of the institutions.

4.4.1 National Environmental 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. The Authority shall:

i. Co-ordinate the various environmental management activities being undertaken by the lead agencies and promote the integration of environmental considerations into development policies, plan, programmes, and projects with a view to ensuring the proper management and rational utilization of the environmental resources on a sustainable yield basis for the improvement of the quality of human life in Kenya.

ii. Take stock of the natural resources in Kenya and their utilization and consultation, with the relevant lead agencies, land use guidelines.

iii. Examine land use patterns to determine their impact on the quality and quantity of the natural resources. iv. Carry out surveys, which will assist in the proper management and conservation of the environment.

v. Advise the government on legislative and other measures for the management of the environment or the implementation of relevant international conservation treaties and agreements in the field of environment.

vi. Advise the government on regional and international environmental convention treaties and agreements to which Kenya should be a party and follow up the implementation of such agreements where Kenya is a party.

vii. Undertake and co-ordinate research, investigation, and surveys in the field of environment and collect and disseminate information about the findings of such research, investigation or survey.

viii. Mobilize and monitor the use of financial and human resources for environmental management.

ix. Identify projects and programmes or types of projects and programmes, plans and policies for which environmental audit or environmental monitoring must be conducted under EMCA.

x. Initiate and evolve procedures and safeguards for the prevention of accidents, which may cause environmental degradation and evolve remedial measures where accidents occur.

xi. Monitor and assess activities, including activities being carried out by relevant lead agencies to ensure that the environment is not degraded by such activities, environmental management objectives are adhered to and adequate early warning on impeding environmental emergencies is given.

xii. Undertake, in co-operation with relevant lead agencies programmes intended to enhance environmental education and public awareness about the need for sound environmental management as well as for enlisting public support and encouraging the effort made by other entities in that regard.

xiii. Publish and disseminate manuals, codes or guidelines relating to environmental management and prevention or abatement of environmental degradation.

xiv. Render advice and technical support, where possible to entities engaged in natural resources management and environmental protection to enable them to carry out their responsibilities satisfactorily.

xv. Prepare and issue an annual report on the state of the environment in Kenya and in this regard may direct any lead agency to prepare and submit to it a report on the state of the sector of the environment under the administration of that lead agency and, xvi. Perform such other functions as government may assign to the Authority or as are incidental or conducive to the exercise by the authority of any or all the functions provided under EMCA.

However, NEMA mandate is designated to various committees. The contractor and the client will work in liaison with NEMA in getting various permits, licenses, approvals and generally in complying with the provisions of EMCA 2015 and any other subsidiary legislation under EMCA 2015.

4.4.2 National Environmental Action Plan (NEAP)

The NEAP was a deliberate policy effort to integrate environmental considerations into the country‘s economic and social development. The integration process was to be achieved through a multi-sectorial approach to develop a comprehensive framework to ensure that environmental management and conservation of natural

resources are an integral part of societal decision making. The NEAP has indicated how resources within sections of the country should be managed in order to ensure their sustainable utilization.

4.4.3 National Environmental Tribunal (NET)

This tribunal guides the handling of cases related to environmental offences in the Republic of Kenya. If disputes to the proposed project arise, they are supposed to be presented here for hearing and legal direction.

4.5 Legal Framework

Kenya has several statutes that govern environmental standards and quality. Most of these statutes are sector specific covering issues such as public health, planning, air quality, agriculture, water quality, and land use. This section seeks to bring to light statutes and legislation pertinent to the development of the proposed development herein referred to as the proposed project.

4.5.1 Environment Management and Coordination (Amendment) Act, 2015

The Environmental Management and Co-ordination (Amendment) Act, 2015 is an act of Parliament enacted by the Parliament of Kenya to amend the Environmental Management and Co-ordination Act. It commenced on 17th June 2015 No. 5 of 2015 and it provides a legal and institutional framework for the protection and conservation of the environment (in line with Article 42 of the constitution), as well as providing the necessary mechanism to monitor that, which include Environmental Impact Assessment, Environmental Auditing and Monitoring as prescribed by Article 69 of the Constitution. Section 58 (1) of the Act states ―Notwithstanding any approval, permit or license granted under this Act or any other law in force in Kenya, any person, being a proponent of a project, shall, before financing, commencing, proceeding with, carrying out, executing or conducting or causing to be financed,

commenced, proceeded with, carried out, executed or conducted by another person any undertaking specified in the Second Schedule to this Act, submit a project report to the Authority, in the prescribed form giving the prescribed information. The project report should be conducted or prepared by individual experts, or a firm of experts authorized by NEMA, which maintains a register of all experts authorized to carry out Environmental Impact Assessment studies and reports as Section 58(5) stipulates. It acknowledges the Consultation and Public Participation Process as a policy requirement for the purpose of achieving the fundamental principles of sustainable development. In fulfilment of this requirement the proponent engaged Green Kenya Investment Corporation, a registered firm of experts to carry out the EIA and conduct public participation.

EMCA 2015 has several subsidiary legislations that were enacted to ensure effective implementation of the Act. A few regulations that are pertinent to the proposed project are described below:

4.5.1.1 The Environmental Management and Coordination (Water Quality) Regulations

The Regulations provides for sustainable management of water resources including prevention of water pollution and protection of water sources (lakes, rivers, streams, springs, wells, and other water sources). It is an offence under Regulation No.4 (2), for any person to throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution. Regulation No. 11 further makes it an offence for any person to discharge or apply any poison, toxic, noxious, or obstructing matter, radioactive waste or other pollutants or permit the dumping or discharge of such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards for effluent discharge into the environment.

Regulation No. 14 (1) requires every licensed person generating and discharging effluent into the environment to carry out daily effluent discharge quality and quantity monitoring and to submit quarterly records of such monitoring to the Authority or its designated representatives.

The proponent will ensure that appropriate measures to prevent pollution of underground and surface water sources are implemented throughout the project cycle. Moreover, the area is served by the County wastewater and sewer line, there is provision for connection to the existing line for wastewater disposal

4.5.1.2 The Environmental Management and Co-ordination (Waste Management) Regulations

The regulations provide details on management (handling, storage, transportation, treatment, and disposal) of various waste streams including:

i Domestic waste

ii. Industrial waste,

iii. Hazardous and toxic waste

iv. Pesticides and toxic substances

v. Biomedical wastes

vi. Radioactive waste

Regulation 4 (1) makes it an offence for any person to dispose of any waste on a public highway, street, road, recreational area or in any public place except in a designated waste receptacle.

Regulation 5 (1) provides categories of cleaner production methods that should be adopted by waste generators to minimize the amount of waste generated.

The proponent will ensure that all waste is segregated before being transported to a designated waste treatment facility by a contracted NEMA licensed waste Transporter.

Regulation 6 requires waste generators to segregate waste by separating hazardous waste from non-hazardous waste for appropriate disposal. Regulation 14 (1) requires every trade or industrial undertaking to install at its premises anti-pollution equipment for the treatment of waste emanating from such trade or industrial undertaking. Regulation 17 (1) makes it an offence for any person to engage in any activity likely to generate any hazardous waste without a valid Environmental Impact Assessment license issued by NEMA.

During the construction phase of the project, the Proponent shall ensure that the main contractor implements the above-mentioned measures as necessary to enhance sound environmental management of waste.

4.5.1.3 The Environmental (Impact Assessment and Audit) Regulations

The EIA exercise under the Act is guided by the Environmental (Impact Assessment and Audit) Regulations, which was given under legal notice no. 101. The regulations stipulate the ways in which EIA and audits should be conducted. The project falls under the second schedule of EMCA, 2015 section 58 (1), (4) that require an EIA be conducted. As stipulated by the legal notice No. 101, 2003, PART V, Section 31 (3((a) (i) and (ii) it is required that an environmental assessment be undertaken to provide baseline information upon which subsequent environmental control audit shall be based. *It is in the wake of these regulations that the proponent commissioned Green Kenya Investment Corporation Firm of Experts to carry out an EIA exercise, write a report and submit it to NEMA with an aim of being awarded an EIA license.*

4.5.1.4 Environmental Management and Co-ordination (Noise and Excessive Vibrations Regulations

The regulations define noise as any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment. The regulations prohibit any person from making or causing to be made any loud, unreasonable, unnecessary, or unusual noise which annoys, disturbs, injures, or endangers the comfort, repose, health or safety of others and the environment. Article 13 2(d) of the regulations allows for construction work at night for public utility construction, construction of public works, projects exclusively relating to roads, bridges, airports, public schools, and sidewalks, provided noise generated is not caused within a residential building or across a residential real property boundary where such noise interferes with the comfort, repose, or safety of the members of the public. The second Schedule of the Regulations provides for the maximum permissible level of noise at construction sites.

The proponent shall take into concern the provisions of the local authority act to ensure that the development complies with the provisions of the Act.

4.5.1.5 The Environmental Management and Coordination (Air Quality) Regulations

The objective is to provide for prevention, control, and abatement of air pollution to ensure clean and healthy ambient air. It provides for the establishment of emission standards for various sources, including mobile sources, motor vehicles and stationary sources (industries) as outlined in the EMCA, 2015. It also covers any other air pollution source as may be determined by the Cabinet Secretary in consultation with the Authority. Emission limits for various areas and facilities have been set. The

regulations provide the procedure for designating controlled areas, and the objectives of air quality management plans for these areas. The following operations (provided they are not used for disposal of refuse), are exempt from these regulations:

a. Back-burning to control or suppress wildfires.
b. Firefighting rehearsals or drills conducted by the Fire Service Agencies
c. Traditional and cultural burning of savannah grasslands.
d. Burning for purposes of public health protection.

The Proponent shall observe policy and regulatory requirements and implement the mitigation measures proposed in this document to comply with the provisions of these Regulations on abatement of air pollution.

4.5.2 The Occupational Safety and Health Act

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

Workers and occupants' safety will be given priority during both construction and operation phases of the project. The proponent will appoint a reputable contractor who will be responsible for enforcing the requirements during construction and subsequent repairs and maintenance after project completion. He will avail fire extinguishers and means of escape, which shall be adequate and suitable in case of fire out breaks for the employees and occupants.

4.5.3 The Public Health. Act (Cap. 242)

Section 115 of the Act states that no person/institution shall cause nuisance or, conditions likely to be injurious or dangerous to human health. Section 116 require local Authorities (currently County governments) to take lawful, necessary, and reasonably practicable measures to maintain areas under their jurisdiction clean and sanitary to prevent occurrence of nuisance or condition liable for injurious or dangerous to human health. Such nuisance or conditions are defined under Section 118 waste pipes, sewers, drains refuse pits in such a state, situated, or constructed as in the opinion of the medical leer of health to be offensive or injurious to health. Any noxious matter or wastewater, discharged from any premises into a public street or into the gutter or side channel or watercourse, irrigation channel or bed not approved for discharge is also termed as a nuisance. Other nuisances are accumulation of materials or refuse which in opinion of the medical officer of health is likely to harbour rats or other vermin. The proponent will be required to abide by these provisions throughout the project cycle.

Part XII Section 136 states that all collections of water, sewage, rubbish, refuse and fluids which permits or facilitate the breeding or multiplication of pests shall be termed nuisances and are liable to be dealt with in the manner provided by this Act.

The proponent will be required to contract a licensed solid waste collector to collect all solid waste from the site to an approved dumping site. Sewage from the site will be discharged into the sewer line

4.5.4 Physical Planning and Land Use Planning Act.

An ACT of Parliament to make provision for the planning, use, regulation and development of land and for connected purposes.

Section 57 (1) A person shall not carry out development within a county without a development permission granted by the respective county executive committee member.

(2) A person who commences any development without obtaining development permission commits an offence and is liable on conviction to a fine not exceeding five hundred thousand shillings or to imprisonment for a term not exceeding two months or to both.

(3) A county executive committee member shall require a person who has commenced a development without obtaining development permission to restore the land on which the development is taking place to its original condition or as near to its original condition as is possible and that such restoration shall take place within ninety days.

Section 59 (1) A person applying for development permission shall ensure that any documents, plans and particulars that are provided to the respective county executive committee member while applying for development permission have been prepared by the relevant qualified, registered, and licensed professionals.

Section 65 A county executive committee member may impose conditions or impose a fine to be prescribed in regulations on an applicant for development permission for building works where that applicant fails to complete the building works within five years.

According to the Third Schedule Development Control,

Section 4. Planning authorities shall require applications for major developments to be subjected to environmental and social impact assessment. **Compliance with this legislation**

- The architectural plans of the proposed development have been submitted to the county government of Nairobi and approved
- The proponent will ensure that the land is utilized in an eco-friendly manner and is restored to its original condition once the project is decommissioned.
- Ensure the development does not in away have injurious impact on the environment and that a developmental footprint of less than 50% is maintained.
- The proponent has complied with this provision by appointing EIA/Audit experts to prepare and submit this EIA project report to NEMA.

4.5.5 County Government Act, 2012

The main purpose of the enactment of this Act was to give effect to Chapter Eleven of the Constitution; to provide for county governments' powers, functions, and responsibilities to deliver services and for connected purposes. Functions which were carried out by local governments were effectively transferred to the county governments. The Act gives county the responsibility of planning and co-coordinating all developments within their areas of jurisdiction. Part XI (sections 102-115) of the Act provides for planning principles and responsibilities of the county governments. The land use and building plans provided for in the Act are binding on all public entities and private citizens operating within the particular county. The proposed project is within the Nairobi County Government (NCG) and thus there will be need of working in liaison with the County Government. The plans for the proposed project

must be approved by the County Government and the County government may also issue directives and authorizations on various aspects such as, waste management and fire emergency preparedness among others.

The proponent will work in liaison with Nairobi County Government and in particular the department of Environment and Natural Resources.

4.5.6 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.

The Proponent will be required to ensure strict adherence to the Environmental Management Plan throughout the project cycle to mitigate against any possible negative impacts

4.5.7 The Registration of Titles Act (Chapter 281)

According to section 23 (1) of this Act, the certificate of title issued by the registrar to a purchaser of land upon a transfer or transmission by the proprietor thereof shall be taken by all courts as conclusive evidence that the person named therein as proprietor of the land is the absolute and indefeasible owner thereof, subject to the encumbrances, easements, restrictions and conditions contained therein or endorsed thereon, and the title of that proprietor shall not be subject to challenge, except on the ground of fraud or misrepresentation to which he is proved to be a party.

Copy of land ownership documents is attached to this EIA Project Report.

4.5.8 The National Land Commission Act, 2012 (No. 5 of 2012)

Section 5 of the Act outlines the Functions of the Commission, pursuant to Article 67(2) of the Constitution as follows 5(1):

a) To manage public land on behalf of the national and county governments.

b) To recommend a national land policy to the national government.

c) To advise the national government on a comprehensive programme for the registration of title in land throughout Kenya.

d) To conduct research related to land and the use of natural resources and make recommendations to appropriate authorities.

e) To initiate investigations, on its own initiative. or on a complaint, into present or historical land injustices, and recommend appropriate redress;

f) To encourage the application of traditional dispute resolution mechanisms in land conflicts.

g) To assess tax on land and premiums on immovable property in any area designated by law; and

h) To monitor and have oversight responsibilities over land use planning throughout the country

4.5.9 Water Act, 2016

This Act of Parliament provides for the management, conservation, use and control of water resources and for the acquisition and regulation of rights to use water; to provide for the regulation and management of water supply and sewerage services; to repeal the Water Act (Cap. 372) and certain provisions of the Local Government Act.

Section 25 (1) states that a permit shall be required for any of the following purposes:-

a) Any use of water from a water resource, except as provided by section 26;

b) The drainage of any swamp or other land.

c) The discharge of a pollutant into any water resource.

d) Any purpose, to be carried out in or in relation to a water resource, which is prescribed by rules made under this Act to be a purpose for which a permit is required.

4.5.10 Energy Act, 2020

The Energy Act establishes an Energy Regulatory Commission (ERC) mandated to perform all function that pertains to energy production, transmission, setting and enforcing of energy policies, public education and enforcing energy conservation strategies, prescribing the energy licensing process and issuing of licenses that pertain to energy sector in Kenya.

Section 30 of the Act provides the factors that shall be taken into consideration prior to issuance of license. It states the need and expression of an entity to conserve and protect the environment and natural resources in accordance with the EMCA 2015. Moreover, the Act gives provisions for the need to protect health and safety of users of energy by providing an enabling environment of operation that protects the health and safety of users of the service for which the license or permit is required and other members of the public affected by the undertaking.

4.5.11 National Construction Authority Act, 2011

The act is set to streamline, overhaul, and regulate the construction industry in Kenya for sustainable development. The NCA establishes the authority and confers on its power to register contractors within the construction industry. The act requires all the contractors, both foreign and local contractors to be registered with the authority. The

act also regulates the practices of foreign contractor by limiting their work to only tender work. The foreign contractors are licensed for only a specific period and once they satisfy, they are in Kenya for that specific time.

4.5.12 Building Code

This gives general guidelines for the construction of buildings and attendant safety measures such as installation of firefighting appliances, fire escapes etc. It equally recognizes local authorities as lead planning agencies and thus requires every developer to submit building plans to the relevant local authority for approval. The local authorities are in turn empowered to disapprove any plan submitted if it is not correctly drawn or does not provide sufficient information that complies with the relevant bylaws. Any developer who intends to erect a building, such as a residential block, must also give the concerned local authority a notice of inspection before the erection of the proposed structure. After erecting the building, a notice of completion shall be issued to the local authority to facilitate final inspection/approval. No person shall therefore occupy a building whose certificate of completion has not been issued by the local authority. As a precaution against fire breakout, the by-law states that the walls of any premise shall be non-combustible throughout. Similarly, in every building which comprises more than one story, other than a small house, shall have fire resistance.

Section 214 indicates that, in any public building whose floor is more than 20 feet above the ground level, the council may recommend the provision of firefighting equipment that may include one or more of the following: hydrants, hose reels and fire appliances, external connections, portable fire appliances, water storage tanks, dry risers, sprinkler, drencher and water spray spring protector system

4.6 Devolution Laws

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

4.6.1 The County Government Act No 17 of 2012

This is an Act of Parliament to give effect to Chapter Eleven of the Constitution; to provide for county governments' powers, functions and responsibilities to deliver services and for connected purposes. The proponent has complied with the act by getting all the relevant approvals for the project from county government of Nairobi

4.6.2 National Government Coordination Act No. 1 of 2013

An Act of Parliament to establish an administrative and institutional framework for coordination of national government functions at the national and county levels of governance. The proponent has adhered to policies formulated under respective ministries concerned with the project.

4.6.3 EMCA part vii (101) Standard for Noise and Excessive Vibration

The proponent shall ensure that the project observes the noise standards set by law during its construction, operation and decommissioning.

CHAPTER 5

PUBLIC CONSULTATION

5.1. Introduction

Public Participation is one of the national values and principles of governance enshrined in the Constitution of Kenya, 2010. It is also a mandatory procedure as stipulated by EMCA 2015 section 58 on EIA for the purpose of achieving the fundamental principles of sustainable development. Views from the residents, stakeholders, and development partners who in one way or another would be affected or rather interested in the proposed project were sought through administering of questionnaires and interviews

5.2 POLICY AND LEGISLATIVE PROVISIONS

5.2.1 International Policy

1. Agenda 21

Chapter 23: strengthening the role of Major Groups gives the right to access information regarding their environmental and social wellbeing

2 Rio Declaration on Environment and Development

Principle 10 provides that “Environmental issues are best handled with participation of all concerned citizens, at the relevant level”.

5.2.2 National legislations

1. The constitution of Kenya (Cap 5, part II: Environment 69(1d)

The legal rights availed to all Kenyan citizens and residents to be included in any project that involves characteristic alterations to their environment.

2 The Environmental Management and Coordination Act (Cap 387)

The participation of the concerned community is a necessity to any development through the general principles section (part II, 5a).

3. Environmental (Impact Assessment and Audit) Regulations section 17

It provides that all EIA studies should undertake Public Consultation as part of the study.

5.3 Objectives of the Public Participation

The objectives of the public participation exercise were to:

1. Disseminate and inform the stakeholders about the project with special reference to its key components and location.
2. Create awareness among the public on the need for the EIA for the proposed project.
3. Gather comments, suggestions, and concerns of the interested and affected parties.
4. Incorporate the information collected in the EIA study.

This process involved mapping of the key stakeholders. Stakeholder mapping is the process of identifying and categorizing key stakeholders. The following stakeholders were identified

a) **Nairobi City County**- Physical Planning Department

They play key role in ensuring compatibility of land uses including the proposed project and the neighbourhood character. They will also issue architectural and structural drawings approval

b) **National Construction Authority**

This is the body that is oversees all construction works and therefore they are key stakeholders during construction phase

c) **National Environment Management Authority**

NEMA is responsible for issuing license before construction

d) **Parklands Local Residents and institutions**

These are the immediate neighbours who are likely to be affected by the proposed project.

5.3 Methodology used in the public participation

The Public Participation (PP) Process is a policy requirement by the Government of Kenya and a mandatory procedure stipulated by EMCA cap 387 of the laws of kenya, on Environmental Impact Assessment for the purpose of achieving the fundamental principles of sustainable development. The public participation was conducted on the 7th April 2022 to 12th April, 2022. The exercise was conducted in different ways, namely;

i. Meetings with the proponent.
ii. Interviews and discussion,
iii. Field surveys and observations
iv. Administering of questionnaires,
v. Validation of findings.

The purpose for such interviews was to identify the positive and negative impacts and subsequently promote proposals on the best practices to be adopted and mitigate the negative impacts respectively. It also helped in identifying any other miscellaneous issues which may bring conflicts in case project implementation proceeds as planned.

5.3.1 Study population

The study area, Parklands ward has a human population of 38,448 as per 2019 census. The consultation and public Participation covered area residents and major institutions in the area like churches, learning institutions, hospitals, and residential estates. Questionnaires and interviews were administered to these institutions and area residents with the aim of getting their views on the proposed project. The map below shows the study area.

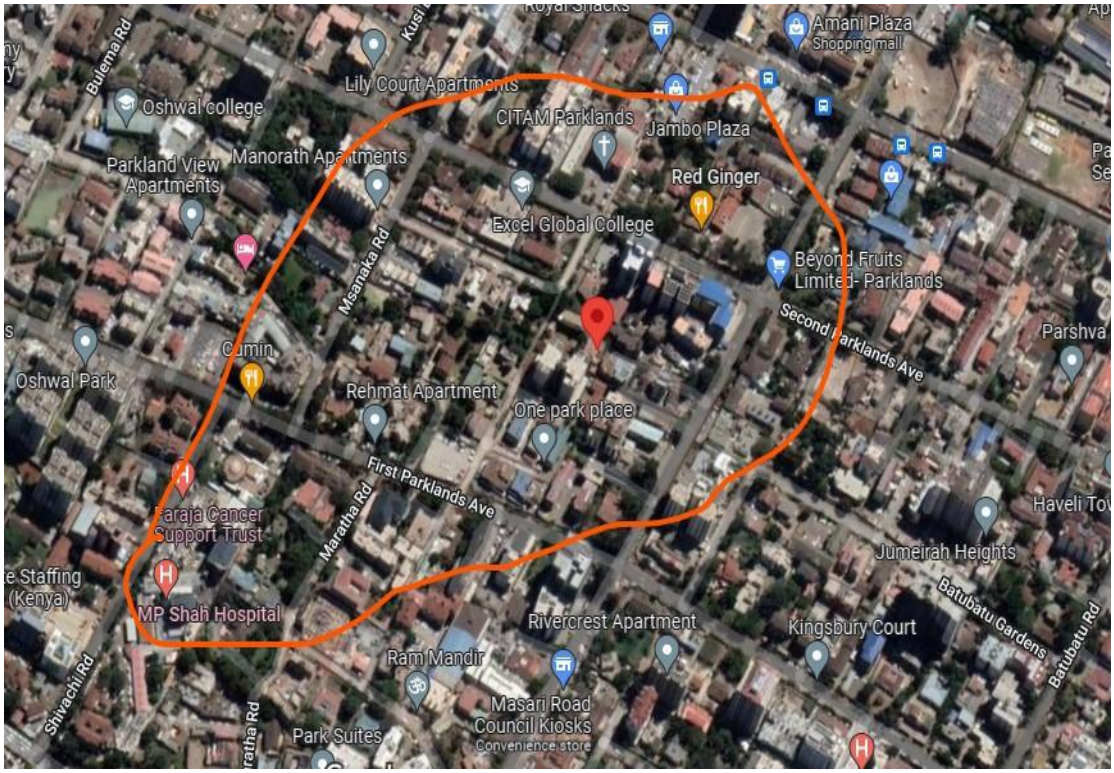

Plate 8:Study Area

5.3.2 Approach

Public participation with respect to the proposed project was conducted through interviews and questionnaires carried out in various dates in April 2022. The participants/respondents were representatives of the residents, business owners, relevant, private institutions and other stake holders in the study area as discussed herein.

The first round of stakeholders' consultation for the proposed project was done on 9th April 2022. This involved interviews and questionnaires with representatives of various institutions in the area. Institutions included, churches, learning institutions, hospitals, and residential estates as represented by the table below;

Table 7:Neighbouring institution

S/N	INSTITUTION	CONTACT	REPRESENTATIVE POPULATION
1	Citam Church	0723281795	5,000
2	Mp Shah Hospital	0727844882	4,000
3	Excel Global college	0714800900	5,000
4.	Sri Murugan Koili Nairobi (Temple)	0729272228	3,000
6	**TOTAL**	**-**	**17,000**

The second round of public participation for the proposed project was done on 12th April 2022. This involved administration of questionnaires and interviews to the residents within the neighbourhood of the proposed project site with the aim of getting their views on the proposed project. This is represented by the table below.

Table 8: Second round of public participation

S/No	NAME	RESIDENT AREA	CONTACT
1	Edwin Mugambi	One Park place	0715173166
2	Alex Mwaura	1st Parkland Avenue	0716289708
3	Daniel Onyango Awiti	1st parkland area	0112363290
4	Nicholas mwangangi	One Park place	0705099974
5	Emmanuel Juma	2nd Parklands	0706252663
6	Victor Manyeki	2nd parklands area	0701164311
7	Geoffry Odour	Ngori	0792559928
8	Samson Litokho	One Park place	0712159333
9	Warren Ashihundu	2nd parkland	0799074601
10	Francis masinde	Ndovu Ahmed lane	0782978460
11	Eliesophat liluma	Sri Murugan Koil	0768744284
12	Amos simiyu	Ngori	0732843376
13	Evans Wafula	One Park place	0701533916

The third round of public participation for the proposed project was done on 26th April 2022.

The following institutions took part in the exercise;

Table 9: Third round of public participation

S/N	Institution	Contact	Representative population
1	Parklands Mosque	0720489966	2000
2	Bayinah Academy	0762686458	2000
3	Hereld International School Preparatory (New Junior school)	0717285879	1000
4.	Highridge Primary School	0762243105	3000

5.4 Analysis of the Public Consultation findings

While carrying out the public participation exercise, residents and neighbours expressed a variety of concerns with regard to the proposed project. Some of the concerns raised were as follows: -

5.4.1 Positive Issues

i. Creation of employment opportunities

ii. Increase and enhance property values in the neighbourhood

iii. Improve security in the area

iv. Increase supply of quality and affordable student accommodation

v. Creation of business opportunities

vi. Market for supply of building materials

5.4.2 Negative Issues

Parklands residents raised the following concerns in relation to the proposed development;

i. Dust emission

ii. Noise and vibrations

iii. Increased population in the area

iv. Pressure on the available water supplied by NWSC

v. Security in the area

The area residents in particular those living in One Park place and Sri Murugan Koili wanted to know how dust will be mitigated so that they are not adversely affected. They expressed their concern about their clients being affected by the dust from the site. The EIA expert assured them that the contractor will deploy dust suppression and mitigation measures such as regular sprinkling of water and scaffolding the site to minimize on dust pollution.

There was a concern over the possibility high noise levels in the project site as a result of excavation and construction works. The sources of noise pollution will include transport vehicles, construction machinery, construction workers and metal grinding

and cutting equipment among other sources. The EIA expert assured them that the construction activities will be limited to between 8am and 5pm during weekdays and 8am and 3pm during Saturdays.

Respondents were also concerned about the increase in the number of people visiting the project area especially during construction and operational phases. With the increase in the number of people in a particular area comes with different vices like insecurity and indecent behaviours. The EIA expert assured them that the contractor will ensure workers onsite always uphold integrity and decent behavior within and without the site

5.5. Suggestions to the Proponent

Those interviewed and consulted, made the following suggestions to the proponent:

- Security, during the construction and the operational phase should be given the utmost priority.
- A proper solid waste management plan to be put in place during the construction and the operational phase
- Give priority to local youth in employment opportunities.
- They suggested that dust covers be used during the construction and transportation of materials like cement and sand.
- Re-planting of any trees and/or vegetation that would be cut down during construction.
- Provide the workers with the right PPEs to prevent accidents
- Some suggested that no construction activities should be carried out on site on Sundays and during any public holidays.

Plate 9: GKIC staff administering Questionnaire

Plate 10: Neighbourhood development trend

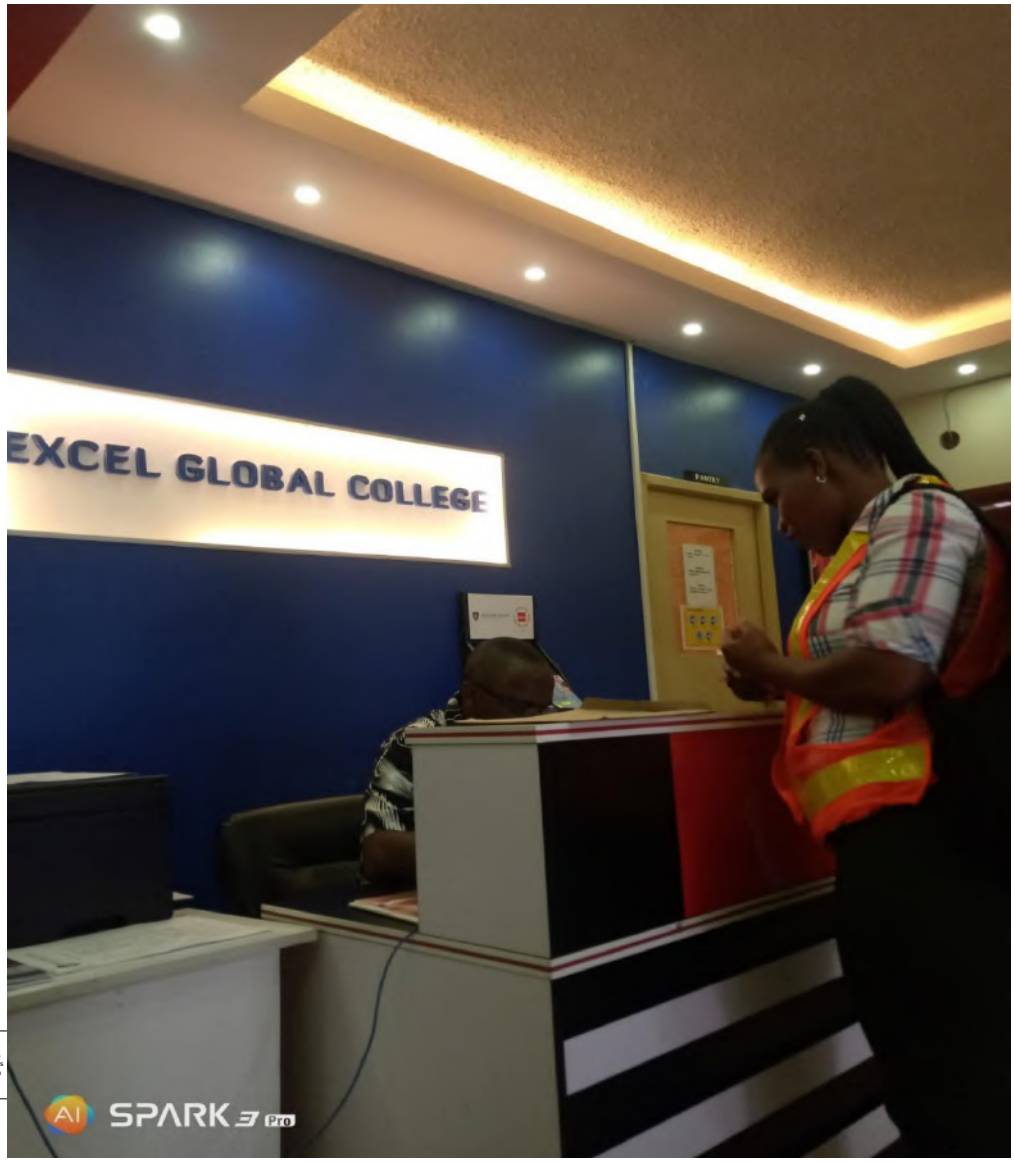

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Plate 11: GKIC staff administering questionnaire

CHAPTER 6

PROJECT ALTERNATIVES

6.0 Background

In considering the development options, three alternatives were considered.

These are;

1. No project alternative.
2. Relocation alternative.
3. Alternative land use.
4. Alternative design.
5. Alternative construction materials and Technology.

6.1 No project alternative

Without the proposed development, the subject plot would remain in its current underutilized state. Advantage associated with this are that there would be no negative implications on the environment brought about by implementing the project. However, the disadvantages of a no project alternative' outweigh the advantages. These include:

a) The proponent would be at loss financially since they have already invested a lot of resources in terms of professional and statutory fees.

b) The statutory bodies and professionals' firms engaged in the project would lose out on potential revenue.

c) The proponent would lose out on the opportunity to invest and increase his income.

d) Potential job opportunities would be missed.

e) The government would lose out on taxes and the opportunity to encourage investment in the private sector.

f) The value of land would remain underutilized.

g) It will jeopardize the goal of increasing more safe and affordable student residencies

6.2 Relocation alternative

Given the nature, time frame and objectives of the project, the proponent settled on this as the most feasible site. The proponent has settled on this site because it is located in an area that is compatible with the proposed development (there is a 10-storey residential apartment 50 meters from the site and a 12-storey hostel development coming up on the neighbouring plot). The site is the most logical and convenient. Furthermore, the search for an alternative site would imply increase in the expenditure, time, and costs for the proponent.

6.3 Alternative land use

Alternative land uses such as residential (apartments) or social facility may be considered for the site. However, given there is demand for student accommodation in the area as attributed by the feasibility study conducted by the proponent, coupled with the size of the plot and the net return, it is advisable for the proponent to undertake the proposed development.

6.4 Alternative design

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

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

6.5 Alternative construction materials and technologies

The proposed project will be constructed using modern, locally, and internationally accepted materials to achieve public health, safety, security, environmental and aesthetic requirements. Equipment that saves on water and energy will be given priority. The concrete pillars will be built using locally sourced stones, sand, cement, metal bars and fittings that meet the Kenya Bureau of Standards requirements.

The alternative technologies available include the conventional brick and mortar style, prefabricated concrete panels or even temporary structures. Due to cost and durability, the brick-and-mortar style is most popular in Kenya.

Other various technologies include concrete frame construction, timber construction,

Prefabricated space frame construction, steel frame and aluminium frame. The technology to be adopted will be most economical and one sensitive to the environment. Heavy use of timber during construction is discouraged because of destruction of forests. The exotic species will be preferred over indigenous species where need arises.

CHAPTER 7

POTENTIAL IMPACTS AND MITIGATION MEASURES

7.1 Introduction

This section highlights the potential impacts that the proposed project may incur to the environment and their necessary mitigation measures for the expected negative impacts of the proposed project. The potential impacts and the possible mitigation measures have herein been analysed under the Construction Phase, Operation Phase and the

Decommissioning Phase.

7.1.1 Positive impacts during Construction phase

One of the main positive impacts during projects construction phase is the availability of employment opportunities especially to casual workers and several other skilled workers such as building and construction engineers. Employment opportunities are of benefit both economically and socially.

Several workers including casual labourers, masons, carpenters, joiners, electricians, and plumbers are expected to work on the site during the construction phase. Apart from casual labour, semi-skilled, unskilled labour and formal employees are also expected to obtain gainful employment during the period of construction. Generally, employment during the construction phase will lead to multidimensional development in the area and in Nairobi at large and improve several people ‘s living standards.

7.1.2. Optimal Use of Land

In Africa the UN predicts that the current 400 million urban citizens will exceed 750 million by 2030 and will reach 1.2 billion by 2050. The increasing population will require adequate facilities at learning institutions that are mostly located in cities. It is

also plausible to note that while urban population increases the size of land available for development will continue to decrease. The effect of this trend has been the reduction of farmland and encroachment into animal habitats and migration routes. Thus, it is highly recommended that land being a finite resource must be optimally utilized.

The proposed project will see conversion of idle land into student residence for the surrounding institutions. This type of land use in a city also makes it easier for provision of services such as waste management, piped water and electricity. It is reported that detached houses/dwellings have a larger ecological footprint than storied houses (Bastinon*i, et al*. 2006). Thus, through the construction of multi-storeyed buildings it is possible to reduce both the direct and indirect demand of built-up and bio productive areas correspondingly

7.1.3. Economic Growth

Through the use of locally available materials during the construction phase e.g. cement, concrete and ceramic tiles, timber, sand, ballast electrical cables and others; the project will contribute towards growth of the country‘s economy by contributing to the gross domestic product. The consumption of these materials, oil, fuel, 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.

7.1.4. Improvement of the Informal Sector

There are usually several informal businesses, which come up during the construction periods of such projects. These include food vendors who benefit directly from the construction workers buying food and other commodities from them. This will

promote the informal sector in securing some temporary revenue and hence improve their livelihood.

7.1.5. Market for Supply of Building Materials

The project will require supply of large quantities of building materials most of which will be sourced locally in within Nairobi and the surrounding areas. This provides ready market for building material suppliers such as quarrying companies and hardware shops.

7.2. Negative Impacts during construction

7.2.1. Noise pollution

The construction works will most likely be a noisy operation due to the moving machines (mixers, tippers, communicating workers) and incoming vehicles to deliver construction materials and workers to the site. Workers are most likely to be affected since noise beyond some level is itself a nuisance if not maintained within acceptable levels.

7.2.2. Disposal of excavated soil

Site excavations shall be done to the satisfaction of the Principal Consultant‘s specification hence some materials shall be rejected as waste for disposal. Improper disposal of this category of waste may have adverse impacts on the receiving environment.

7.2.3. Soil Erosion

The excavation and construction activities are likely to loosen the soil particles making them prone to soil erosion. Such problems become serious when the topsoil is left bare and agents of erosion become active. Construction also requires use of sand and other natural materials such as ballast and others used in cement manufacture which must be sourced from a different location. This leaves vast areas prone to

erosion. Soil erosion is an important problem both at its source and downstream of the development site.

Lost soil will be deposited somewhere, and the location of the deposition could alter downstream hydrology and increase chances of flooding. It may also pose a water quality issue directly because of siltation and indirectly from contaminants carried with or attached to soil particles.

7.2.4. Air Pollution

Potential impacts on the air quality during the construction stage will be due to the dust and the exhaust gases generated in and around the construction site. Sources of air pollution will include vehicles entering the site to deliver building materials and the machinery used for construction generate hazardous exhaust fumes such as Carbon Oxides (COx), Sulphur Oxides (SOx) and Nitrogen Oxides (NOx). Dust particles are caused by excavation works, vibration of machinery and movement of vehicles. Such dust and gases have direct negative impact to the quality of air hence animal/human health.

7.2.5. 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 form works.

7.2.6. Building Materials and Energy Consumption

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.

7.2.7. Generation of solid wastes

During construction solid waste will be generated. These include papers used for packing cement, plastics and timber remains among others. Dumping around the site will interfere with the aesthetic status of the area. This has a direct effect to the surrounding community. Disposal of the same solid wastes off-site could also be a social inconvenience if done in the wrong places. The off-site effects could be aesthetic, pest breeding, pollution of physical environment, invasion of scavengers and informal recycling communities.

7.2.8. Public Health and Safety/ accidents

During construction, there will be increased dust, air and noise pollution. These are considered harmful to human health. The residents and workforce involved will be subjected to these environmental hazards putting them at high risk.

Waste material such as pieces of glass and nails left lying on the ground may cause injuries/ accidents to the workers. Food for the construction workforce is usually provided by mobile individuals most of which operates without licenses. This can compromise health of the workers especially if such foodstuffs are prepared in unhygienic conditions.

7.2.9. Oil spills

The machines on site may be containing moving parts which will require continuous oiling to minimize the usual corrosion or wear and tear. Possibilities of such oils spilling and contaminating the soil and water on site are real. Likewise, moving vehicles on site may require oil change.

7.2.10. Increased energy consumption

The project will consume fossil fuels (mainly diesel) to run transport vehicles and construction machinery. Fossil fuel is non-renewable, and its excessive use may have serious environmental implications on its availability, price and sustainability. The

project will use electricity supplied by KPLC for construction and operation. Electricity in Kenya is generated mainly through natural resources, namely, water and geothermal resources. Approximately 32% of electricity in Kenya is generated from thermal sources. Thus, it should be prudently used.

7.2.11 Insecurity

Insecurity may arise during the construction phase since intruders may try to steal the building materials deposited on the site. This especially happens in cases where there is no fence.

7.2.12 Traffic Density

The proposed project will come along with increased (vehicle) traffic along the connecting routes especially during construction phase.

7.2.13 Impact on Flora and Fauna

During construction, habitat destruction may occur where the habitat is removed to make way for a new development. Plants and animals in these areas are usually directly impacted resulting to total loss or reduction of biodiversity. Mobile animals (birds, insects & mammals) retreat into remnant part of the habitat or migrate. De-vegetation results to generation of environmental impacts such as soil erosion, hydrological imbalance, decreases air purifiers etc. The proposed project will cause major disturbances to the birds and insects on the site; vegetation (shrubs, grass & trees) will be cleared.

7.3. Positive Impacts during Occupation Phase

7.3.1. Increased student enrolment due to accommodation availability

Increased enrolment in universities over the past decade has subsequently augmented demand for accommodation. Most universities if not all in Kenya do not have adequate facilities for the increasing numbers. Shortage of accommodation facilities in public and private universities is forcing students to live in residencies outside the

campuses, exposing them to insecurity. A government scheme to encourage the private sector to put up residencies near universities has not met the demand for accommodation, leaving most students at the mercy of unscrupulous landlords and criminals. University enrolment has for a long time been curtailed by the lack of student accommodation.

At times, the expensive accommodation available makes the cost of higher education unaffordable to most people.

The proponent has been working to meet the high demand for student accommodation facilities. Their model seeks to not only provide accommodation but to do it the right way. This model includes providing among others comfortable, secure, standard, affordable residencies. The initiative will give parents some form of relief knowing that their children are living in secure environments as they study.

7.3.2. Employment Opportunities

Employment opportunities are one of the long-term impacts of the proposed project that will be realized after construction and during the operation and maintenance of the building. Some people will be employed by the project as management agents, caretakers, cleaners, security personnel and technicians.

7.3.3. Incorporation of proper Waste Management System

The project is designed such that there will be provision of a well-planned strategic waste management system. The wastes will thus be collected from the site in bulk and as one unit such that the careless disposal leading to proliferation of wastes within the surrounding areas will be curbed.

7.3.4. Increased Revenue generation

Revenues paid to the national and county government in form of taxes will increase once the project is complete. The value of the plot will increase leading to increased land rates payable to the County government.

7.3.5. Increased Business Opportunities

The students will be in constant need of basic needs hence ready market for foodstuffs and stationery among others. The project management will wish to reside in the neighbourhood hence increased demand for accommodation and other resources.

7.3.6 Improved Security

Security will be ensured around the hostel through distribution of suitable security lights and presence of 24-hour security guards. Additionally, CCTV cameras shall be used in monitoring security.

7.4. Negative Impacts during operation

7.4.1 Solid Waste Generation

The project is expected to generate enormous amounts of solid waste during its operation phase. The bulk of the solid waste generated during the operation of the project will consist of paper, plastic, glass, metal, textile and organic wastes. Such wastes can be injurious to the environment through blockage of drainage systems, choking of water bodies and negative impacts on animal and human health.

7.4.2 Energy Consumption

During operation, the family units will use a lot of electrical energy mainly for domestic purposes including lighting, cooking, running of air conditioning equipment, running of refrigeration systems, pumping water into reservoirs. Since electricity generation involves utilization of natural resources, excessive electricity consumption will strain the resources and negatively impact on their sustainability.

7.4.3 Pressure on Existing Facilities

The proposed development is also likely to increase pressure on existing infrastructure such as roads and water supply.

7.4.4. Increased storm water flow

The building roofs and pavements will lead to increased volume and velocity of storm water or run-off flowing across the area covered by the units. This will lead to increased amounts of storm water entering the drainage systems, resulting in overflow and damage to such systems in addition to increased erosion or water logging in the Neighbouring areas.

7.4.5 Fire

Fire outbreaks are common in Kenya and they usually subject detrimental effects to the environment. Fire causes both economic and social drawbacks. There are operations that are prone to such outbreaks at construction sites. It is therefore important to consider the issue of fire.

7.5. Positive Impacts during decommissioning

7.5.1. 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.

7.5.2. Employment Opportunities

Employment opportunities will be created for the demolition staff during the demolition phase of the proposed project.

7.6. Negative Impacts during decommissioning

7.6.1. 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 because of the noise and vibration that will be experienced because of demolishing the proposed project.

7.6.2. Generation of Solid Waste

Demolition works 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.

7.6.3. Increased dust emission

Large quantities of dust will be generated during demolition works. This will affect demolition workers as well as the neighbours and plants in the area.

7.6.4. Loss of all occupational phase benefits

Decommissioning of the project will result in loss of all the positive impacts accrued during occupation of the residencies.

CHAPTER 8

IMPACT MITIGATION MEASURES

8.1. Mitigation of Construction Related Impacts

8.1.1. Air Quality

Controlling dust during construction is useful in minimizing nuisance conditions. It is recommended that a standard set of feasible dust control measures be implemented for all construction activities. Emissions of other contaminants (greenhouse gases, and diesel related particulate matter) 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 prior to starting construction 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 and minimize idling of engines.

Dust emissions will be controlled by the following measures:

i. Watering all active construction areas as and when necessary to lay dust.

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 physical sweepers) all paved access roads, parking areas and staging areas at construction sites.

v. Cover construction site with hessian cloth/ scaffolding netting to contain the dust within the premises and plant trees around the site upon construction completion.

8.1.2. Minimization of Noise emitted from the Site

a) Use of noise suppressors or silencers on noisy equipment or noise shields i.e. corrugated iron sheet structures.

b) Construction works should be carried out only during the specified time i.e. from say 0800hrs to 1700 hrs. During this time of the day a majority people are away and also the outside environment is noisy

c) Machineries should be maintained regularly to reduce noise resulting from friction.

d) Workers should be provided with suitable Personal Protective Equipment (PPE) such as earmuffs when operating noisy machinery and when in noisy environment.

e) Drivers delivering materials should avoid unnecessary horning of the trucks/vehicles

f) Provision of a bill board at the construction site/gate notifying of the construction activity and timings.

g) Drivers to switch off vehicle engines while offloading materials.

8.1.3. Impact on Flora and Fauna

Potential Mitigation measures include: -

i. Propose restoration programmes early such as. landscaping and rehabilitation proposals and their role in mitigating impacts for the affected areas.

ii. Manage the introduced vegetation on completion of the development to restore or improve the site. iii. Landscaping as proposed in the designs should be done by specialists.

8.1.4. Soil Erosion

Potential Mitigation measures for soil erosion include: -

a) Provide soil erosion control measures for instance, suppressing open surfaces with water or use of soil erosion control structures on soil-erosion prone areas within
the site.

b) Avoid unnecessary excavations and other soil disturbances that can predispose it to the agents of erosion.

c) Avoid unnecessary movement of soil materials from the site.

d) Control over excavation works especially during rainy/wet conditions

e) Re-surface open areas on completion of the project and introduce appropriate vegetation.

8.1.5. Oil leaks and spills

Potential Mitigation measures include.

i. All machinery should be keenly inspected not to leak oils on the ground. This can be ensured through regular maintenance.

ii. Maintenance should be carried out in a well-designed and protected area and where oils/grease is completely restrained from reaching the ground. Such areas

should be covered to avoid storm from carrying away spilled oils into the soil/water systems. iii. All oils/grease and materials should be stored in a site‘s store, in the contractor‘s yard.

iv. Proper disposal of oil handling materials such as drums, oily clothes/papers/materials, and cans.

8.1.6. Solid Waste

a. Efficient use of building material to reduce waste and recycling where possible

b. Engage the services of registered waste handlers to transport waste to designated disposal sites

c. Use of an integrated solid waste management system; through a hierarchy of options: source reduction, recycling, composting and reuse, will facilitate waste handling during occupation phase.

d. Provision for dustbin cubicles

e. Segregation of waste at the source

f. To manage waste in line with the Environmental management and coordination (Waste Management) Regulations, 2006

8.1.7. Public Health and Safety Awareness Potential

Mitigation measures include.

i. Depending on the occupational safety and health hazards anticipated while performing assigned job tasks, workers will require using properly fitting personal protective equipment (PPE) to avoid injuries and illness. These include working boots, overalls, helmets, goggles, earmuffs, masks and gloves

ii. A First Aid Kit should be provided within the site and during construction phase. This should be fully always equipped and should be managed by qualified persons.

iii. Adapt a suitable emergence response plan to manage occurrence of anticipated hazards during construction phase. iv. Safety awareness may be gained through regular safety meetings, safety training or personal interest in safety and health.

v. The contractor should have workmen's compensation cover. It should comply with workmen's compensation Act, as well as other ordinances, Regulations and union Agreements.

vi. Sanitary facilities should be provided; and maintain Standard cleanliness of the facilities.

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

viii. Workers should always be sensitized on social issues such as drugs, alcohol, diseases such as HIV/AIDS and STIs etc.

ix. Ensure provision of safe drinking water for the workers on site.

8.1.8 Insecurity

Potential Mitigation measures

a) The project site should be enclosed using suitable walls to beef-up security and to control movement within the site.

b) There should be guard houses at the gate. Security guards should always monitor the gate of the facility to keep away the intruders and to control movement within the site.

c) Contractor should provide adequate security during the construction period when there are no works on the site.

d) The guards stationed at the gates should document movements in and out of the site/property.

8.1.9. Increased energy demand

Potential Mitigation measures include

i. Turn off machinery and equipment when not in use.

ii. Put off all lights immediately when not in use or are not needed. iii. Use energy conserving electric lamps for general lighting.

iv. Make use of alternative source of energy such as solar power. Solar panels proposed in the project should be fully utilized and timely repaired in case of damage.

8.1.10. Increased Water demand

Potential Mitigation measures

i. Drill a borehole to supply water for the development in both construction and occupation phase ii. The contractor should use water bowsers and tankers to bring in water for construction activities such as during periods of high-water demand. Water fetching should however be subject to authorization by the local water authority.

iii. Install water conserving taps that turn-off automatically when water is not in use.
iv. Encourage water reuse/recycling during construction and occupation phases.

v. Roof catchments of building blocks should be provided with rainwater harvesting systems (gutters, down pipes and water storage facilities) to enhance collection and storage of the resulting run-off. Such water can be used in watering flower gardens,

general cleaning etc vi. Provide notices and information signs to sensitize on means and needs to conserve water resource for instance Keep/Leave the Tap Closed. This will awaken the civic consciousness of the workers and residents about water usage and management

8.1.11 Traffic Density

Potential Mitigation measures include: -

i. Notify the motorists about the proposed development once implementation is started. It is important that warning/ informative signs (billboards) be erected at the site. The signs should be positioned in a way to be easily viewed by the public and mostly motorists.

ii. The traffic along the connecting roads should be controlled especially during construction phase and mostly when trucks are turning into the site, say when delivering of materials.

iii. Employ traffic marshals to control traffic along the adjacent roads and in and out of the site.

iv. Rehabilitate the access road leading to the property. In case the major road is damaged by the heavy trucks and machinery, the proponent should embark on repair after completion of construction phase.

8.1.12 Increased storm water flow during occupational

Potential Mitigation measures include

a. Rainwater harvesting gutters and storage tanks should be installed to reduce the amount of rainfall reaching the surface.

b. Semi permeable materials should be used for construction of pavements.

c. After completion of construction, the proponent should embark on comprehensive landscaping to increase softscape cover on the plot.

8.I.13. Fire incidence Potential

Mitigation measures

i. Hire competent and properly authorized electrical contractor to do the wiring and other electrical works.

ii. Install fire alarm system for entire project

iii. Install smoke detectors in kitchens.

iv. Installation of firefighting equipment following County Fire requirements.

v. Conduct regular firefighting drills within the site.

vi. Develop and adapt an (fire) emergency response plan for the project during and occupation stage.

vii. Ensure that all firefighting equipment are regularly maintained and serviced.

viii. Provide fire hazard signs such as ‘No Smoking’ sign, Direction to exit in case of any fire incidence and emergency numbers

CHAPTER 9

ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN- EMP

9.1. Introduction

An Environmental Management/ Monitoring Plan (EMP) has been developed to assist the proponent in mitigating and managing environmental impacts associated with the life cycle of the project. It is noteworthy that key factors and processes may change through the life of the project and considerable provisions have been made for dynamism and flexibility of the EMP. As such, the EMP will be subject to a regular regime of periodic review during project implementation.

Table 10, Table 11 and **Table 12** form the core of this EMP for the demolition, construction, operational and decommissioning phases of the proposed project respectively. In general, the Tables outline the potential safety, health and environmental risks associated with the project and detail all the necessary mitigation measures, their financial costs, as well as the persons responsible for their implementation and monitoring. The EMP will be used as checklist in future environmental audits.

9.2. EMP for Demolition phase

Demolition of the building involves several activities of them foremost step would be a detailed pre-demolition preparatory works such as desired equipment, manpower, removing hazardous or regulated materials, obtaining necessary permits from the authority, submitting necessary notifications, disconnecting utilities, and development of site-specific safety and work plans for the workforce among others.

The demolition EMP is presented in Table 10: EMP for demolition below.

Table 10: EMP for demolition

S/NO.	**POSSIBLE ENVIRONMENTAL IMPACTS**	**PROPOSED MITIGATION MEASURES**	**RESPONSIBILITY FOR MITIGATION**	**MONITORING FREQUENCY**	**ESTIMATED COST (KSHS)**
1.	Air, Noise and Dust Pollution During the Dismantling of the existing building	-Water spraying at the demolition site -Fencing / Install barriers (GI sheets, geo-net) to shield from dust and aggregates -Avoid usage of machines/equipment with extra noise; -Do not accumulate and burn waste at the site	Proponent and Contractor	Demolition	**5**0, 000
2.	Disturbance to the neighboring Population and pedestrians	-Install barriers (Hessian cloth/ scaffolding net) to shield from dust and aggregates -Give prior notice of activities to the neighboring stakeholders -Restrict demolition works to daytime between 8:00am and 5:00pm	Contractor and proponent	**Demolition**	**30,000**
3.	Vibration Impact	- Precaution should be taken while using the machines and equipment, during demolition - Comply with the provisions of Noise Prevention and Control Rules 2005, Legal notice no. 24 regarding noise limits at the workplace	Contractor and proponent		**No cost**
4.	Impacts due to the disposal of waste materials	- The solid waste will be segregated at source level and collected in a separate container -Reusable or useful materials like, building blocks doors and metal reinforcements will be sold to willing buyers - Debris will be disposed at designated sites considering all the environment factors.	Contractor and proponent	**Demolition**	**200,000**

5.	Safety for the Demolition Workers	-Make mandatory the use of safety gears (helmets, safety belts, masks, gloves, and boot) by workers depending on nature of work. -Workers will be provided with first aid and health facilities at the site. -There will be provision for group accidental insurance for the workers. -Adhere to provisions of OHS, 2007 guidelines.	Contractor and proponent	**Demolition**	**50,000**

9.3. EMP for construction phase

The necessary objectives, activities, mitigation measures, responsibilities and monitoring indicators pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the construction phase of the proposed project are outlined in Table 11 below

Table 11: EMP for construction

S/No.	ENVIRONMENTAL/ SOCIAL IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY FOR MITIGATION	MONITORING FREQUENCY	ESTIMATED COST (KSHS)
	Site clearance	• Ensure proper demarcation and delineation of the project area to be affected by construction works	Proponent, Contractor Engineer, Architect, Workers	Routine inspection	150,000
	Soil Erosion	• Ensure management of excavation activities • Control activities especially during rainy seasons • Provide soil erosion control and conservation structures where necessary. • Compact loose soils to minimize wind erosion	Proponent Contractor NEMA Inspectors Workers	Routine inspection	350,000
	Air Pollution	• Dust suppression with water-sprays during the construction phase on dusty areas • Careful screening of construction site to contain and arrest constructionrelated dust. • Exposed stockpiles of such as sand, will be enclosed, covered, and watered daily. • Ensure construction machinery and equipment are well maintained to reduce exhaust gas emission • All personnel working on the project will be trained prior to starting construction on	Proponent Contractor County Public Health Officer Workers NEMA Inspectors	Daily inspection Routine maintenance	300,000

		methods for minimizing air quality impacts during construction. • Drivers of construction including bulldozers, earthmovers etc. will be under strict instructions to minimize unnecessary trips and minimize idling of engines.			
	Noise Pollution	• Construction activities to be restricted to daytime (8am to 5pm). • Use of Suppressors on noisy equipment or noise shields for instance corrugated iron sheet structures • Sensitize drivers of construction machinery on effects of noise • Trucks used at construction site shall be routed away from noise sensitive areas where feasible. • Maintain plant equipment to suppress frictional noise • Workers in the vicinity or involved in high level noise to wear PPE • Comply with EMCA (Noise and excessive vibration pollution control) Regulations 2009	Proponent Contractor County Public Health Officer Workers NEMA Inspectors	Random inspection Routine maintenance	100,000
	Oil Pollution	• Proper storage, handling and disposal of new oil and used oil and related wastes • Maintain construction machinery and equipment to avoid leaks • Maintenance of construction vehicles to be carried out in the contractor's yard (off the site) • Provide oil interceptors along the drains leading from car wash and service bays	Contractor Worker	Daily inspection Routine maintenance	50,000

	Solid waste and liquid waste	• Segregate the waste at the site • Ensure proper disposal of construction waste in the	Contractor Proponent Workers	Weekly Checks	250,000
		contractor ‘s yard (off the site). • Engage services of a registered NEMA waste handler to dispose the waste at designated disposal sites • During transportation of building materials and waste, trucks should be covered to prevent them from falling along the roads • Sensitize workers on the reuse of materials where appropriate. • As provided for by the Building Code, a portable toilet will be provided on site to be used by construction workers			
	Increased water demand	• Drill a borehole • Employ services of waters vendors to supplement water supply • Sensitize workers to reduce water wastage	Contractor Proponent WRMA Workers	Daily Inspection	400,000

	Health and safety of workers	• All workers will be sensitized before construction begins, on how to control accidents related to construction. • A comprehensive contingency plan will be prepared before construction begins, on accident response. • Keep record of the public emergency service telephone numbers including: Police, Fire brigade, Ambulance • Adherence to safety procedures will be enforced. • Provide first aid kits at strategic places in the site • All workers to wear protective gear during construction. • Provide clean water and food to the workers.	Contractor County Public Health Officer Workers Proponent NEMA Inspectors	Random Checks	100,000
		• Construction work will be limited to daytime only • Workers to be adequately insured against accidents			
	Insecurity	• Provide security guards during construction period for both day and night • Construct temporary barrier (iron sheet) around the site before commencement of construction • Keep records of all movement in and out of the construction site. • Strategic installation of lighting as well as security alarms and backup systems	Contractor Proponent	Daily Observation	100,000

	Traffic congestion	• Enforce speed limits for construction vehicles especially along the roads leading to the site • Provide bill boards at the site/entrance to notify motorists and general public about the development • Ensure that the vehicles comply with axle load limits • Ferry building materials during offpeak hours • Employ traffic marshals to control traffic in and out of site • Employ well trained and experienced drivers	Proponent Contractor NEMA inspectors Workers	Daily observation	75,00

9.4. EMP for occupational phase

The necessary objectives, activities, mitigation measures, responsibilities and monitoring indicators pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the operational phase of the proposed project are outlined in **Table 12** below

Table 12: EMP for Operational phase

POSSIBLE ENVIRONMENTAL IMPACTS	PROPOSED MITIGATION MEASURES	RESPONSIBILITY FOR MITIGATION	MONITORING FREQUENCY	ESTIMATED COST (KSHS)
Solid waste generation	• Ensure that wastes generated are efficiently managed through recycling, reuse and proper disposal procedures • Encourage segregation of waste (organic and inorganic) and provide for clearly marked dustbins to serve the specified use. • A private NEMA licensed company to be contracted to handle solid waste	Proponent Estate Managers Occupants County Public Health Officer	Periodic Checks	150,000
Liquid Waste Generation and Management	• Regular inspection and maintenance of the waste disposal systems during the operation phase •Connection to Sewer system/septic tank	Proponent Estate Managers Occupants County Public Health Officer	Periodic checks	100,000
Air pollution	• Cabro-paving on exposed areas • Gardening of landscaped areas • Watering of uncovered area	Proponent NEMA Inspectors	Weekly checks Routine Maintenance	250,000
Noise and vibration Pollution	• Do annual noise measurements. • Sensitize residents on minimal permissible noise levels • Comply with L.N. 25: Noise prevention and control rules, 2005 and L.N. 61: Noise and vibration pollution regulation, 2009	Proponent Workers NEMA Inspectors Occupants	Periodic Checks	75,000
Storm Water impacts	• Proper maintenance of drainage structures • Inspection and maintenance of water harvesting gutters and storage tanks	Proponent	Routine inspection and maintenance	100,000

Increased water use	• Harvest rain-water • Install water conserving taps that turn off automatically when not in use • Educate residents on optimal water use • Install a discharge meter at water outlets to determine and monitor total water usage	Proponent Estate Managers Occupants	Daily Inspection Routine maintenance	600,000
Increased energy use	• Switch off electrical appliances when not in use. • Use energy conserving bulbs. • Install occupation sensing lighting at various locations such as the parking areas which are not in use all the time • Installation of a wind turbine for lighting	Proponent Occupants	Routine Inspection	1,000,000
Insecurity	• Engage services of security guards • Install CCTV cameras • Place hotline numbers on strategic places • Sensitize residents on security precautions	Proponent	Periodic and surprise checks	350,000
Fire	• Install firefighting equipment • Sensitize the residents on fire risks such as conduct regular fire drills • Adapt effective emergency response plan • Maintain firefighting equipment regularly • Provide emergency numbers at strategic points	Proponent Residents	Routine inspection	150,000

9.5. Decommissioning Phase

The following is the process guiding the contractor in undertaking decommissioning of the facility: -

In addition to the general process, the expert wishes 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 in Table 9 below.

Table 11:EMP for decommissioning and closure

S/No	POSSIBLE ENVIRONMENTAL IMPACTS	PROPOSED MITIGATION MEASURES	RESPONSIBILITY FOR MITIGATION	MONITORING FREQUENCY	ESTIMATED COST (KSHS)
	Demolition of existing structures	▪ Apply for demolition permit from relevant authorities before commencing the demolition ▪ Engage a registered private contractor to carry out the demolition ▪ Provide workers with Personal Protective Equipment (PPEs) ▪ The demolition exercise to be limited at daytime only ▪ Comply with EMCA (Noise and excessive vibration pollution control) Regulations 2009	Project proponent Contractor NEMA inspectors	Daily during the demolition process	600,000

	Solid and Liquid waste	▪ Ensure proper solid waste disposal and collection facilities ▪ Refuse collection vehicles will be covered to prevent scatter of wastes by wind. ▪ Demolition wastes to be collected by a licensed operator to avoid illegal final	Contractor Proponent NEMA inspectors Registered/licensed waste management company	Daily	500,000
		dumping at unauthorized sites. ▪ All persons involved in refuse collection shall be in full protective attire			
	Air pollution	▪ Dust suppression with water sprays on dusty areas. ▪ Careful screening of construction site to contain and arrest construction related dust ▪ Ensure demolition machinery and equipment are well maintained to reduce exhaust gas emission	Proponent Contractor NEMA Inspectors	Daily	100,000
	Noise Pollution	▪ Demolition activities to be restricted to daytime. ▪ Use of Suppressors on noisy equipment or use of noise shields for instance corrugated iron sheet structures ▪ Workers in the vicinity or involved in high level noise to wear respective safety & protective gear. ▪ Comply with EMCA (Noise and excessive vibration pollution control) Regulations 2009	Proponent Contractor Workers NEMA Inspectors	Random	100,000

	Health and safety of workers	▪ All workers to wear PPEs such as helmets ▪ All workers will be sensitized before demolition begins, on how to control accidents related to construction. ▪ Accordingly, adherence to safety procedures will be enforced. ▪ All workers will be adequately insured against accidents.	Proponent Workers NEMA Inspectors	Daily	150,000
	Re-vegetation and comprehensive landscaping	▪ Implement an appropriate re-vegetation Programme to restore the site to its original status ▪ During the revegetation period, appropriate surface water run off controls will be taken to prevent surface erosion. ▪ Fencing and signs restricting access will be posted to minimize disturbance to newly vegetated areas;	Contractor proponent	random	400,000

Table 13: EMP summary

S/No	Phase	Amount	Percentage (%)
1	Demolition	650,000	8.7
2	Construction	2,200,000	29.3
3	Occupational	2,800,000	37.3
4	Decommission	1,850,000	24.7
5	**Total EMP Cost**	**7,500,000**	**100.00**

CHAPTER 10

ENVIRONMENTAL HEALTH AND SAFETY

10.1 EHS Management and Administration

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

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

10.2 Policy, Administrative and Legislative Framework

It is the primary responsibility of the contractor to promote a safe and healthy environment at the workplace and within the neighborhood in which the proposed project will be constructed by implementing effective systems to prevent occupational diseases and ill-health, and to prevent damage to property. The EHS Management Plan when completed will be used as a tool and a checklist by the contracted engineers in planning and development of the construction of this project.

10.3 Organization and implementation of EHS Management Plan

The contactor shall use the EHS plan at the proposed project site both during construction and operation. The engineer will use it during construction phase with the assistance of an EHS consultant who shall enforce its provision throughout the life of the project.

10.4 The Guiding Principles to be adopted by the contractor

The company will be guided by the following principles: -.

- It will be a conscious organization committed to the promotion and maintenance of high standards of health and safety for its employees, the neighboring population and the public at large.
- Ensuring that EHS activities are implemented to protect the environment and prevent pollution.
- Management shall demonstrate commitment and exercise constant vigilance in order to provide employees, neighbors of the project and the environment, with the greatest safeguards relating to EHS.
- Employees will be expected to take personal responsibility for their safety, safety of colleagues and of the general public as it relates to the EHS management plan.

10.5 EHS management strategy to be adopted by the contractor

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

- Create an Environment Health and Safety Management committee and incorporate EHS as an effective structure at various levels and units to manage and oversee EHS programs in all construction and operation phases of the project.
- Maintain an effective reporting procedure for all accidents.
- Provide appropriate tools and protective devices for the success of the project.
- Encourage, motivate, reward and support employees to take personal initiatives and commitment on EHS.

10.6 Safety Agenda for both the proponent and contractor

There will be a permanent EHS agenda during construction.

(a) Contractors

The EHS management plan code of practice shall be applicable to the contractors working in the premises and shall be read and signed. It shall be incorporated into the contract to perform work. This should also remind the contractor of his/her.

- Legal requirements.
- Statutory obligations
- Obligation to lay-down a system for reporting accidents

- Responsibility to ensure that his/her employees are supplied with personal protective equipment and where applicable as per the EHS management plan for the whole project.
- Responsibilities as it relates to contracting an EHS consultant in liaison with the proponent
- Obligation to ensure that he obtains detail of jobs and areas where permit-to-work must be issued

(b) All residents and workers' responsibility

- Know the location of all safety equipment, and learn to use them efficiently

10.7 Safety requirement at the project site during construction and operation Period

(a) The Contractor

The contractor will ensure that:

- Safe means of entry and exit at the proposed project site.
- Ensure adequate briefing of job at hand on the safe system of work before commencement of work.
- The EHS coordinator must attend all times throughout the duration of the project.
- The EHS consultant must maintain constant assessment of the risk involved as the work progresses
- A safety harness must be worn before entry into all confined spaces
- An EHS consultant must be posted at the entrance of the project site to monitor progress and safety of the persons working at the construction site

(b)The Drivers

Within the construction premises, the following traffic rules will be observed: -

- Observe speed limits and all other signs and obey traffic rules.
- Use the vehicle for the purpose to which it is intended only

(c) Fire hazards at the construction site

- Workers at the site shall ensure that: -
- Oxy-acetylene cylinders are not contaminated with grease or oil.

- Oxy-acetylene cylinders are not subjected to direct sunlight or heat.
- Oxy-acetylene cylinders are not to be used or stored standing in a vertical position.
- When in use, ensure the inclination should never be over 30° from the vertical

10.8 Welding at the construction site

It is the responsibility of the contractor during construction to:

- Ensure that welding clamp is fixed such that no current passes through any moving parts of any machine.
- Ensure that all welding clamps are in good operating condition and conduct current without arcing at the point of contact.
- Ensure that welding clamps are free from any contact with explosive vapors for example. Oil spillage, Fuel tanks, Coal dusts and miscellaneous combustible material
  (for example, Cotton rags filter bags, rubber belting, and wood shavings)
- Ensure that any slag or molten metal arising from welding activities does not start up.

Fires by:

- ✓ Clearing combustible material to a distance of at least 3 meters away from the working area
- ✓ Appropriate fire extinguisher is to be always kept available for immediate use

10.9 Emergency procedure during construction and operation

An emergency means:

- Unforeseen happening resulting in serious or fatal injury to employed persons or the
- Neighboring communities.
- Fire or explosion, Natural catastrophe.
- In the event of such an emergency during construction, the workers shall:
- Alert other persons exposed to danger.
- Inform the EHS coordinator, Do a quick assessment on the nature of emergency.
- Call for ambulance on standby, when emergency is over the EHS coordinator shall notify the workers by putting a message: “ALL CLEAR”

CHAPTER 11

OBSERVATIONS

The expert made the following observations regarding the proposed project;

1) There is a demand for student accommodation in Nairobi as 75% of institutions for higher learning and tertiary colleges are located within the capital hence the project is justified.

2) The proposed development is in line with Kenya's goal to build safe learning and accommodation facilities for students in higher education.

3) The key positive impacts that will result from the project include; growth of the economy, boosting of the informal sector during the construction phase, provision of market for supply of building materials, employment generation, increase in government revenue, optimal use of land and provision of affordable housing units for students at all levels.

4) The project location follows the zoning regulations since the area is predominantly a residential area and is unlikely to have adverse effects to the environment if well managed.

5) Negative environmental impacts that will result from establishment of the proposed project which includes pressure on the existing facilities, noise pollution, dust emissions, solid waste generation, increased water demand, increased energy consumption and risk of workers accidents, can be adequately and sufficiently mitigated by implementation of the proposed Environment Management Plan. The recognition of the consequent cost amounting to Kes. 7,500,000.00 will ensure that the EMP is implemented.

6) The proposed project was well received by residents with 99% of the respondents welcoming it citing that it was a good move in the area as it would bring along employment and business prospects.

7) The expert considered the contention of one respondent, Shah Sheetal (0720927799, Shah.sheetal@kenyalink.org) who opposed the project citing other developments and possible influx of young people who might pose a security threat.

CHAPTER 12

RECOMMENDATIONS

The proposed development shall bring with it numerous positive impacts including an increase in the number of housing units in the area, creation of employment opportunities, improved businesses in the project area, especially for various suppliers, and an increase in revenue for both the county and national governments among others as outlined in the report.

The following recommendations are submitted: -

1. The mitigation measures outlined in the report and carefully analysed in the EMP be implemented. These include negative environmental impacts resulting from the establishment of the project which include an increase in traffic along the access roads, air, and noise pollution, increased water demand, and strain on existing infrastructure.

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

3. The proponent should ensure compliance with all relevant national and international environmental, health, and safety standards, policies, and regulations that govern the establishment and operation of such projects.

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

5. The proponent should go green. Rainwater harvesting, sinking a borehole are options available to supplement and augment the Nairobi water and sewerage company. The rainwater can be used for watering flowers. Green energy (Solar and wind) should be used.

6. The proponent should consider having a rooftop and balcony green patch with flowers and indigenous plant species for beautification and conservation of the environment.

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

8. The regulator should license the project as there is a need for housing units in the area as it will contribute to the big 4 agenda and vision 2030.

CHAPTER 13

CONCLUSION

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

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

2. A comprehensive Environmental Management and Monitoring Plan (EMMP) has been developed for full implementation of the project with minimal damage to the environment.
3. There are guidelines for addressing environmental, occupational health and safety especially during project implementation.

4. The proposed project is considered as environmentally sound. Further, the project proponent is willing to guarantee that the potential impacts whose means of mitigation have been disclosed in this report and most of them have already been incorporated in the project design will be effectively implemented.

5. The project has been duly validated by the project proponent.

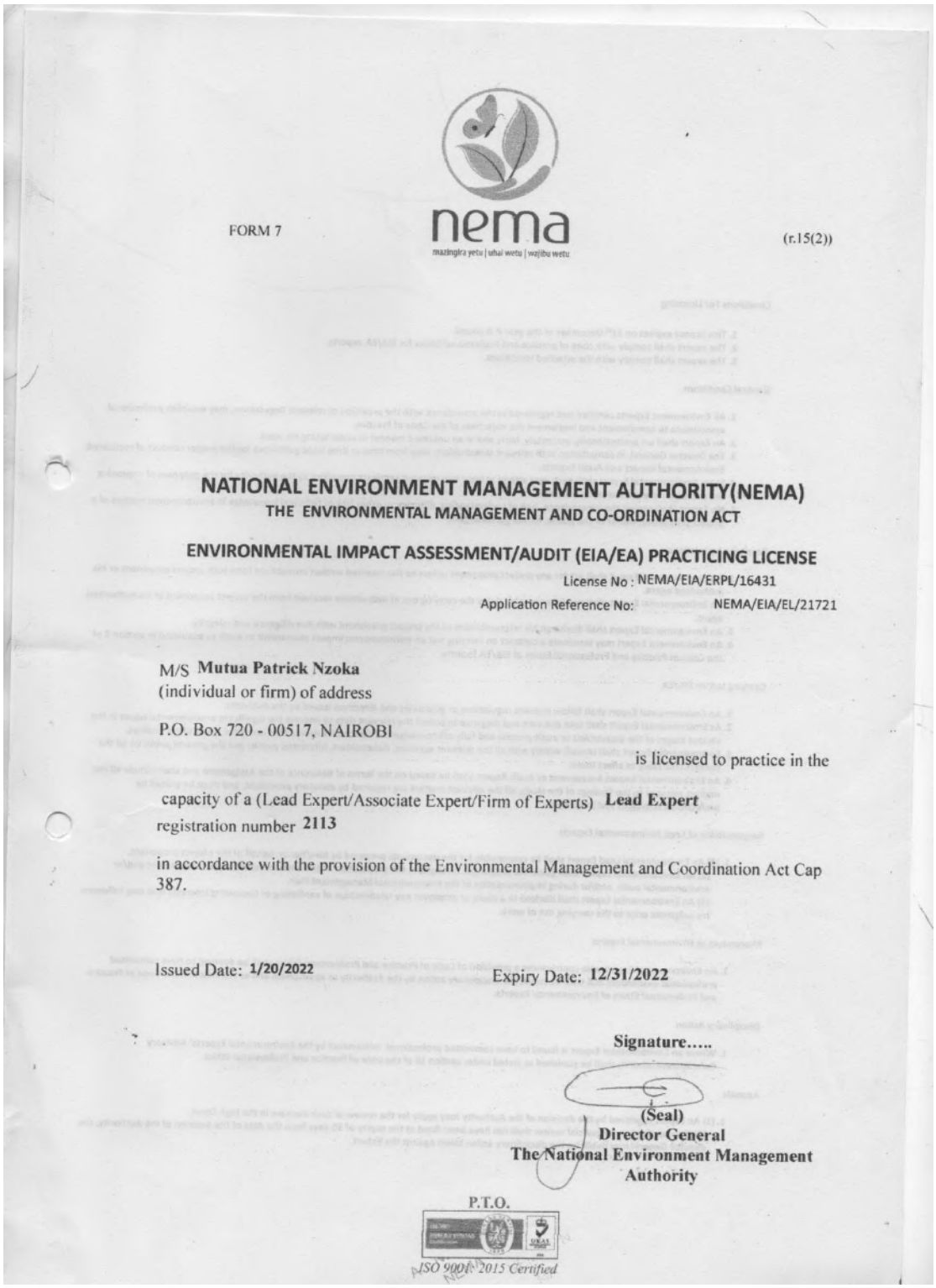
In view of the foregoing, the expert recommends approval and licensing of the project to enable the country to achieve its national goals and aspirations.

REFERENCES

1. Baker, B. H., J. G. Mitchell, and L. A. J. Williams. ―Stratigraphy, Geochronology and Volcano-Tectonic Evolution of the Kedong–Naivasha–Kinangop Region, Gregory Rift Valley, Kenya. *Journal of the Geological Society* 145, no. 1 (1988): 107–16.
2. Kenya gazette supplement Acts Building Code 2000. Government printer, Nairobi
3. Kenya gazette supplement Acts Physical Planning Act, 1999. Government printer, Nairobi
4. Kenya gazette supplement Acts Public Health Act (Cap. 242). Government printer, Nairobi
5. Kenya gazette supplement Acts Water Act, 2002. Government printer, Nairobi
6. Kenya gazette supplement Acts, Environmental Management and Coordination (Water Quality) Regulations, 2006. Government printer, Nairobi
7. Kenya gazette supplement Acts, Environmental Management and Coordination (Waste Management) Regulations, 2006. Government printer, Nairobi
8. Kenya gazette supplement Acts, Environmental Management and Coordination (Noise and Excessive Vibrations Pollution) Regulations, 2009. Government printer, Nairobi
9. Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003. Government printer, Nairobi
10. Kenya National Bureau of Statistics, 2021: Economic Survey Report
11. KENYA, LAWS OF. *The Constitution of Kenya, 2010*. Attorney General Nairobi, 2010. http://www.wipo.int/edocs/lexdocs/laws/en/ke/ke019en.pdf.
12. The Occupational Safety and Health Act, 2007. Government Printer, Nairobi.

ANNEXURES

ANNEXURE 1: lead expert practicing license



FORM 7 (r.15(2))

nema
mazingira yetu | uhai wetu | wajibu wetu

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

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

License No : NEMA/EIA/ERPL/16431
Application Reference No: NEMA/EIA/EL/21721

M/S **Mutua Patrick Nzoka**
(individual or firm) of address

P.O. Box 720 - 00517, NAIROBI

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **2113**

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

Issued Date: **1/20/2022** Expiry Date: **12/31/2022**

Signature…..

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2015 Certified

ANNEXURE 2: Bestview holdings Ltd Certificate of Incorporation

No. CPR/2014/135727

CERTIFICATE OF INCORPORATION

I hereby CERTIFY, that -

BESTVIEW HOLDINGS LIMITED

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

GIVEN under my hand at Nairobi this **17 th** day of **March** Two Thousand and **Fourteen**

Registrar Of Companies

Annexure 3: Bestview holdings Ltd KRA pin

KENYA REVENUE AUTHORITY

www.kra.go.ke

PIN Certificate

For General Tax Questions
Contact KRA Call Centre
Tel: +254 (020) 4999 999
Cell: +254(0711)099 999
Email: callcentre@kra.go.ke

Certificate Date : 25/06/2015

Personal Identification Number

P051467965W

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

Taxpayer Information

Taxpayer Name	Bestview Holdings Limited
Email Address	bestviewholdingsltd@gmail.com

Registered Address

L.R. Number :	**Building :** L R NO. 209/785/10
Street/Road : SHEIKH KARUME ROAD	**City/Town :** NAIROBI CITY (NORTH)
County : Nairobi	**District :** Starehe District
Tax Area : CBD	**Station :** North of Nairobi
P. O. Box : 66829	**Postal Code :** 00800

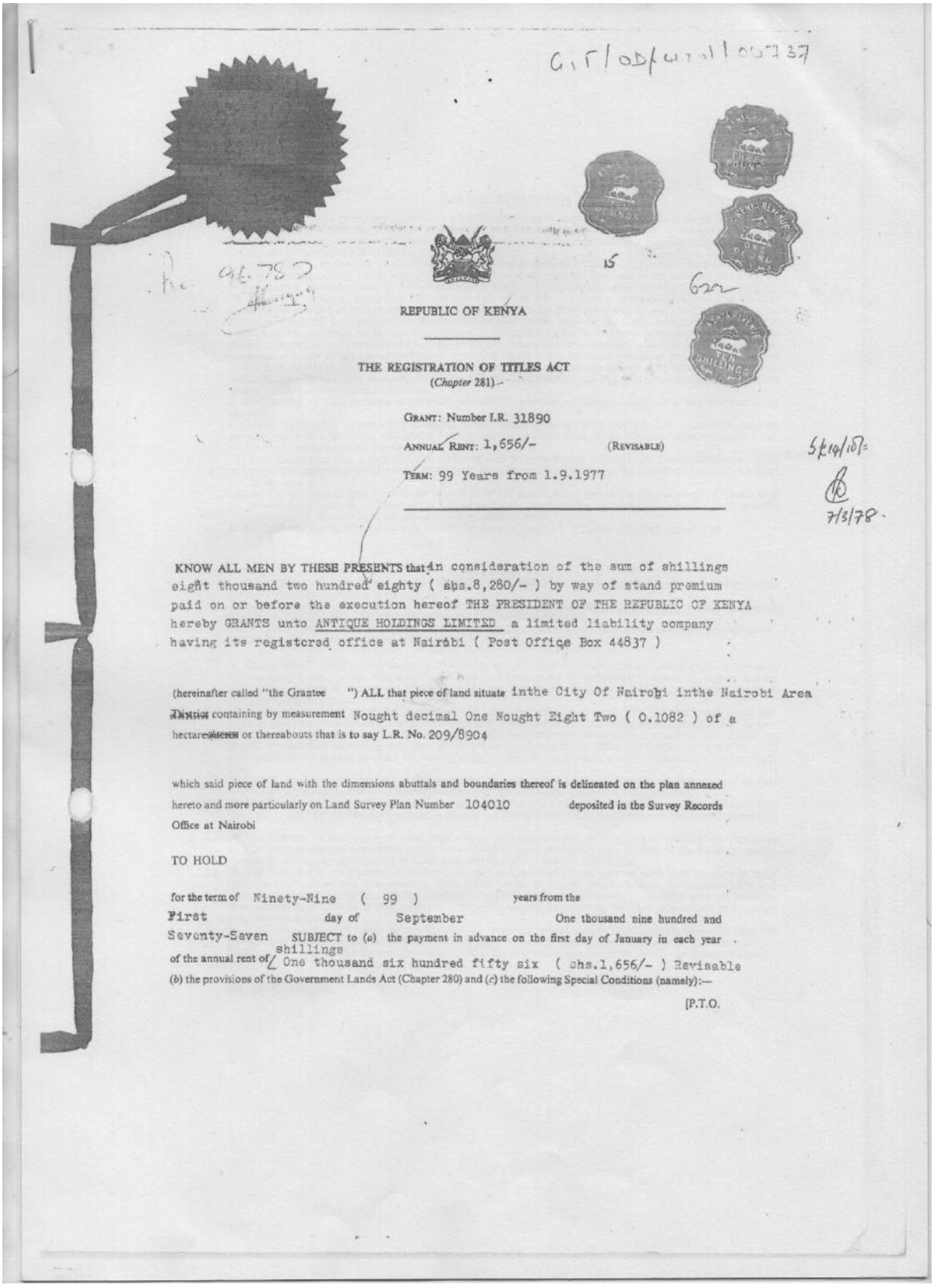
Tax Obligation(s) Registration Details

Sr. No.	Tax Obligation(s)	Effective Date
1	Income Tax - Company	17/03/2014

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.

Annexure 4: Title deed



REPUBLIC OF KENYA

THE REGISTRATION OF TITLES ACT
(*Chapter* 281)

GRANT: Number I.R. 31890

ANNUAL RENT: 1,656/- (REVISABLE)

TERM: 99 Years from 1.9.1977

KNOW ALL MEN BY THESE PRESENTS that in consideration of the sum of shillings eight thousand two hundred eighty (shs.8,280/-) by way of stand premium paid on or before the execution hereof THE PRESIDENT OF THE REPUBLIC OF KENYA hereby GRANTS unto ANTIQUE HOLDINGS LIMITED a limited liability company having its registered office at Nairobi (Post Office Box 44837)

(hereinafter called "the Grantee") ALL that piece of land situate inthe City Of Nairobi inthe Nairobi Area District containing by measurement Nought decimal One Nought Eight Two (0.1082) of a hectares~~acres~~ or thereabouts that is to say L.R. No. 209/8904

which said piece of land with the dimensions abuttals and boundaries thereof is delineated on the plan annexed hereto and more particularly on Land Survey Plan Number 104010 deposited in the Survey Records Office at Nairobi

TO HOLD

for the term of Ninety-Nine (99) years from the First day of September One thousand nine hundred and Seventy-Seven SUBJECT to (*a*) the payment in advance on the first day of January in each year of the annual rent of shillings One thousand six hundred fifty six (shs.1,656/-) Revisable (*b*) the provisions of the Government Lands Act (Chapter 280) and (*c*) the following Special Conditions (namely):—

[P.T.O.

7 Certificate of change of name from Investments & Mortgages Bank Limited to I & M Bank Limited.

3076 29-12-2011

C. S. Maina *235

8 Memo of Discharge of charge No: 5 above.

3077 29-12-2011

C. S. Maina *235

9 Grant of letters of Administration i/r the Estate of Zaverchand Kanji Shamat Shah --- Deceased to Champaben Zaverchand Kanji Shamat Shah --- Administrator.

3078 29-12-2011

C. S. Maina *235

10 Assent (Transfer) to Sandesh Zaverchand Kanji Shah and Anjly Sandesh Shah --- the Beneficiaries 1/4 share of the deceased as joint tenants 1/4 share of Zaverchand Kanji Shah

3079 29-12-2011

C. S. Maina *235

11 Grant of probate of will i/r the estate of Ramilaben Rameshlal Shah --- Deceased to Rameshlal Hirji Shah --- the executor

3080 29-12-2011

C. S. Maina *235

Assent to Rameshlal Hirji Shah --- the Beneficiary 1/4 share of the Deceased · 1/4 share of Ramilaben w/o Rameshlal Shah.

3081 Date of Registration 29-11-2011

C. S. Maina *235

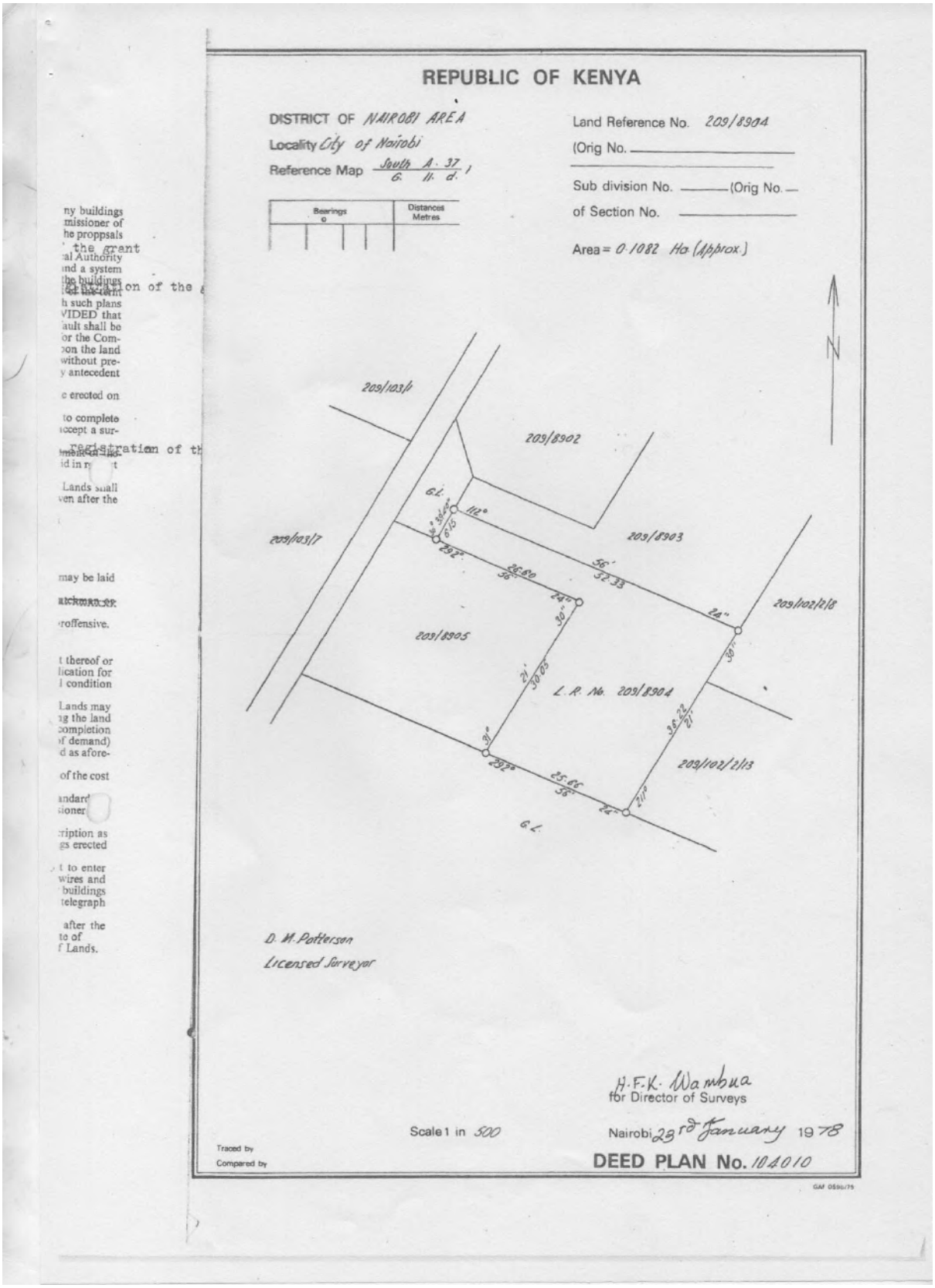
(13.) THE FOLLOWING INSTRUMENT [illegible] REGISTERED AGAINST THE TITLE

Transfer to Bestview Holdings Limited.

Presentation No: 2724 Date of [illegible]: 23-9-2016

Registrar P. K. Tonui *250

Annexure 5: Deed plan



REPUBLIC OF KENYA

DISTRICT OF NAIROBI AREA

Locality City of Nairobi

Reference Map South A. 37 / G. 11. d. 1

Land Reference No. 209/8904

(Orig No. _____)

Sub division No. _____ (Orig No. _____)

of Section No. _____

Area = 0.1082 Ha (Approx.)

Bearings ° | Distances Metres

209/1031

209/8902

209/8903

209/1031/7

209/8905

209/1021/18

209/1021/13

L.R. No. 209/8904

G.L.

112°

292°

38°

24"

30"

21'

38'

D. M. Patterson

Licensed Surveyor

H. F. K. Wambua

for Director of Surveys

Scale 1 in 500

Nairobi 29th January 1978

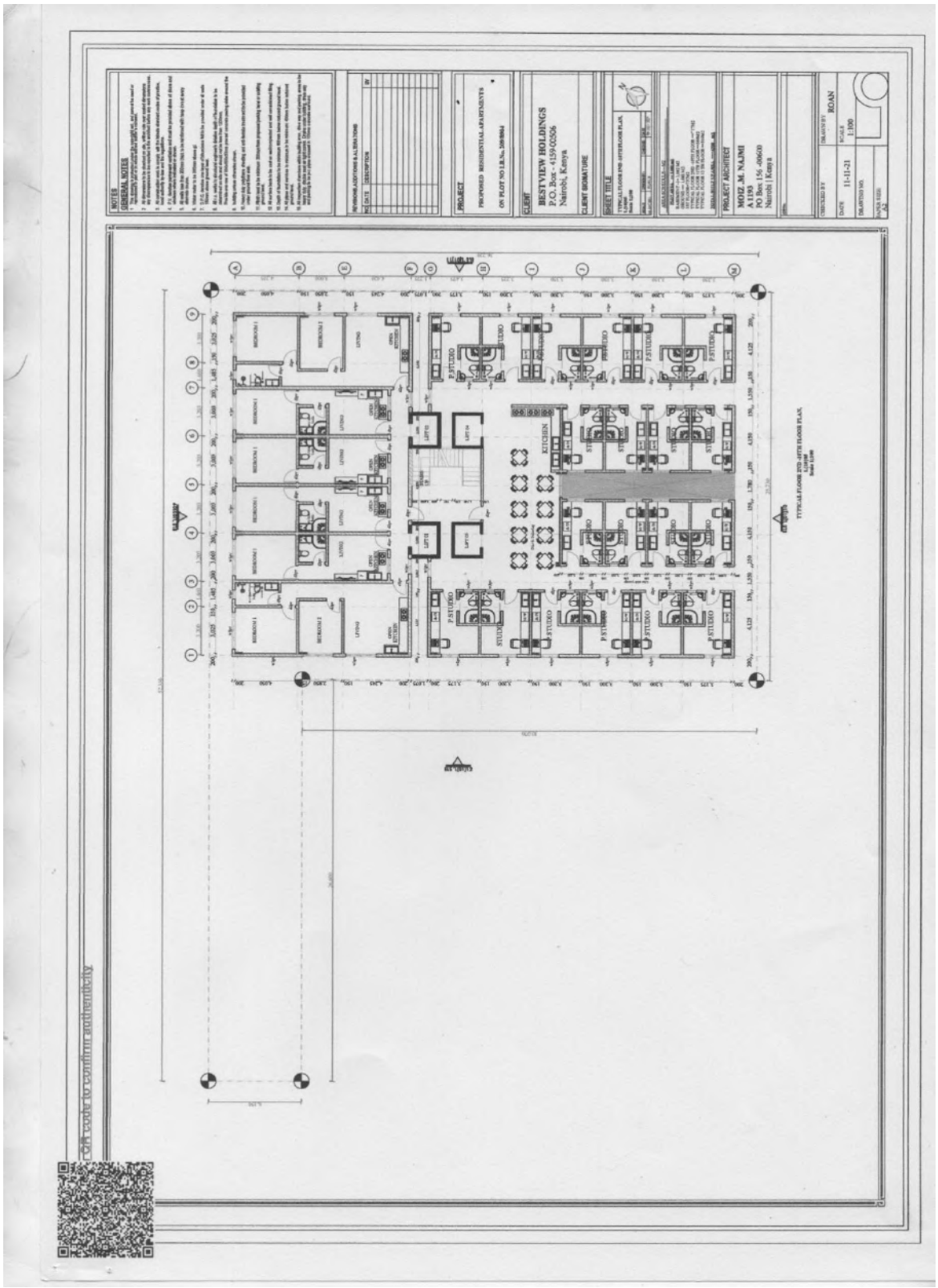
Traced by

Compared by

DEED PLAN No. 104010

GAF 0590/75

Annexure 6: Approved designs



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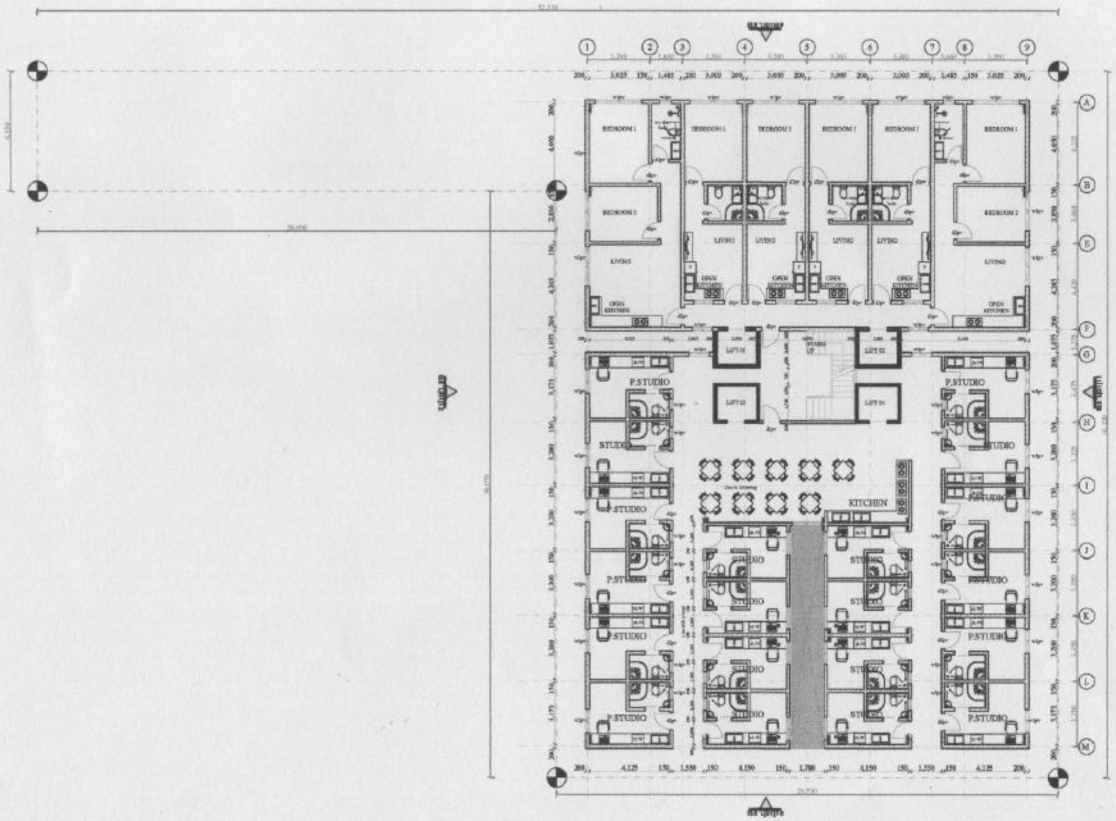

TYPICAL FLOOR 2ND -40TH FLOOR PLAN,

NOTES

GENERAL NOTES

REVISIONS, ADDITIONS & ALTERATIONS			
NO	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

ON PLOT NO L.R.No. 209/8904

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

TYPICAL FLOOR 2ND -40TH FLOOR PLAN,

PROJECT ARCHITECT

MOIZ .M. NAJMI
A 1193
PO Box 156 -00600
Nairobi | Kenya

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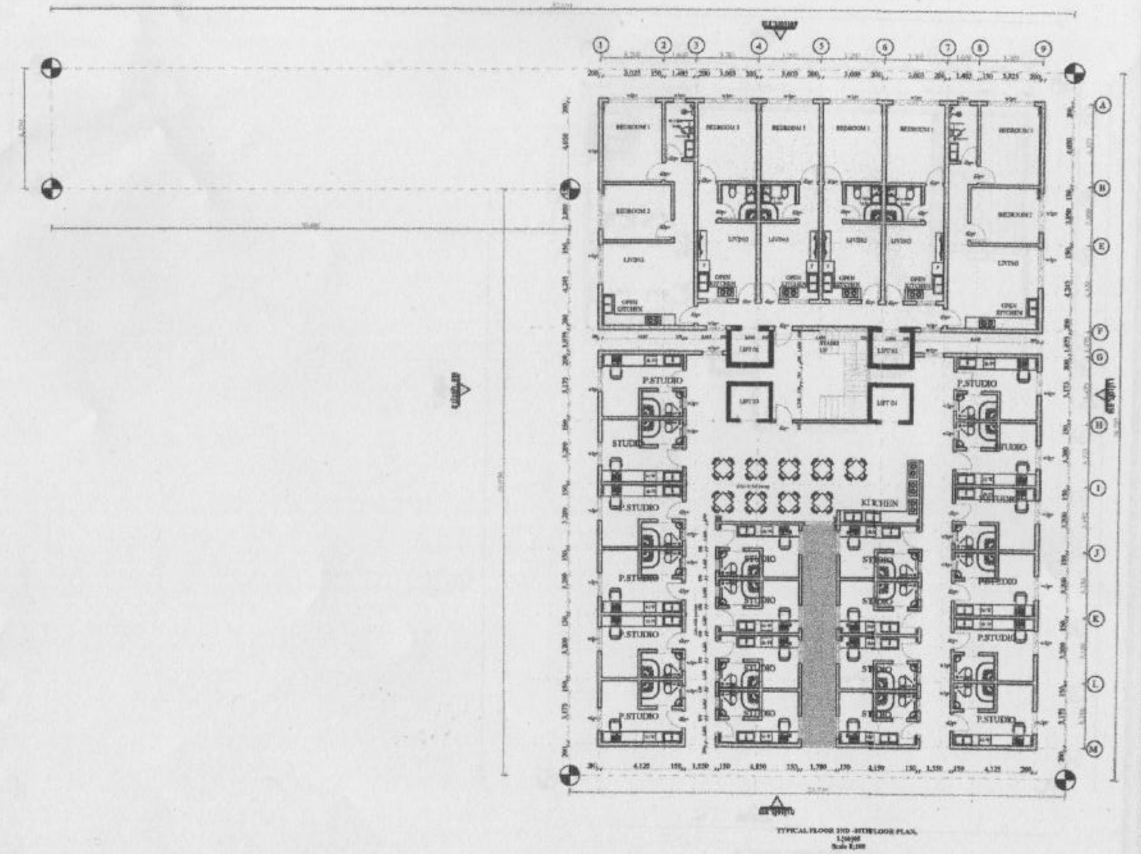

TYPICAL FLOOR 2ND -10THFLOOR PLAN.

NOTES

GENERAL NOTES

REVISIONS ADDITIONS & ALTERATIONS

NO	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

PROJECT ARCHITECT

MOIZ .M. NAJMI
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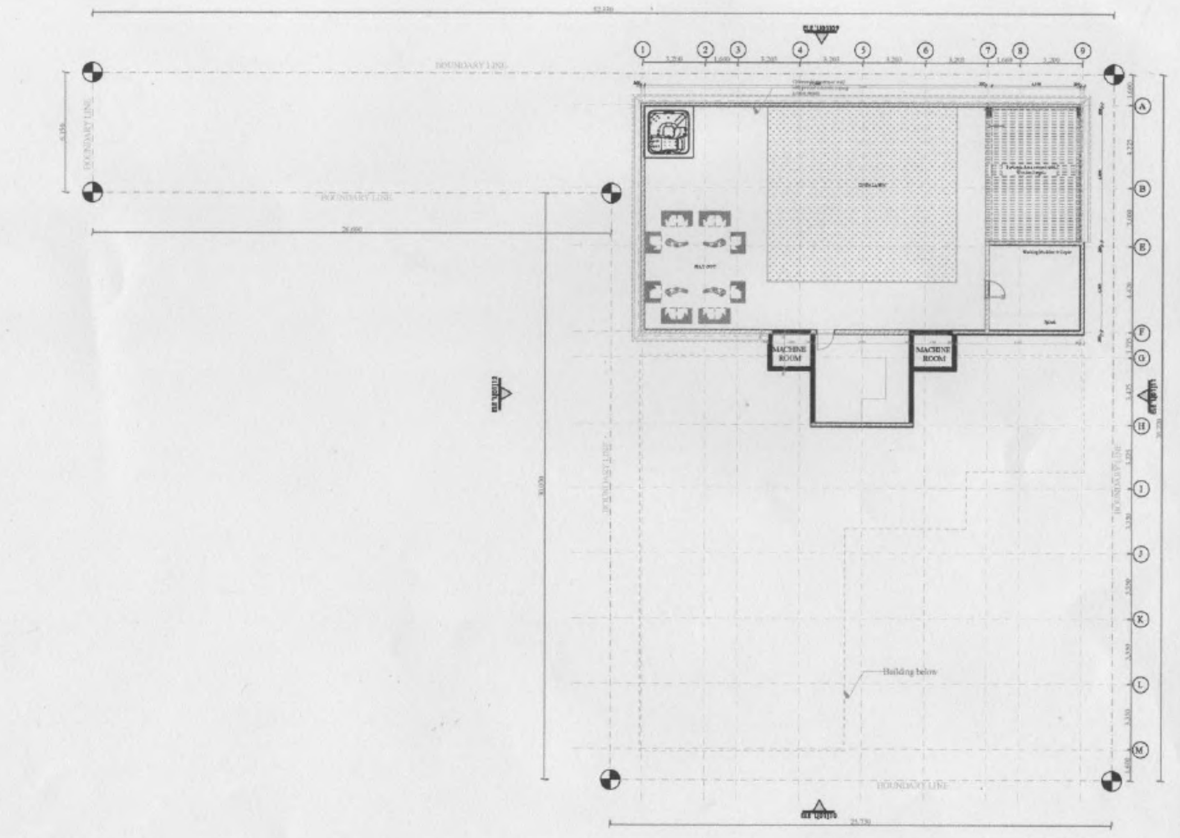

SITE/ROOF FLOOR PLAN,
L(10)08
Scale 1;100

NOTES

GENERAL NOTES

REVISIONS,ADDITIONS & ALTERATIONS

NO.	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

ON PLOT NO L.R.No. 209/8004

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

SITE/ROOF FLOOR PLAN,
L(10)08
Scale 1;100

PROJECT ARCHITECT

MOIZ .M. NAJMI
A 1193
PO Box 156 -00600
Nairobi | Kenya

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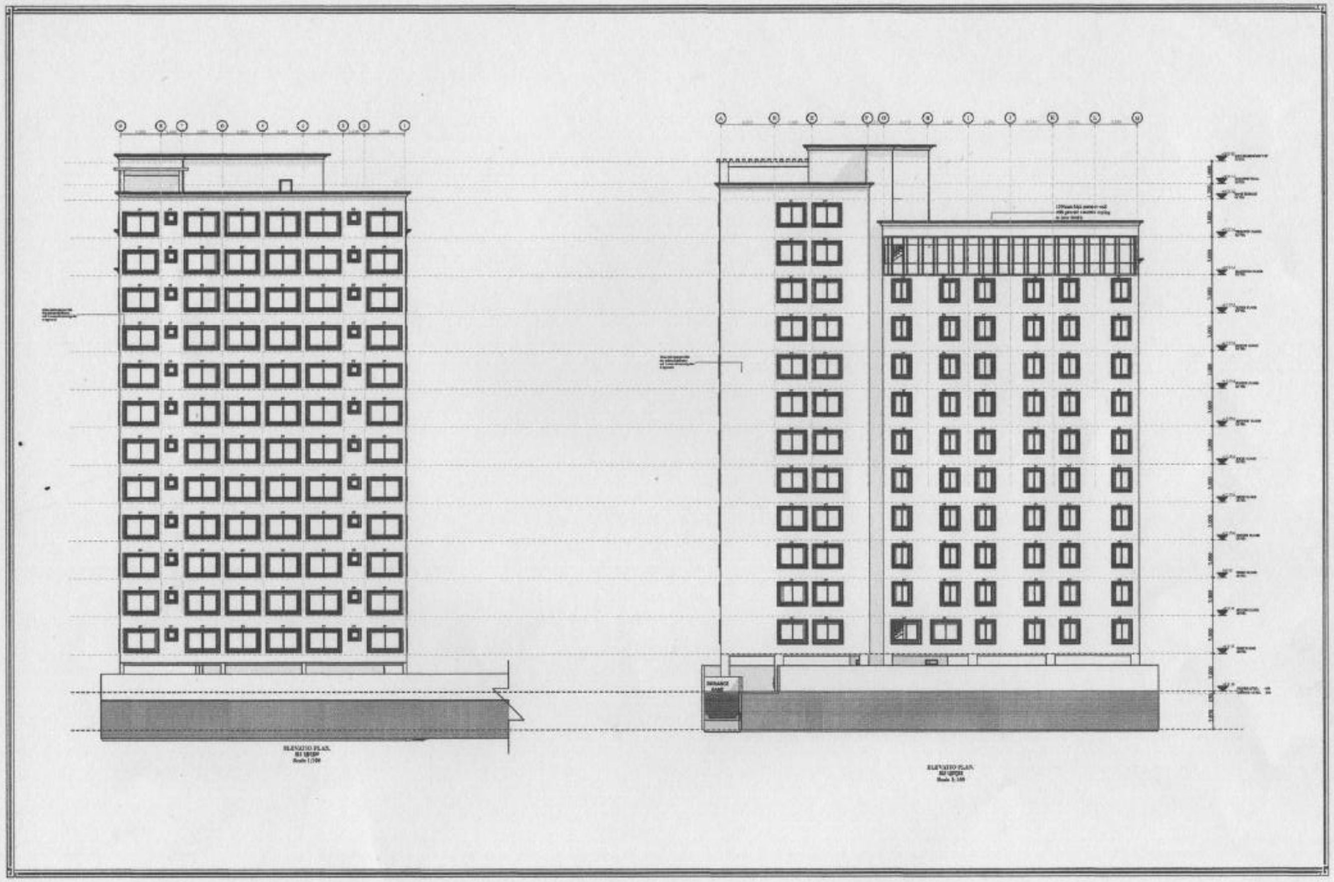

NOTES

GENERAL NOTES

REVISIONS/ADDITIONS & ALTERATIONS

NO.	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

ON PLOT NO L.R.No. [illegible]

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

PROJECT ARCHITECT

MOEZ .M. NAJMI
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PO Box 151 -00600
Nairobi : Kenya

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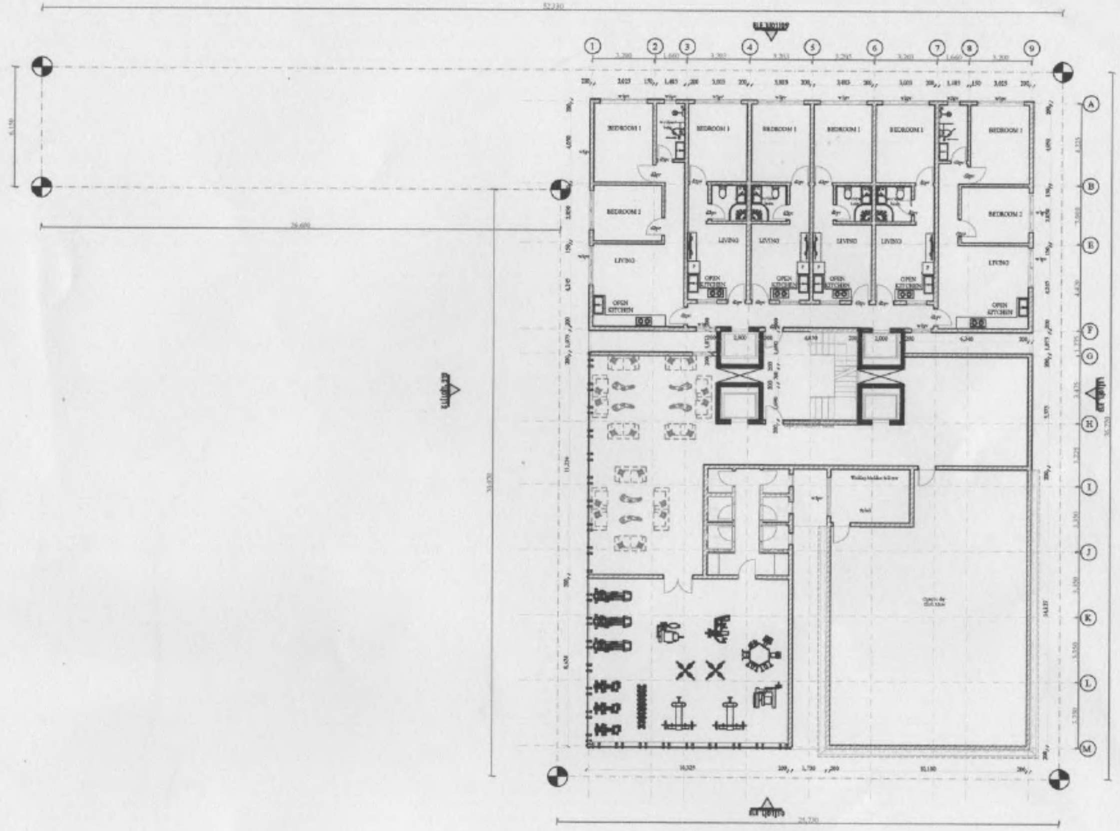

11TH FLOOR PLAN,
L(10)06
Scale 1:100

NOTES

GENERAL NOTES

1. [illegible]
2. All dimensions to be checked on site, [illegible] any discrepancies to be reported to the architect before any work commences.
3. All construction work to comply with the [illegible] standard codes of practice, local authority by-laws and fire regulations.
4. P.V. denotes permanent ventilation and must be provided above all doors and windows where indicated or shown.
5. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
6. Water meter to be 300mm above g.l.
7. D.P.C. denotes one layer of bituminous felt to be provided under all walls 150mm above ground level.
8. [illegible] depth of foundation to be determined on site and should not be less than 1000mm. Provide one row of 600x600x50mm precast concrete paving slabs around the
9. building unless otherwise shown.
10. Heavy duty polythene sheeting and anti-termite treatment to be provided under ground floor slab.
11. Finish level to be minimum 300mm from proposed parking level or existing ground level.
12. All surface beds to be cast on well compacted and well consolidated filling.
13. Depth of foundation to be minimum 400mm below reduced ground level.
14. [illegible] ground level.
15. All inspection chambers within building area, drive way and parking areas to be heavy duty, double seal air tight covers. Drains under building, drive-way and parking to be [illegible] 150mm concrete surround.

REVISIONS,ADDITIONS & ALTERATIONS

NO	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

ON PLOT NO L.R.No. 209/8904

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

11TH FLOOR PLAN,
L(10)06
Scale 1:100

PROJECT ARCHITECT

MOIZ .M. NAJMI
A 1193
PO Box 156 -00600
Nairobi | Kenya

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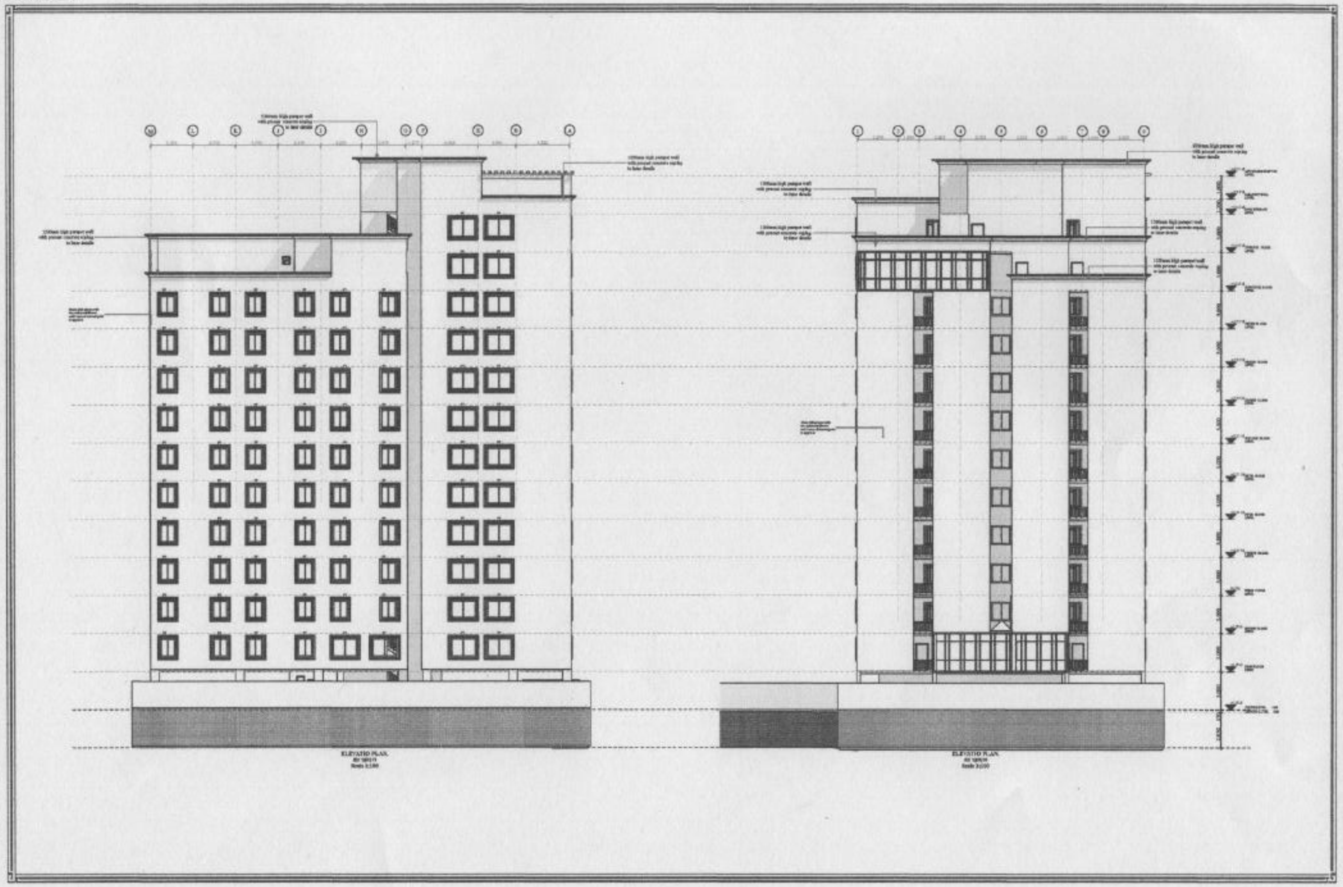

NOTES

GENERAL NOTES

REVISIONS,ADDITIONS & ALTERATIONS

NO	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

ON PLOT NO I.R.No.

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

ELEVATION PLAN,
Scale 1:100

PROJECT ARCHITECT

MOEZ .M. NAJMI
A1590
PO Box 156 -00600
Nairobi | Kenya

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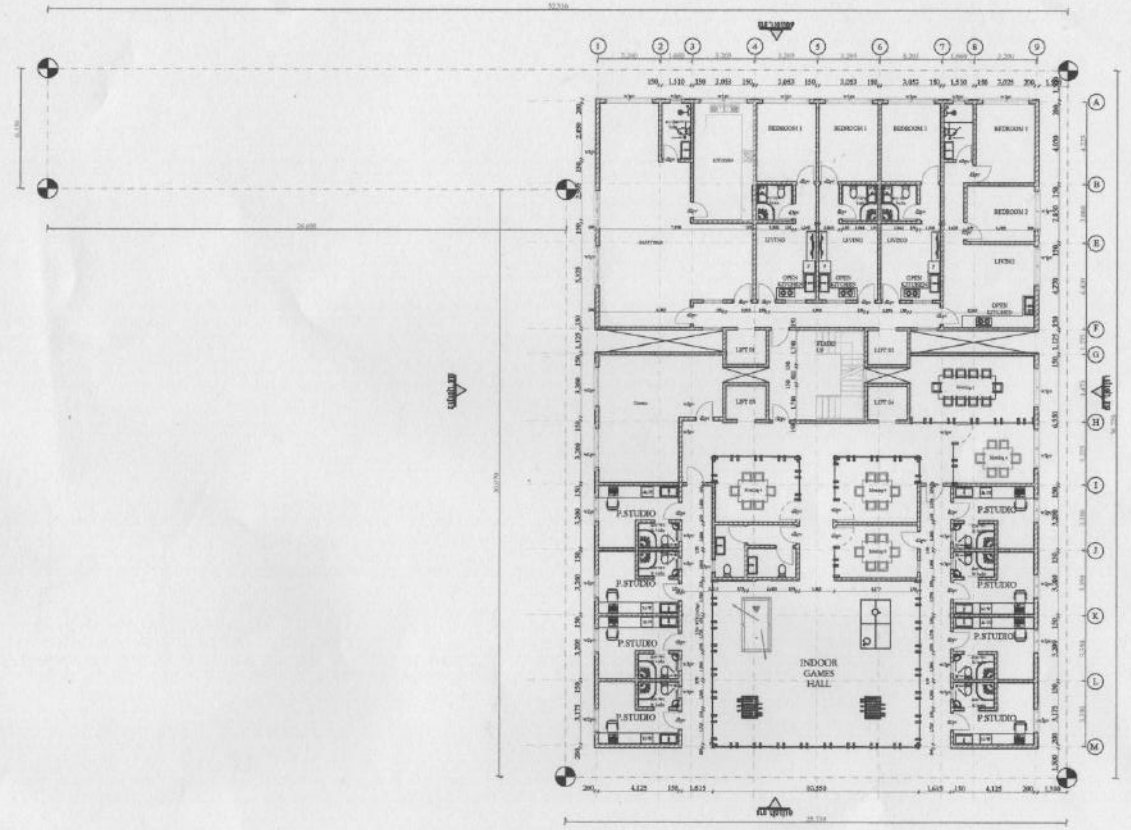

1ST FLOOR PLAN,
L(10)04
Scale 1;100

NOTES

GENERAL NOTES

REVISIONS, ADDITIONS & ALTERATIONS

NO	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

ON PLOT NO L.R.No. 209/8004

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

1ST FLOOR PLAN,
L(10)04
Scale 1;100

PROJECT ARCHITECT

MOIZ .M. NAJMI
A 1193
PO Box 156 -00600
Nairobi | Kenya

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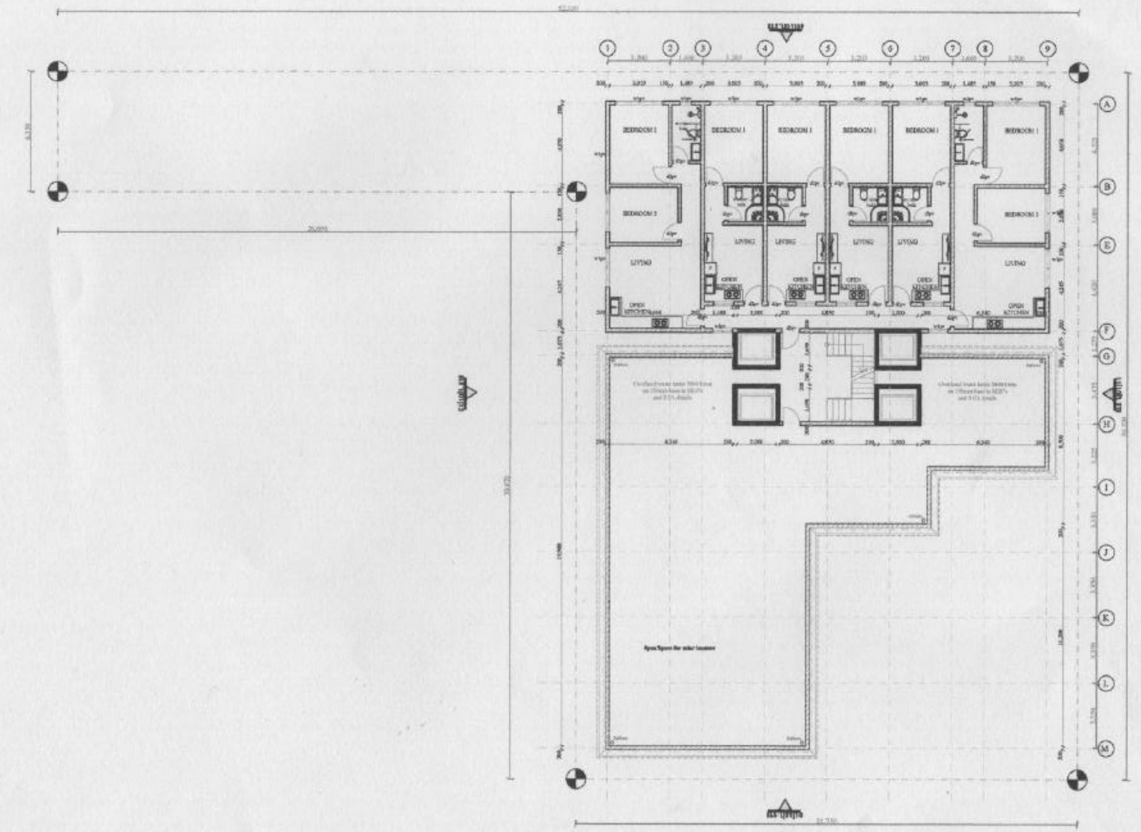

12TH FLOOR PLAN,
L[10]07
Scale 1:100

NOTES

GENERAL NOTES

REVISIONS ADDITIONS & ALTERATIONS

NO	DATE	DESCRIPTION	BY

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

ON PLOT NO L.R.No. 209/8904

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

12TH FLOOR PLAN,
L[10]07
Scale 1:100

PROJECT ARCHITECT

MOIZ .M. NAJMI
A1193
PO Box 156 -00600
Nairobi | Kenya

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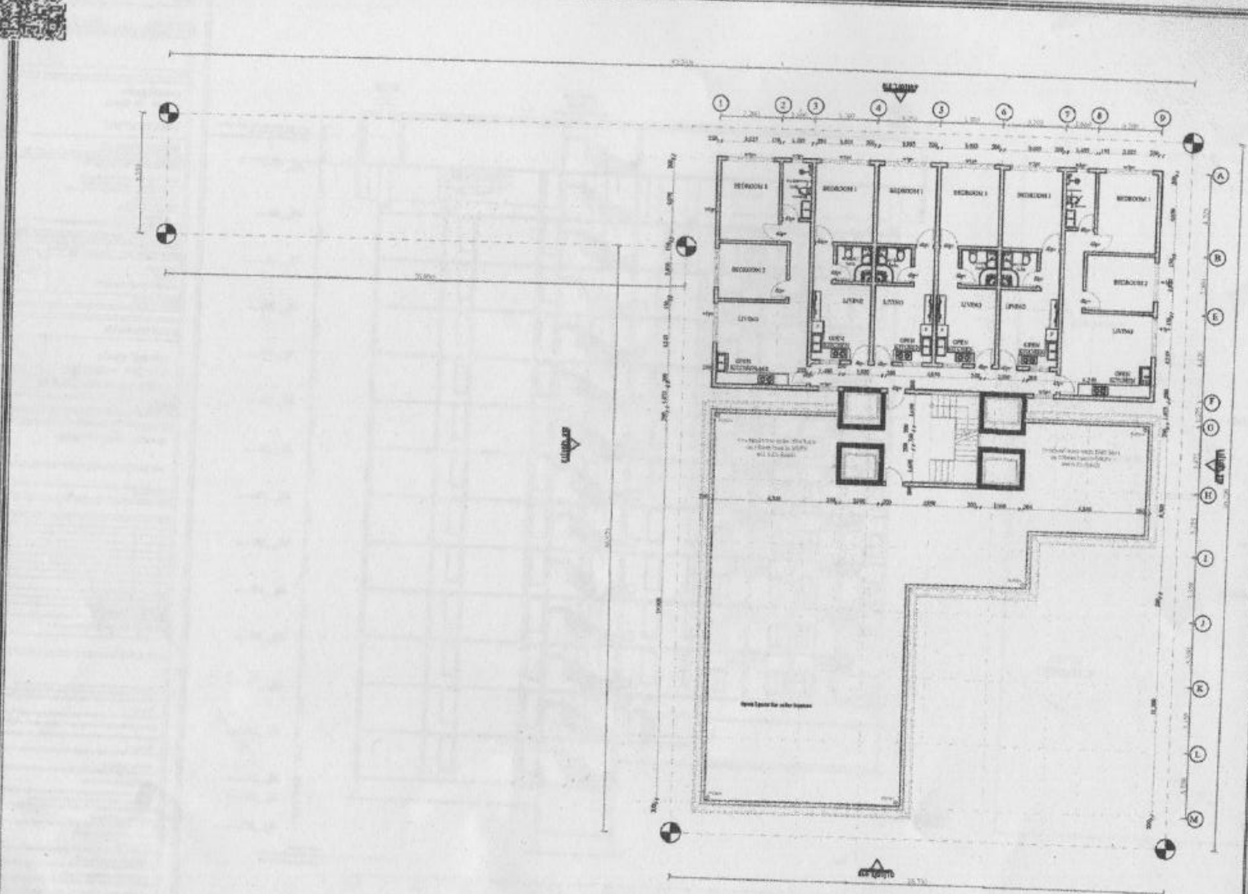

12TH FLOOR PLAN,
L(10)07
Scale 1:100

NOTES

GENERAL NOTES

REVISIONS ADDITIONS & ALTERATIONS

NO	DATE	DESCRIPTION

PROJECT

PROPOSED RESIDENTIAL APARTMENTS

CLIENT

BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE

PROJECT ARCHITECT

MOIZ .M. NAJMI
A 1193
PO Box 156 -00600
Nairobi | Kenya

CHECKED BY	DRAWN BY: RDAN
DATE: 11-11-20	SCALE: 1:100

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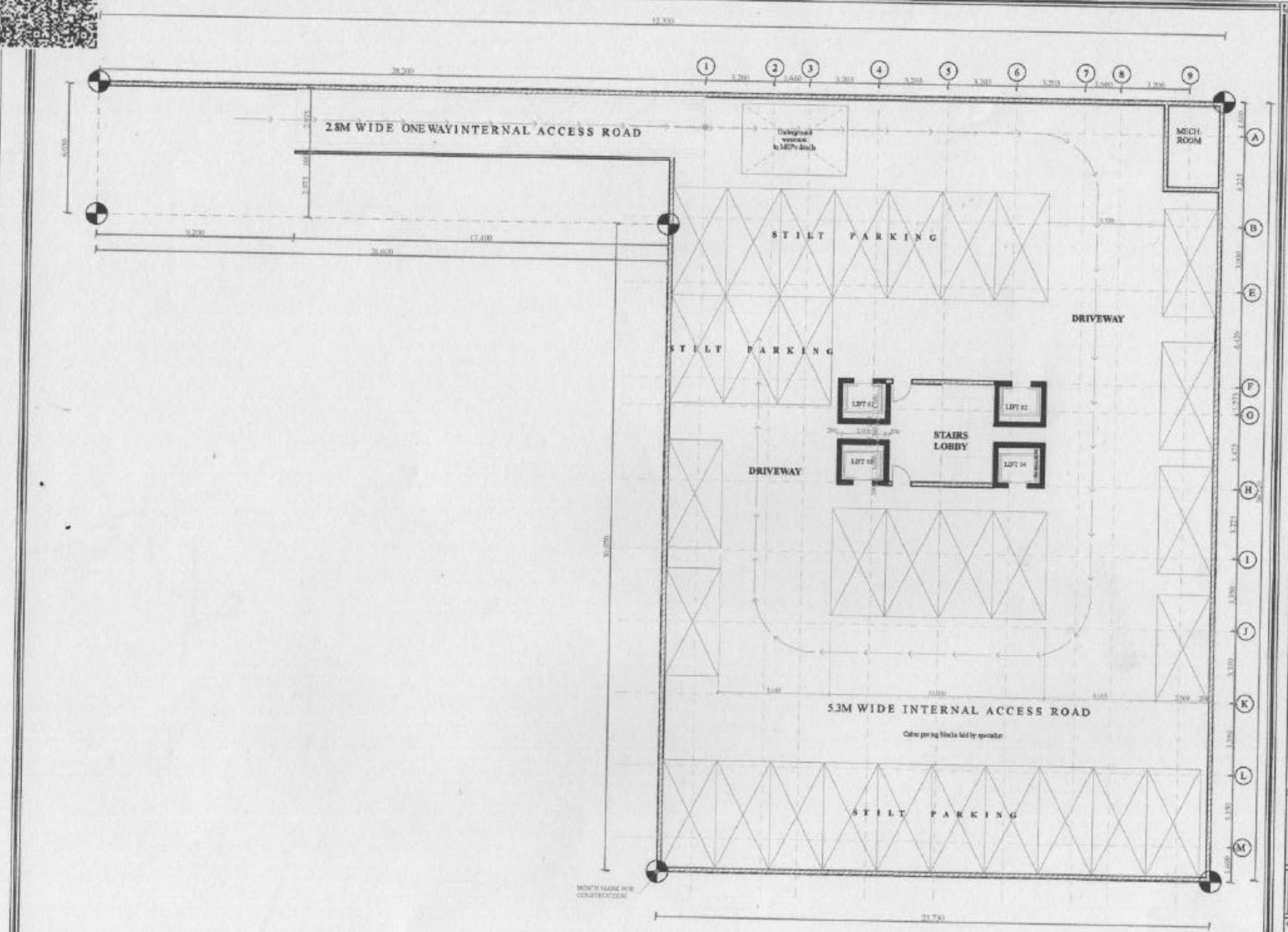

BASEMENT FLOOR PLAN,
L[10]02
Scale 1;100

NOTES

GENERAL NOTES

REVISIONS ADDITIONS & ALTERATIONS

NO.	DATE	DESCRIPTION	BY

PROJECT
PROPOSED RESIDENTIAL APARTMENTS
ON PLOT NO L.R.No. 209/8904

CLIENT
BESTVIEW HOLDINGS
P.O. Box - 4159-00506
Nairobi, Kenya

CLIENT SIGNATURE

SHEET TITLE
BASEMENT FLOOR PLAN,
L[10]02
Scale 1;100

PROJECT ARCHITECT
MOIZ .M. NAJMI
A 1193
PO Box 156 -00600
Nairobi | Kenya

CHECKED BY	DRAWN BY ROAN
DATE 11-11-20	SCALE 1:100
DRAWING NO.	
PAPER SIZE: A2	

BILLS OF QUANTITIES

FOR BEST VIEW HOLDINGS

Item	Description	Page No.	Amount
SUMMARY SCHEDULE OF MATERIALS (SHELL ONLY)			
1	BASEMENT 1 PARKING		12,240,956
2	GROUND FLOOR PARKING		8,610,176
3	1ST FLOOR		14,509,326
3	TYPICAL FLOOR 2nd to 10th		150,386,184
3	11th& 12th FLOOR		27,326,552
3	ROOF TOP / TERRACE FLOOR		3,546,920
4	MISCELLANEOUS		26,012,250
	TOTAL ESTIMATED COST OF MATERIALS	**KSHS**	**242,632,364**

Short Notes

Allowances for wastage have been made

Steel (Reinforcement) estimates allowed and shall be subject to bar bending schedules

Summary Schedule of Materials

Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	SUBSTRUCTURE LEVEL 1				
	Excavation	757	CM	5000	3,785,000.00
	Hardcore Backfilling	126	CM	1400	176,400.00
	50 mm Thick blinding to raft Ditto lift shafts	40	SM		
	Cement	100	Bags	750	75,000.00
	Sand	50	Tons	2,250	112,500.00
	Ballast	50	Tons	1,500	75,000.00
	Reinforced concrete **class 25/20**: vibrated: in.	678.2	Cm		
	Lift shaft & bases	25	Cm		
	Columns	25	Cm		
	Beams	164	Cm		
	Storm water	19	Cm		

	Carried to Collection				108,850

Item	Description	Qty	Unit	Rate	Amount (Kshs.)
	Sawn formwork: to				
A	Sides and soffits: beams	295	Sm		
B	Sides: columns	295	Sm		
C	Sides: lift shaft walls	15	Sm		
D	Soffits of slab	15	Sm		
E	Soffits of landings	2	Sm		
F	Sloping soffits of staircase	2	Sm		
G	Strings of staircase: cut to profile of steps: 300mm extreme;	22	Lm		
H	Risers: over 150 mm but not exceeding 225 mm girth	50	Lm		
	Marine Ply boards (2400x1200mm sizes) - 15% Allowed	310	No	3,600	1,116,000.00
	150 x 50mm joists / bearers for slab formwork - 15% Allowed	115	R.Ft	64	7,360.00
	50 x 50mm joists / bearers for columns formwork - 15% Allowed	106	R.Ft	30	3,180.00
	Gum poles to support slab formwork - 15% Allowed	67	R.Ft	8	536.00
	Carried to Collection				1,127,076

Item	Description	Qty	Unit	Rate	Amount (Kshs.)
	Walls				
	Machine cut natural stone: bedded, jointed and pointed in ceme				
A	200 mm Thick External walls	336	Sm		
B	200 mm Thick Internal walls	2536	Sm		
	Natural Foundation Stones in Running Feet	5657.00	Ft	50	282,850.00
	Cement	195	Bags	750	146,250.00
	Sand	98	Tons	2,250	220,500.00
c	Aluminum Windows	90	sm	6,000	540,000.00
	Wood Doors (37 Nos.) Size 0 .9 x 2.1	37	Nos.	8500	314500
	Railings (Balcony & Staircase)	46	LM	7000	322000
	Tiles Flooring	756	sm	1800	1360800

	Plumbing Points	2	Nos.	1500	3000
	Paint Internal	185	sft	300	55500
	Carried to Collection				1,281,250
	TOTAL FORGROUND FLOOR				**8,610,176.00**
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	CONCRETE				
	Reinforced concrete **class 25/20**: vibrated: in.				
A	Columns	25	Cm		
B	Beams	164	Cm		
C	Staircase	56	Cm		
	Cement	1535	Bags	750	1,151,250.00
	Sand	490	Tons	2,250	1,102,500.00
	Ballast	426	Tons	1,500	639,000.00
D	200mm thick solid slab	741	Sm		
F	150mm thick staircase landing	15	Sm		
G	200mm thick lift shaft walls	115	Sm		
	Cement	1735	Bags	750	1,301,250.00
	Sand	445	Tons	2,250	1,001,250.00
	Ballast	446	Tons	1,500	669,000.00
	Carried to Collection				5,864,250
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Reinforcement (Provisional)				
A	High tensile, square twisted bar reinforcement to BS 4461				
	Assorted bars	345	Kg	130	44,850.00
	Mesh fabric reinforcement to B.S 4483 and setting in concrete w				
B	Fabric ref. A142 weighing 2.22kg/sq.metre,in hollow pot				
	45Metre Rolls of A142Mesh (8Ft. Wide)	2	No.	32,000	64,000.00

	Carried to Collection				108,850
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Sawn formwork: to				
A	Sides and soffits: beams	295	Sm		
B	Sides: columns	295	Sm		
C	Sides: lift shaft walls	15	Sm		
D	Soffits of slab	15	Sm		
E	Soffits of landings	2	Sm		
F	Sloping soffits of staircase	2	Sm		
G	Strings of staircase: cut to profile of steps: 300mm extreme;	22	Lm		
H	Risers: over 150 mm but not exceeding 225 mm girth	50	Lm		
	Marine Ply boards (2400x1200mm sizes) - 15% Allowed	310	No	3,600	1,116,000.00
	150 x 50mm joists / bearers for slab formwork - 15% Allowed	115	R.Ft	64	7,360.00
	50 x 50mm joists / bearers for columns formwork - 15% Allowed	106	R.Ft	30	3,180.00
	Gum poles to support slab formwork - 15% Allowed	67	R.Ft	8	536.00
	Carried to Collection				1,127,076
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Walls				
	Machine cut natural stone: bedded, jointed and pointed in ceme				
A	200 mm Thick External walls	2524	Sm		
B	200 mm Thick Internal walls	2536	Sm		
	Natural Foundation Stones in Running Feet	183.00	Ft	50	9,150.00
	Cement	55	Bags	750	41,250.00
	Sand	2	Tons	2,250	4,500.00
c	Aluminum Windows	80	sm	8,000	640,000.00
	Railings (Balcony & Staircase)	46	LM	7000	322000
	Tiles Flooring	97	sm	1800	174600
	Electrical Points	25	Nos.	1250	31250

	TOTAL FOR BASEMENT 1 CARRIED TO SUMMARY				**12,240,956.00**
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	CONCRETE				
	Reinforced concrete **class 25/20**: vibrated: in.				
A	Columns	25	Cm		
B	Beams	164	Cm		
C	Staircase	56	Cm		
	Cement	1535	Bags	750	1,151,250.00
	Sand	425	Tons	2,250	956,250.00
	Ballast	426	Tons	1,500	639,000.00
D	200mm thick solid slab	741	Sm		
F	150mm thick staircase landing	24	Sm		
G	200mm thick lift shaft walls	15	Sm		
	Cement	1735	Bags	750	1,301,250.00
	Sand	545	Tons	2,250	1,226,250.00
	Ballast	546	Tons	1,500	819,000.00
	Carried to Collection				6,093,000
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Reinforcement (Provisional)				
A	High tensile, square twisted bar reinforcement to BS 4461				
	Assorted bars	345	Kg	130	44,850.00
	Mesh fabric reinforcement to B.S 4483 and setting in concrete w				
B	Fabric ref. A142 weighing 2.22kg/sq.metre, in hollow pot				
	45Metre Rolls of A142Mesh (8Ft. Wide)	2	No.	32,000	64,000.00

B	Sides : lift shaft bases	15	Sm		
C	Sides and soffits: beams	295	Sm		
D	Sides and soffits: storm water	38	Sm		
E	Sides: columns	295	Sm		
F	Sides: lift shaft walls	15	Sm		
G	Sides: foundation walls	15	Sm		
H	Soffits of slab	15	Sm		
I	Soffits of landings	2	Sm		
J	Sloping soffits of staircase	2	Sm		
K	Strings of staircase: cut to profile of steps: 300mm extreme;	22	Lm		
L	Risers: over 150 mm but not exceeding 225 mm girth	67	Lm		
	Marine Ply boards (2400x1200mm sizes) - 100% Allowed	310	No	3,600	1,116,000.00
	150 x 50mm joists / bearers for slab formwork - 100% Allowed	115	R.Ft	64	7,360.00
	50 x 50mm joists / bearers for columns formwork - 100% Allowed	106	R.Ft	30	3,180.00
	Gum poles to support slab formwork - 100% Allowed	67	R.Ft	8	536.00
	Carried to Collection				1,127,076

Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Walls				
	Machine cut natural stone: bedded, jointed and pointed in ceme				
A	200 mm Thick walls	36	Sm		
B	Ditto but skim walling	292	Sm		
	Natural Foundation Stones in Running Feet	36	Ft	50	1,800.00
	Cement	35	Bags	750	26,250.00
	Sand	2	Tons	2,250	4,500.00
	DPM				
C	Gauge 1000 polythene damp proof membrane (Water tank only)	50	Sm		
	60 Metre Rolls	2	No.	3,200	6,400.00
	Carried to Collection				38,950
	Collection				

	Carried to Collection				108,850

Item	Description	Qty	Unit	Rate	Amount (Kshs.)
	Sawn formwork: to				
A	Sides and soffits: beams	295	Sm		
B	Sides: columns	295	Sm		
C	Sides: lift shaft walls	15	Sm		
D	Soffits of slab	15	Sm		
E	Soffits of landings	2	Sm		
F	Sloping soffits of staircase	2	Sm		
G	Strings of staircase: cut to profile of steps: 300mm extreme;	22	Lm		
H	Risers: over 150 mm but not exceeding 225 mm girth	50	Lm		
	Marine Ply boards (2400x1200mm sizes) - 15% Allowed	310	No	3,600	1,116,000.00
	150 x 50mm joists / bearers for slab formwork - 15% Allowed	115	R.Ft	64	7,360.00
	50 x 50mm joists / bearers for columns formwork - 15% Allowed	106	R.Ft	30	3,180.00
	Gum poles to support slab formwork - 15% Allowed	67	R.Ft	8	536.00
	Carried to Collection				1,127,076

Item	Description	Qty	Unit	Rate	Amount (Kshs.)
	Walls				
	Machine cut natural stone: bedded, jointed and pointed in ceme				
A	200 mm Thick External walls	336	Sm		
B	200 mm Thick Internal walls	2536	Sm		
	Natural Foundation Stones in Running Feet	5657.00	Ft	50	282,850.00
	Cement	195	Bags	750	146,250.00
	Sand	98	Tons	2,250	220,500.00
c	Aluminum Windows	120	sm	6,000	720,000.00
	Wood Doors (60 Nos.) Size 0 .9 x 2.1	60	Nos.	8500	510000
	Railings (Balcony & Staircase)	46	LM	7000	322000
	Tiles Flooring	756	sm	1800	1360800

	Electrical Points	265	Nos.	1250	331250
	Plumbing Points	168	Nos.	5500	924000
	Wardrobes	58	LM	12000	696000
	Paint Internal	7570	sft	300	2271000
	Carried to Collection				7,409,150
	Collection				
	TOTAL FOR FIRST FLOOR				**14,509,326.00**
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	CONCRETE				
	Reinforced concrete **class 25/20**: vibrated: in.				
A	Columns	25	Cm		
B	Beams	164	Cm		
C	Staircase	56	Cm		
	Cement	1535	Bags	750	1,151,250.00
	Sand	425	Tons	2,250	956,250.00
	Ballast	426	Tons	1,500	639,000.00
D	200mm thick solid slab	741	Sm		
F	150mm thick staircase landing	15	Sm		
G	200mm thick lift shaft walls	115	Sm		
	Cement	1735	Bags	750	1,301,250.00
	Sand	545	Tons	2,250	1,226,250.00
	Ballast	546	Tons	1,500	819,000.00
	Carried to Collection				6,093,000
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Reinforcement (Provisional)				
A	High tensile, square twisted bar reinforcement to BS 4461				
	Assorted bars	345	Kg	130	44,850.00
	Mesh fabric reinforcement to B.S 4483 and setting in concrete w				
B	Fabric ref. A142 weighing 2.22kg/sq.metre,in hollow pot				
	45Metre Rolls of A142Mesh (8Ft. Wide)	2	No.	32,000	**64,000.00**

	Gum poles to support slab formwork - 15% Allowed	135	R.Ft	8	1,080.00
	Carried to Collection				918,420

Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Walls				
	Machine cut natural stone: bedded, jointed and pointed in ceme				
A	200 mm Thick External walls	840	Sm		
B	200 mm Thick Internal walls	125	Sm		
	Natural Foundation Stones in Running Feet	205.00	Ft	50	10,250.00
	Cement	285	Bags	750	213,750.00
	Sand	68	Tons	2,250	153,000.00
C	Wood Doors (7 Nos.) Size 0 .9 x 2.1	1	Nos.	12000	12000
	Railings (Balcony & Staircase)	9	LM	7000	63000
	Tiles Flooring	741	sm	1800	1333800
	Electrical Points	35	Nos.	1250	43750
	Plumbing Points	15	Nos.	10500	157500
	Paint Internal	245	sft	300	73500
	Carried to Collection				2,060,550
	SUB-TOTAL				**3,546,920.00**
	TOTAL FOR ROOF TOP CARRIED TO SUMMARY				**3,546,920.00**

F	150mm thick staircase landing	24	Sm		
	Hollow pots (200 x 200 x 400mm)	500	Pots	100	50,000.00
	Cement	50	Bags	750	37,500.00
	Sand	25	Tons	2,250	56,250.00
	Ballast	25	Tons	1,500	37,500.00
			Carried to Collection		470,000

Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Reinforcement (Provisional)				
A	High tensile, square twisted bar reinforcement to BS 4461				
	Assorted bars	15	Kg	130	1,950.00
	Mesh fabric reinforcement to B.S 4483 and setting in concrete w				
B	Fabric ref. A142 weighing 2.22kg/sq.metre,in hollow pot				
	45Metre Rolls of A142Mesh (8Ft. Wide)	3	No.	32,000	96,000.00
			Carried to Collection		97,950

Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Sawn formwork: to				
A	Sides and soffits: beams	145	Sm		
B	Sides: columns	75	Sm		
D	Soffits of slab	275	Sm		
E	Soffits of landings	5	Sm		
F	Sloping soffits of staircase	9	Sm		
G	Strings of staircase: cut to profile of steps: 300mm extreme;	11	Lm		
H	Risers: over 150 mm but not exceeding 225 mm girth	14	Lm		
	Marine Ply boards (2400x1200mm sizes) - 15% Allowed	245	No	3,600	882,000.00
	150 x 50mm joists / bearers for slab formwork - 15% Allowed	435	R.Ft	64	27,840.00
	50 x 50mm joists / bearers for columns formwork - 15% Allowed	250	R.Ft	30	7,500.00

	Wood Doors Size 0 .9 x 2.1	20	Nos.	8500	170000
	Railings (Balcony & Staircase)	46	LM	7000	322000
	Tiles Flooring	1190	sm	1800	2142000
	Electrical Points	265	Nos.	1250	331250
	Plumbing Points	75	Nos.	5500	412500
	Wardrobes	58	LM	12000	696000
	Paint Internal	3570	sft	300	1071000
	Carried to Collection				6,334,350
	SUB-TOTAL FOR 11TH FLOOR				**13,663,276.00**
	MULTIPLY BY 2 NO. TYPICAL FLOORS				**2**
	TOTAL FOR 2 NO. TYPICAL FLOORS CARRIED TO SUMMARY				**27,326,552.00**
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Paint External	20683	sft	750	15512250.00
	Generator	1	No.	1200000	1200000.00
	Lift	2	No.	3000000	6000000.00
	Staircase Glazing	275	sm	12,000	3300000.00
	Carried to Collection				26,012,250
	TOTAL FOR MISCELLANEOUS				**26,012,250.00**
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	CONCRETE				
	Reinforced concrete **class 25/20:** vibrated: in.				
A	Columns	50	Cm		
B	Beams	256	Cm		
C	Staircase	5	Cm		
	Cement	135	Bags	750	101,250.00
	Sand	60	Tons	2,250	135,000.00
	Ballast	35	Tons	1,500	52,500.00
D	200mm thick solid slab	275	Sm		
E	250mm thick hollow pot slab (Incl pots, 70mm thick topping and	475	Sm		

	45Metre Rolls of A142Mesh (8Ft. Wide)	2	No.	32,000	64,000.00
	Carried to Collection				108,850

Item	Description	Qty	Unit	Rate	Amount (Kshs.)
	Sawn formwork: to				
A	Sides and soffits: beams	295	Sm		
B	Sides: columns	295	Sm		
C	Sides: lift shaft walls	202	Sm		
D	Soffits of slab	15	Sm		
E	Soffits of landings	2	Sm		
F	Sloping soffits of staircase	2	Sm		
G	Strings of staircase: cut to profile of steps: 300mm extreme;	22	Lm		
H	Risers: over 150 mm but not exceeding 225 mm girth	50	Lm		
	Marine Ply boards (2400x1200mm sizes) - 15% Allowed	310	No	3,600	1,116,000.00
	150 x 50mm joists / bearers for slab formwork - 15% Allowed	115	R.Ft	64	7,360.00
	50 x 50mm joists / bearers for columns formwork - 15% Allowed	106	R.Ft	30	3,180.00
	Gum poles to support slab formwork - 15% Allowed	67	R.Ft	8	536.00
	Carried to Collection				1,127,076

Item	Description	Qty	Unit	Rate	Amount (Kshs.)
	Walls				
	Machine cut natural stone: bedded, jointed and pointed in ceme				
A	200 mm Thick External walls	336	Sm		
B	200 mm Thick Internal walls	2536	Sm		
	Natural Foundation Stones in Running Feet	5657.00	Ft	50	282,850.00
	Cement	195	Bags	750	146,250.00
	Sand	98	Tons	2,250	220,500.00
c	Aluminum Windows	90	sm	6,000	540,000.00

	Electrical Points	265	Nos.	1250	331250
	Plumbing Points	240	Nos.	5500	1320000
	Wardrobes	158	LM	12000	1896000
	Paint Internal	7570	sft	300	2271000
	Carried to Collection				9,380,650
	Collection				
	SUB-TOTAL FOR 2 NO. TYPICAL FLOOR				**16,709,576.00**
	MULTIPLY BY 9 NO. TYPICAL FLOORS				**9**
	TOTAL FOR 9 NO. TYPICAL FLOORS CARRIED TO SUMMARY				**150,386,184.00**
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	CONCRETE				
	Reinforced concrete **class 25/20**: vibrated: in.				
A	Columns	25	Cm		
B	Beams	164	Cm		
C	Staircase	56	Cm		
	Cement	1535	Bags	750	1,151,250.00
	Sand	425	Tons	2,250	956,250.00
	Ballast	426	Tons	1,500	639,000.00
D	200mm thick solid slab	741	Sm		
F	150mm thick staircase landing	15	Sm		
G	200mm thick lift shaft walls	115	Sm		
	Cement	1735	Bags	750	1,301,250.00
	Sand	545	Tons	2,250	1,226,250.00
	Ballast	546	Tons	1,500	819,000.00
	Carried to Collection				6,093,000
Item	*Description*	*Qty*	*Unit*	*Rate*	*Amount (Kshs.)*
	Reinforcement (Provisional)				
A	High tensile, square twisted bar reinforcement to BS 4461				
	Assorted bars	345	Kg	130	44,850.00
	Mesh fabric reinforcement to B.S 4483 and setting in concrete w				
B	Fabric ref. A142 weighing 2.22kg/sq.metre,in hollow pot				

Annexure8:
Questionaires

ENVIRONMENTAL IMPACT ASSESSMENT QUISTIONNAIRE FOR THE PROPOSED STUDENT HOSTEL CONSTRUCTION ON L.R. No 209/8904 IN PARKLANDS

INTRODUCTION

Green Kenya Investment Corporation has been commissioned by **BestView Holdings Ltd** to undertake an Environmental Impact Assessment for the proposed hostel construction. As per Environmental Laws, members of the public are supposed to participate and get involved in development projects because the project may affect them in one way or another. The exercise also ensures that the public views are adequately taken into consideration in the decision making process. In this regard, GKIC would like to get your views on this project as an affected party.

This questionnaire does not however bind any participant to the issues it will address and no participant under any circumstance is required to disclose any personal information in the content of the questionnaire.

NAME	DEVANS ORANGO HAMONGO
LOCATION/RESIDENCE	THIRD PARKLANDS – MPAKA ROAD
~~**INTITUTION**~~ **INSTITUTION**	PARKLANDS MOSQUE
CONTACTS	0720459966
SIGNATURE	
DATE	26/04/2022

1. In your opinion is the proposed construction of students hostel in Parklands necessary?

(a) YES: Give reasons

It is necessary because we've

many colleges and campuses in Parklands

(b) NO: Give reasons

2. The proposed project is likely to have both positive and negative impacts to the environment. Please indicate the perceived

Positive impacts

It will assist students who come from

far to stay near the college and thus

creat business establishment eg shops, barber shop

hotels and etc.

Negative impacts

① It might bring noise pollution,

② Traffic jam

③

3. Will the project affect you or your property in any way ?

YES (Explain)

.....

.....

.....

NO (Explain)

NO it will not affect us because our Muslim sisters & brothers in the institution will give humble time to come and worship Allah with us.

4. In your opinion, will the proposed hostel construction be of any economic benefits to the area residents?

(a) If it will benefit the residents, briefly state the benefits

① Business will come in.

② It will creat employment

③ Improvement of the roads in

.....

(b) If it will have no economic benefits to the area residents (indicate NO)

5. Do you perceive any conflict that could emerge between you/your institution and the proposed project. (YES), (NO)

(YES) explain

.....

.....

6. What would would like to see the project owner do in the implementation of the project to minimise or mitigate negative impacts of the project to the residents and the environment in general?

① To regulate the time of delivery of materials
② To minimise the noise pollution.
③ To put safety signs around the construction site
④ To have a crew which will control the traffic

7. Do you have any additional comment on the project that needs to be addressed?

① Make sure its just a one gender hostel i.e. separate for boys and girls'
②

8. What recommendation or opinions do you have for the project?

It is a good project which needs to be supported. In one way or another we'll gain some economic development.

THANK YOU FOR YOUR PARTICIPATION

ENVIRONMENTAL IMPACT ASSESSMENT QUISTIONNAIRE FOR THE PROPOSED STUDENT HOSTEL CONSTRUCTION ON L.R. No 209/8904 IN PARKLANDS

INTRODUCTION

Green Kenya Investment Corporation has been commissioned by **BestView Holdings Ltd** to undertake an Environmental Impact Assessment for the proposed hostel construction. As per Environmental Laws, members of the public are supposed to participate and get involved in development projects because the project may affect them in one way or another. The exercise also ensures that the public views are adequately taken into consideration in the decision making process. In this regard, GKIC would like to get your views on this project as an affected party.

This questionnaire does not however bind any participant to the issues it will address and no participant under any circumstance is required to disclose any personal information in the content of the questionnaire.

NAME	FATIMA
LOCATION/RESIDENCE	1ST PARKLAND AVENUE
~~**INTITUTION**~~ INSTITUTION	BAYINAH ACADEMY
CONTACTS	0762686458
SIGNATURE	
DATE	26/4/2022

1. In your opinion is the proposed construction of students hostel in Parklands necessary?

(a) YES: Give reasons

Yes, The Project will lead to improved Security

(b) NO: Give reasons

2. The proposed project is likely to have both positive and negative impacts to the environment. Please indicate the perceived

Positive impacts

Increased Revenue generation-once the ~~Plot~~ Project is completed the Plot will increase it's Value leading to more land rates Payable ~~more~~ to the County goverment.

Negative impacts

Noise Pollution

The Project will cause disturbance to immediate neighbours. Like dust

3. Will the project affect you or your property in any way ?

YES (Explain)

.....

.....

.....

NO (Explain)

No. because we are few meters away from the Site and therefore it will not affect us in any way.

4. In your opinion, will the proposed hostel construction be of any economic benefits to the area residents?

(a) If it will benefit the residents, briefly state the benefits

Availability of Jobs to the youths during construction.

Improved bussness

.....

(b) If it will have no economic benefits to the area residents (indicate NO)

5. Do you perceive any conflict that could emerge between you/your institution and the proposed project. (YES), (NO)

(YES) explain

No, I don't see any conflict with the institution

6. What would would like to see the project owner do in the implementation of the project to minimise or mitigate negative impacts of the project to the residents and the environment in general?

Install barries by use of Hessian cloth or Scaffarding net to prevent dust from disturbing neighbours and People Passing by.

7. Do you have any additional comment on the project that needs to be addressed?

NO

8. What recommendation or opinions do you have for the project?

No

THANK YOU FOR YOUR PARTICIPATION

ENVIRONMENTAL IMPACT ASSESSMENT QUISTIONNAIRE FOR THE PROPOSED STUDENT HOSTEL CONSTRUCTION ON L.R. No 209/8904 IN PARKLANDS

INTRODUCTION

Green Kenya Investment Corporation has been commissioned by **BestView Holdings Ltd** to undertake an Environmental Impact Assessment for the proposed hostel construction. As per Environmental Laws, members of the public are supposed to participate and get involved in development projects because the project may affect them in one way or another. The exercise also ensures that the public views are adequately taken into consideration in the decision making process. In this regard, GKIC would like to get your views on this project as an affected party.

This questionnaire does not however bind any participant to the issues it will address and no participant under any circumstance is required to disclose any personal information in the content of the questionnaire.

NAME	NANCY ODIMA
LOCATION/RESIDENCE	MSANAKA ROAD
~~**INTITUTION**~~ **INSTITUTION**	HERALD INTERNATIONAL SCH. PREPARATORY (NEW JUNIOR SCHOOL)
CONTACTS	0717285879
SIGNATURE	
DATE	26/04/2022

1. In your opinion is the proposed construction of students hostel in Parklands necessary?

(a) YES: Give reasons

Yes, because it will bring many benefits to us who are neighbours here.

(b) NO: Give reasons

N/A

2. The proposed project is likely to have both positive and negative impacts to the environment. Please indicate the perceived

Positive impacts

There will be improved businesses in the area because those people who have kiosks, shops will have many customers.

Improved security because the owner will employ 24 hours security guard and even he can install CCTV cameras

Negative impacts

Noise pollution during construction

air pollution that is emitting dust from the site during construction

3. Will the project affect you or your property in any way ?

YES (Explain)

.....

.....N/A.....

.....

NO (Explain)

No because this being a residential student hostel

it has no effect to our institution maybe

during construction but if the developer have mitigation measures to potential negative impacts

4. In your opinion, will the proposed hostel construction be of any economic benefits to the area residents?

(a) If it will benefit the residents, briefly state the benefits

Many benefits like creation of job opportunities to

the local youth during construction

Generation of revenue to government that is county government

because the developer will be paying land rates to county governm

(b) If it will have no economic benefits to the area residents (indicate NO)

5. Do you perceive any conflict that could emerge between you/your institution and the proposed project. (YES), (NO)

(YES) explain

.....NO conflict.....

.....

6. What would would like to see the project owner do in the implementation of the project to minimise or mitigate negative impacts of the project to the residents and the environment in general?

fencing site using scaffolding net and iron sheets
spray the dust area to surpress the dust
workers to ware PPE or personal protective equipment like ear muffs

7. Do you have any additional comment on the project that needs to be addressed?

The developer to strictly adhere to laws and rules given while developing the site

8. What recommendation or opinions do you have for the project?

NO

THANK YOU FOR YOUR PARTICIPATION

ENVIRONMENTAL IMPACT ASSESSMENT QUISTIONNAIRE FOR THE PROPOSED STUDENT HOSTEL CONSTRUCTION ON L.R. No 209/8904 IN PARKLANDS

INTRODUCTION

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This questionnaire does not however bind any participant to the issues it will address and no participant under any circumstance is required to disclose any personal information in the content of the questionnaire.

NAME	SUSAN KAMUTU
LOCATION/RESIDENCE	PARKLANDS OFF MPAKA ROAD
~~**INTITUTION**~~ INSTITUTION	HIGHRIDGE PRIMARY SCHOOL
CONTACTS	0762243105
SIGNATURE	
DATE	26/4/2022

1. In your opinion is the proposed construction of students hostel in Parklands necessary?

(a) YES: Give reasons

YES BECAUSE IT WILL COME WITH MANY BENEFITS LIKE EMPLOYMENT TO OUR YOUTHS, IMPROVED ECONOMY IN THE AREA.

(b) NO: Give reasons

2. The proposed project is likely to have both positive and negative impacts to the environment. Please indicate the perceived

Positive impacts

AVAILABILITY OF EMPLOYMENT APPOIUNITIES FOR EXAMPLE TO CASUAL WORKERS AND OTHER SKILLED WORKERS SUCH AS BUILDING AND CONSTRUCTION ENGINEERS. MORE STUDENTS WILL ENROL IN SCHOOLS BECAUSE OF ACCOMMODATION AVAILABILITY.

Negative impacts

NOISE POLLUTION.

AIR POLLUTION.

3. Will the project affect you or your property in any way ?

YES (Explain)

~~NO~~.....

.....

.....

NO (Explain)

NO. IT WILL NOT HAVE ANY EFFECT TO OUR SCHOOL.
THIS SHOWS THE AREA IS DEVELOPING AND IT WILL
LEAD TO INCREASED ENROLMENT OF UNIVERSITY STUDENTS

4. In your opinion, will the proposed hostel construction be of any economic benefits to the area residents?

(a) If it will benefit the residents, briefly state the benefits

IMPROVEMENT OF INFORMAL SECTORS e.g. FOOD VENDORS WILL
BENEFIT DIRECTLY FROM CONSTRUCTION WORKERS BUYING
FOOD AND OTHER COMMODITIES FROM THEM.

.....

(b) If it will have no economic benefits to the area residents (indicate NO)

5. Do you perceive any conflict that could emerge between you/your institution and the proposed project. (YES), (NO)

(YES) explain

NO.

.....

6. What would would like to see the project owner do in the implementation of the project to minimise or mitigate negative impacts of the project to the residents and the environment in general?

IRRIGATE THE SITE TO SUPPRESS DUST

THE DEVELOPER SHOULD USE MACHINE OR EQUIPMENTS THAT DO NOT PRODUCE MUCH NOISE.

WORKERS TO USE PROTECTIVE EQUIPMENTS/GARMENTS.

ENSURE STUDENTS DONT DUMP WASTE EVERYWHERE

7. Do you have any additional comment on the project that needs to be addressed?

NO.

8. What recommendation or opinions do you have for the project?

NO.

THANK YOU FOR YOUR PARTICIPATION

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NAME	Geoffry Odour
Designation/Location/Residence	NGori
CONTACTS	0792559928
DATE	11/04/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

There will be Jobs for Youth in this area when the construction starts.

Improved business in the area

2. What do you think will be the negative environmental, social and economic impacts of the project

Noise Pollution

3. What would you like to see the project owner do in the implementation of the project

The owner should fence the area using iron sheets to reduce noise pollution

4. Any other comment

Thank you

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NAME	Victor Manyeki
Designation/Location/Residence	2nd parkland westland
CONTACTS	0701164311
DATE	11/4/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

The project will create more opportunities to the local communities like creation of jobs during construction - Business

2. What do you think will be the negative environmental, social and economic impacts of the project .....

Pollution that is noise and air pollution

3. What would you like to see the project owner do in the implementation of the project

Protect the workers by providing them with ear muffs to reduce noise and also fence the site

4. Any other comment.....

Thank you

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NAME	NICHOLAS MWANGANGI
Designation/Location/Residence	ONE PARK PLACE AREA
CONTACTS	0705099974
DATE	11/24/2022.

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

This project will create employment to the youth in the area

More improved security in the area

2. What do you think will be the negative environmental, social and economic impacts of the project

Pollution is the main negative impact such as noise pollution air pollution

3. What would you like to see the project owner do in the implementation of the project

The developer should fence the site to reduce noise in the area

4. Any other comment

Thank you

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NAME	Daniel Onyango Awiti
Designation/Location/Residence	First Parkland area
CONTACTS	0112363290
DATE	11/4/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

The project will bring many benefits like creation of employment opportunities to the youth, more businesses will be created like providing lunch to the workers.

2. What do you think will be the negative environmental, social and economic impacts of the project The most negative impacts is noise and air pollution during construction

3. What would you like to see the project owner do in the implementation of the project

Regular irrigation to reduce the dust

4. Any other comment.....

Thank you

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NAME	Alex Muguna
Designation/Location/Residence	1st Parkland
CONTACTS	0716289708
DATE	11/4/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

I will have ~~any~~ many customers thus Improved business High security

2. What do you think will be the negative environmental, social and economic impacts of the project

Noise from Students after construction and Seasonal noise Pollution during Construction

3. What would you like to see the project owner do in the implementation of the project

Fence the site to reduce noise Pollution

4. Any other comment.....

Thank you

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NAME	ABDIRIZACK IBRAHIM SALAT
Designation/Location/Residence	SRI Murugan Koili Nairobi
CONTACTS	0729 87 2228
DATE	09/04/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

- There will bt creation of more jobs.
- This will lead to increased income.
- More bussiness opportunities will be created.
- Student accomodation

2. What do you think will be the negative environmental, social and economic impacts of the project ..... Population increase

If the Projct is not well Constructed, it will lead to loss of Property and life.

3. What would you like to see the project owner do in the implementation of the project

The owners should ~~the~~ Ensure the project is well vetted to prevent any loss of Property and life.

4. Any other comment.....

Thank you

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NAME	Wycliffe Siling.
Designation/Location/Residence	Administrator Excel College'
CONTACTS	0724800900.
DATE	9/11/2022.

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

- Since we are a college we will have students to our college; improved security increase property value.

2. What do you think will be the negative environmental, social and economic impacts of the project ...

- Air pollution; Noise
- Pressure on water reso.

3. What would you like to see the project owner do in the implementation of the project

- Try and fence around the area
- To be irrigating to avoid dust.
- Job priority to the local youths

4. Any other comment...

Thank you

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NAME	NELSON CHARLES
Designation/Location/Residence	CITAM CHURCH
CONTACTS	0723281795
DATE	04/04/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

① NEW CHURCH MEMBERS

② EMPLOYEMENT TO LOCAL COMMUNITY.

2. What do you think will be the negative environmental, social and economic impacts of the project

AIR POLLUTION

NOISE POLLUTION

3. What would you like to see the project owner do in the implementation of the project

FENCING THE SITE

4. Any other comment.....

Thank you

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NAME	EVANS WAFULA
Designation/Location/Residence	OME PARK PHASE
CONTACTS	0701533916
DATE	11/4/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

Creation of job opportunities

Improved businesses in the area

2. What do you think will be the negative environmental, social and economic impacts of the project ~~The project~~ During construction there will

- be alot of noise pollution and air pollution

3. What would you like to see the project owner do in the implementation of the project

- The owner to be irrigating the site to reduce dust

- Fence the site to reduce noise pollution

4. Any other comment.....

Thank you

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NAME	Amos Simiyu
Designation/Location/Residence	Ngori
CONTACTS	0732843376
DATE	11/04/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

How members in the community thus strong community ties

Improved Security because of the presence of students in the area

2. What do you think will be the negative environmental, social and economic impacts of the project Noise pollution and air pollution

Bad virtues maybe noticed in the area because of new students

3. What would you like to see the project owner do in the implementation of the project

Fence the Site

High Security personnel

4. Any other comment

Thank you

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NAME	ELIESOPHAT ULUMA WANDIRI
Designation/Location/Residence	SRI MURUGAN KOIL
CONTACTS	0768 744 284
DATE	9/04/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

Improved Neighbourhood and enabling affordable housing enhanced Sense of Place or Sence of Community improved bussiness in the Area.

2. What do you think will be the negative environmental, social and economic impacts of the project high level of Pollution Such as noise Pollution which may affect workers and it may make the workers become deaf.

3. What would you like to see the project owner do in the implementation of the project

- Fence the Site to reduce the dust/noise Pollution,
- Workers to wear ear muffs for noise reduction.

4. Any other comment.....

Thank you

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NAME	Francis Masinde
Designation/Location/Residence	Ndovu Ahmed lane/
CONTACTS	0782978463
DATE	9/04/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

Creation of jobs

improve business

2. What do you think will be the negative environmental, social and economic impacts of the project .....

seasonal noise pollution during construction

dust / air .

3. What would you like to see the project owner do in the implementation of the project

fencing of the site for prevention of dust / air pollution

Coordinating with the immediate neighbourg

4. Any other comment..... good development.

Thank you

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NAME	Warren Ashihundy
Designation/Location/Residence	2nd parkland
CONTACTS	0799074601
DATE	11/4/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

It will led to improved business in area because my kiosk will have many clients and also the institution around will have new member like CITAM church, Bayinah academy.

2. What do you think will be the negative environmental, social and economic impacts of the project

House pollution and air pollution during construction

3. What would you like to see the project owner do in the implementation of the project

Fence the site

4. Any other comment

Thank you

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NAME	Samson Mutoko
Designation/Location/Residence	One Park Place
CONTACTS	0712159 393
DATE	11/04/2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

① Creation of employment.
② Improved business in the area.

2. What do you think will be the negative environmental, social and economic impacts of the project

Noise pollution and air pollution during Construction.

3. What would you like to see the project owner do in the implementation of the project

To react to the above pollution effects.

4. Any other comment

Thank you

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NAME	MP Shah hospital
Designation/Location/Residence	CANCER CARE, KENYA
CONTACTS	0727844882 / 0737844882
DATE	11.04.2022

1. In your own opinion what are the probable positive environmental, social and economic impacts of the project

- Creation of job opportunities
- Enhancing socialization

2. What do you think will be the negative environmental, social and economic impacts of the project

- Noise pollution.
- Soil pollution.

3. What would you like to see the project owner do in the implementation of the project

- put up measures to minimise noise pollution.
- use safe materials to avoid environmental pollution
- to not dump building materials in the river.

4. Any other comment. - limit working to weekdays only. Weekends majority of residents are relaxing in their homes.

Thank you

Annexure9:Screening Checklist

SCREENING CHECKLIST

INSTRUCTIONS

This checklist is designed to help users decide whether EIA is required based on the characteristics of a project and its environment.

Start by providing a brief description of the project.

Then using available information about the project answer each question in Column 2:

- Yes - if the answer is yes
- No - if the answer is no
- ? - If the answer is don't know

Questions to be considered (For further guidance on factors to be considered see the more detailed questions listed in Scoping Guidance	Yes/ No/? Briefly describe	Is it likely to result in a significant effect? Yes/ No/? - Why?
Project Brief Description:		
1. Will the construction, operation or decommissioning of the project involve actions which will cause physical changes in the locality (topography, land use, changes in water bodies, etc)?	NO	NO
2. Will construction or operation of the project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?	YES	NO land & Natural Resources will be used.
3. Will the project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?	NO	NO
4. Will the project produce solid wastes during construction or		

18. Is the project in a location where it is likely to be visible to many people?	YES.	
19. Are there any areas or features of historic or cultural importance on or around the location which could be affected by the project?	NO	NO
20. Is the project located in a previously undeveloped area where there will be loss of Greenfield land?	NO	There is a existing Structure NO
21. Are there existing land uses on or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the project?	Yes ~~No~~ There are Private Property but the Project will not affect them.	NO
22. Are there any plans for future land uses on or around the location which could be affected by the project?	NO	Similar Development in the Area. NO
23. Are there any areas Are there any plans for future land uses on or around the location which are densely populated or built-up, which could be affected by the project?	NO	NO
24. Are there any plans for future land uses on or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected by the project?	Yes.	Hospitals & Schools available. NO
25. Are there any plans for future		

land uses on or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?	NO	NO
26. Are there any plans for future land uses on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the project?	NO	NO
27. Is the project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperatures inversions, fogs, severe winds, which could cause the project to present environmental problems?	NO	NO

Summary of features of the project and of its location indicating the need for EIA

could be affected by the project?		
12. Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other water bodies, the coastal zone, mountains, forests or woodlands, which could be affected by the project?	NO	NO
13. Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the project?	NO	NO
14. Are there any inland, coastal, marine or underground waters on or around the location which could be affected by the project?	NO	NO
15. Are there any areas or features of high landscape or scenic value on the location which could be affected by the project?	NO	NO
16. Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the project?	NO	NO
17. Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	Yes	There could be traffic during construction & Occupation Phase

operation or decommissioning?	Yes	
5. Will the project release pollutants or any hazardous, toxic or noxious substances to air?	Yes.	NO Dust can be mitigated.
6. Will the project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	YES	NO Noise & Vibration can be mitigated
7. Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground or into the surface waters, groundwater, coastal waters or the sea?	NO	NO
8. Will there be any risk of accidents during construction or operation of the project which could affect human health or the environment?	Yes.	Accidents during construction phase can be mitigated.
9. Will the project result in social changes, for example, in demography, traditional lifestyles, employment?	NO	employment Yes.
10. Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?	NO	NO
11. Are there any areas around the location which are protected under the international or national or local legislation for their ecological, landscape, cultural or other value, which	NO	NO

Annexure 10: Scoping Checklist

EIA SCOPING CHECKLIST

Instructions

This checklist is designed to help users identify the likely significant environmental effects of proposed projects during scoping. It is to be used in conjunction with the Checklist of Criteria for Evaluating the Significance of Impacts. There are two stages:

- First, identifying the potential impacts of projects;
- Second selecting those which are likely to be significant and therefore require most attention in the assessment.

A useful way of identifying the potential impacts of a project is to identify all the activities or sources of impact that could arise from construction, operation or decommissioning of the project, and to consider these alongside the characteristics of the project environment that could be affected, to identify where there could be interactions between them.

- Yes - if the activity is likely to occur during implementation of the project;
- No - if it is not expected to occur;
- ? - If it is uncertain at this stage whether it will occur or not.

For each activity for which the answer in Column 2 is “Yes” or “?”, refer to the second part of the Scoping Checklist which lists characteristics of the project environment which could be affected, and identify any which could be affected by that activity. Information will be needed about the surrounding environment in order to complete this stage. Note the characteristics of the project environment that could be affected, and the nature of the potential effects in Column 3.

Finally, use Checklist of Criteria for Evaluating the Significance of Impacts to help complete Column 4. This will identify those impacts which are expected to be significant. The questions are designed so that a “yes” answer will point towards a significant impact. It is often difficult to decide what is or is not significant but a useful simple check is to ask whether the effect is one that is of sufficient importance that it ought to be considered and have an influence on the development consent decision. As much information as possible about the degree of significance should be included in Column 4 as a guide for planning the environmental studies.

PART 1: QUESTIONS ON PROJECT CHARACTERISTICS

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
1.	**Will construction, operation or decommissioning of the project involve actions which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)?**			
1.1	Permanent or temporary change in land use, landcover or topography including increases in intensity of land use?	**YES**	**The construction phase will involve excavation activities**	**NO**
1.2	Clearance of existing land, vegetation and buildings?	**YES**	**Existing building will be demolished. Grass and few tree species will be cleared too**	**NO** Cleared vegetation will be re-vegetated through establishment of roof top garden
1.3	Creation of new land uses?	**No**		**No**, the project is in conformity with the existing land use
1.4	Pre-construction investigations e.g. boreholes, soil testing?	**Yes**		**No**
1.5	Construction works?	**Yes**	**Air, sound pollution and accidents**	**No** **Mitigation measures will be put in place to mitigate against dust,noise and accidents**
1.6	Demolition works?	**Yes**	**Air, noise pollution and accidents**	**No** **Mitigation measures will be put in place to mitigate against dust,noise and accidents**
1.7	Temporary sites used for construction or housing of construction workers?	**Yes**		**No**
1.8	Above ground buildings, structures or earthworks	**Yes**	**Air and noise pollution**	**No** Mitigation

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
	including linear structure, cut and fill or excavation?			measures will be put in place
1.9	Underground works including mining or tunneling?	No		
1.10	Reclamation works?	No		
1.11	Dredging?	No		
1.12	Coastal structures e.g. seawalls, piers?	**No**		
1.13	Offshore structures?	**No**		
1.14	Production and manufacturing processes?	**No**		
1.15	Facilities for storage of goods or materials?	**No**		
1.16	Facilities for treatment or disposal of solid wastes or liquid effluents?	**No**		
1.17	Facilities for long term housing of operational workers?	**Yes**		**No**
1.18	New road, rail or sea traffic during construction or operation?	**No**		
1.19	New road, rail, air, waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	**No**		
1.20	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	**No**		
1.21	New or diverted transmission lines or pipelines?	**No**		
1.22	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	**No**		
1.23	Stream crossings?	**No**		
1.24	Abstraction or transfers of water from ground or surface waters?	**No**		

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
1.25	Changes in waterbodies or the land surface affecting drainage or runoff?	**No**		
1.26	Transport of personnel or materials for construction, operation or decommissioning?	**Yes**	**Air and sound pollution** **Increased road traffic**	**No** The vehicles will operate for a limited time (construction phase only)
1.27	Long term dismantling or decommissioning or restoration works?	**Yes**	**Air and sound pollution** **Waste in form of demolition debris**	**No.** After decommissioning the land will be rehabilitated by planting of vegetation cover . Debris will be disposed in designated waste disposal site and some re-used
1.28	Ongoing activity during decommissioning which could have an impact on the environment?	**No**	**Air and noise pollution**	**No** Mitigation measures will be used
1.30	Introduction of alien species?	**No**		
1.31	Loss of native species or genetic diversity?	**No**		
1.32	Any other actions?	**No**		
2. Will construction or operation of the project use natural resources which as land, water, materials or energy, especially any resources which are non-renewable or in short supply?				
2.1	Land especially undeveloped or agricultural land?	**No**		
2.2	Water?	**Yes**	**Water use**	**No.** Rain Water harvesting and borehole are recommended to supplement water supplied

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
2.3	Minerals?	**No**		
2.4	Aggregates?	**No**		
2.5	Forests and timber?	**Yes**	**Timber**	**No** **Only small amounts of timber will be used during construction for shuttering**
2.6	Energy including electricity?	**Yes**	**Energy**	**No** Wind or solar energy recommended to supplement the mains
2.7	Any other resources?	**No**		
3. Will the project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?				
3.1	Will the project involve use of substances or materials which are hazardous or toxic to human health or the environment (flora, fauna, and water supplies)?	**No**		
3.2	Will the project result in changes in occurrence of diseases or affect disease vectors (e.g. insect or water borne disease)?	**No**		
3.3	Will the project affect the welfare of people by changing living conditions?	**Yes**	**Employment during the three phases**	**Yes** People will be employed in the project Informal sector will mushroom (food providers)
3.4	Are there especially vulnerable groups of people who could be affected by the project e.g.	**No**		

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
	hospital patients, the elderly?			
3.5	Any other causes?	**No**		
4. Will the project produce solid wastes during construction or operation or decommissioning?				
4.1	Spoil, overburden or mine wastes?	**No**		
4.2	Municipal waste (household and or commercial wastes)?	**Yes**	**Household and construction waste**	**No** Waste produces during the three phases of the project will be handled as per waste disposal regulations by licensed handlers
4.3	Hazardous or toxic wastes (including radioactive wastes)?	**No**		
4.4	Other industrial process wastes?	**No**		
4.5	Surplus product?	**No**		
4.6	Sewage sludge or other sludge from effluent treatment?	**No**		
4.7	Construction or demolition wastes?	**Yes**	**Construction and demolition waste**	**No** All construction and demolition waste will be handled as per waste disposal policies by a licensed waste handler
4.8	Redundant machinery or equipment?	**No**		
4.9	Contaminated soils or other material?	**No**		
4.10	Agricultural wastes?	**No**		
4.11	Any other solid wastes?	**No**		
5. Will the project release pollutants or any hazardous, toxic or noxious substances to air?				
5.1	Emissions from combustion of fossil fuels from stationary or	**Yes**	**Air pollution**	**No** Machinery and

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
	mobile sources?			vehicles used in the project will be services regularly. They will also be switched off when not in use
5.2	Emissions from production processes?	**No**		
5.3	Emissions from materials handling including storage or transport?	**No**		
5.4	Emissions from construction activities including plant and equipment?	**No**		
5.5	Dust or odors from handling of materials including plant equipment?	**Yes**	**Air pollution**	**No** Dust produced during commissioning and decommissioning will be mitigated by scaffolding the site and sprinkling water
5.6	Emissions from incineration of waste?	**No**		
5.7	Emissions from burning of waste in open air (e.g. slash material, construction debris)	**No**		
5.8	Emissions form any other sources?	**No**		
6. **Will the project cause noise and vibration or release of light, heat energy or electromagnetic radiation?**				
6.1	From operation of equipment e.g. engines, ventilation plant, crushers?	**Yes**	**Noise**	**No** Operations will be limited to day time hours from 8.00am to 5.00 pm and no operations on Sundays and public holidays PPEs will be

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
				provided to workers
6.2	From industrial or similar processes?	**No**		
6.3	From construction or demolition?	**Yes**	**Noise**	**No** Operations will be limited to day time hours from 8.00am to 5.00 pm and no operations on Sundays and public holidays PPEs will be provided to workers
6.4	From blasting or piling?	**No**		
6.5	From construction or operational traffic?	**Yes**	Noise	**No** Operations will be limited to day time hours from 8.00am to 5.00 pm and no operations on Sundays and public holidays Ppes will be provided for workers
6.6	From lighting or cooling systems?	**No**		
6.7	From sources or electromagnetic radiation (considers effects nearby sensitive equipment as well as people)?	**No**		
6.8	From any other sources?	**No**		
7. **Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground or into sewers, surface waters, ground waters, coastal waters or the sea?**				
7.1	From handling, storage, use or spillage of hazardous or toxic materials?	**No**		

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
7.2	From discharge of sewage or other effluents (whether treated or untreated) to water or the land?	**No**		
7.3	By deposition of pollutants emitted to air, onto the land or into water?	**No**		
7.4	From any other sources?	**No**		
7.5	Is there a risk of long term buildup of pollutants in the environment from these sources?	**No**		
8.	**Will there be any risk of accidents during construction or operation of the project which could affect human health or the environment?**			
8.1	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous or toxic substances?	**No**		
8.2	From events beyond limits of normal environmental protection e.g. failure of pollution control system?	**No**		
8.3	From any other causes?	**No**		
8.4	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslip, etc.)?	**No**		
9.	**Will the project result in social changes, for example, in demography, traditional lifestyles, employment?**			
9.1	Changes in population size, age, structure, social groups etc.?	**Yes**	**Population size**	**Yes** Area population will increase during construction and occupation phase
9.2	By resettlement of people or demolition of homes or communities or community facilities e.g. schools, hospitals, social facilities?	**No**		

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
9.3	Through in-migration of new residents or creation of new communities?	**Yes**	**demography**	**Yes** During occupation there will be inflow of new residents
9.4	By placing increased demands on local facilities or services e.g. housing, education, health?	**Yes**	**Health**	**Yes** New residents will put pressure on existing health facilities
9.5	By creating jobs during construction or operation or causing the loss of jobs with effects on unemployment and the economy?	**Yes**	**Employment**	**Yes** Temporary jobs will be created during and permanent jobs during occupation
9.6	Any other causes?			
10.	**Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?**			
10.1	Will the project lead to pressure for consequential development which could have significant impact on the environment e.g. more housing, new roads, new supporting industries or utilities, etc.?	**No**		
10.2	Will the project lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.? • Housing development • Extractive industries • Supply industries • Other?	**No**		

No.	Questions to be considered in the scoping process	Yes/No /?	Which characteristics of the project environment could be affected and how?	Is the effects likely to be significant? Why?
10.3	Will the project lead to after-use of the site which could have an impact on the environment?	**No**		
10.4	Will the project set a precedent for later developments?	**Yes**		
10.5	Will the project have cumulative effects due to proximity to other existing or planned projects with similar effects?	**No**		

Annexure 11: Contract letter

BESTVIEW HOLDINGS LTD

5th April 2022

Dear Sir

CONSULTANCY ON ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF STUDENTS HOSTEL IN PARKLANDS, NAIROBI COUNTY

We write to inform you that your firm has been commissioned to undertake consultancy services on Environmental Impacts Assessment for the proposed construction of students hostel on L.R. NO. 209/8904 in Parklands, Nairobi County.

The main terms are as follows:

1. Consultancy fees, Kes. 600,000.00 to be paid upon submission of the EIA report to NEMA.
2. The engagement period should not exceed 28 working days.
3. The consultant will be expected to submit the final report to NEMA not later than 29th April 2022.

Time is of essence. You should commence the service immediately upon receipt of this letter.

Yours Sincerely,

Khuzeima Ezzi

Director