

**ENVIRONMENTAL IMPACT ASSESMENT STUDY REPORT FOR THE PROPOSED HEARAN HOTEL  
NAIROBI ON PLOT L.R. NO 1/356 ALONG LENANA ROAD, KILIMANI NAIROBI COUNTY GPS  
CORDINATES LATITUDE -1.289252, LONGITUDE 36.788737**



*Proposed project site with the black gate*

**PROJECT PROPONENT  
HEARAN ENTERPRISE LIMITED  
P.O BOX 21400-00505  
NAIROBI**

**EIA PROJECT REPORT PREPARED BY:**

**KARURU CHEGE EIA/EA LEAD EXPERT NO. 7041  
P.O BOX 3010-00200 NAIROBI  
MOBILE NO. 0722 654 284  
Email: [wacege09@gmail.com](mailto:wacege09@gmail.com)**

**&**

**SUSAN NGARE EIA/EA ASSOCIATE EXPERT NO.7089  
MOBILE NO. 0713 733 206  
Email: [plannex254@gmail.com](mailto:plannex254@gmail.com)**

### DISCLAIMER AND SIGNATURES

This Environmental impact assessment project report has been prepared by Mr. Karuru Chege registration number 7041 & Susan Ngare registration number 7089 in accordance with the Environmental Management and Co-ordination Act (EMCA) 1999 and the Environmental (Impact Assessment and Audit) Regulations 2003 for submission to the National Environment Management Authority (NEMA).

#### PREPARED BY:

EIA/Audit Lead Expert Reg. No. 7041

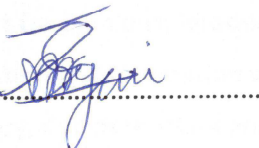
KARURU CHEGE

SIGNATURE 

DATE 14/02/2017

EIA/EA ASSOCIATE EXPERT REG NO. 7089

SUSAN NGARE

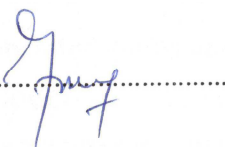
SIGNATURE 

DATE 14/02/2017

#### PROPONENT:

HEARAN ENTERPRISE LIMITED

CONTACT PERSON Brian Tefamariam

SIGNATURE 

DATE 14/02/2017



## Table of Contents

LIST OF TABLES.....	vii
EXECUTIVE SUMMARY .....	viii
ACRONYMS .....	ix
CHAPTER ONE .....	1
1.0 INTRODUCTION: PROJECT BACKGROUND .....	1
1.1 The Principal Goal of Environmental Impact Assessment .....	1
1.2 Terms of Reference .....	1
1.3 Objectives .....	2
1.4 The Project Scope .....	2
1.5 Methodology .....	2
1.6 Justification.....	3
1.7 Infrastructure and Services .....	3
1.8 pictorial view of the neighbourhood & Architectural presentation of the project .....	3
CHAPTER TWO .....	5
2.0 PROJECT DESCRIPTIONS, DESIGN & OPERATIONS .....	5
2.1 DESCRIPTION OF PROJECT CONSTRUCTION ACTIVITIES .....	5
2.2 Pertinent Design Considerations .....	5
2.1.0 Excavation and foundation work.....	5
2.1.2 Masonry, Concrete Work and Related Activities .....	5
2.1.3 Structural Works .....	5
2.1.4. Mechanical works .....	5
2.1.5 Roofing works.....	6
2.1.6 Electrical Works.....	6
2.1.7 Solid and Liquid Waste Management.....	6
2.2.0 MATERIAL INPUTS, PRODUCTS, BY-PRODUCTS .....	6
2.2.1 Material Inputs.....	6
2.2.2 Tools and Machinery .....	6
2.3.0 Waste and by-products during construction.....	6
2.3.1 Waste generated during operation .....	7
2.4.0 PROJECT BUDGET .....	7
2.5.0 PUBLIC PARTICIPATION, REPORTING AND DOCUMENTATION .....	7
CHAPTER THREE.....	8
3.0 BASELINE DATA AND INFORMATION GATHERING PROCEDURE .....	8
3.2 current status, land use and environment .....	8

3.3 Topography and drainage .....	8
3.4 Climate.....	8
3.5 Hydrology .....	8
3.6 Water resources .....	9
3.7 Vegetation .....	9
3.8 Geology and soils.....	9
3.9 Energy sources.....	9
3.10 Population distribution .....	9
3.11 Ecological environment flora and fauna .....	9
CHAPTER FOUR.....	11
4.0 POLICY, LEGAL AND LEGISLATIVE FRAMEWORK.....	11
4.1 Environment Management and Co-ordination Act, (EMCA) 1999 .....	11
4.2 The Water Act, Cap 372.....	11
4.3 The Occupational Safety and Health Act, 2007 (NO. 15 of 2007) .....	12
4.4 The Science and Technology Act, Cap 250.....	13
4.5 The Public Health, Act (Cap. 242).....	13
4.6 The Physical Planning Act, Cap. 286 .....	14
4.7 The Building Code 2000.....	14
4.8 The Penal Code (Cap. 63) .....	14
4.19 The EMCA (Water quality) Regulation 2006.....	15
4.10 Urban Areas and Cities Act .....	15
4.11 Environmental Management and Coordination (Conservation of Biodiversity regulations 2006) .....	15
4.12 Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009.....	16
4.13 The Tourism Act, No. 28 of 2011.....	16
4.14 Alcoholic Drinks Control Act of 2010 .....	16
4.15 The Land Registration Act, 2012 .....	17
4.16 The Environment and Land Court Act, 2011.....	17
4.17 Food Drugs and chemicals substances Act (Cap 254) .....	17
CHAPTER FIVE .....	18
5.0 PUBLIC PARTICIPATION .....	18
5.1 Introduction.....	18
5.2 Methodology used in Public consultation.....	18
5.3 Sources of information.....	18
CHAPTER SIX .....	20

<b>6.0 POTENTIAL SOCIAL AND ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES.....</b>	<b>20</b>
<b>6.1 DESCRIPTION OF THE EXISTING AND ANTICIPATED IMPACTS.....</b>	<b>20</b>
6.1.1 Existing Impacts.....	20
6.1.2 Anticipated Impacts .....	20
<b>6.2 CONSTRUCTION PHASE .....</b>	<b>20</b>
6.2.1 POSITIVE IMPACTS .....	20
6.2.1.1 Job Opportunities.....	20
6.2.1.2 Gains in the Local and National Economy .....	20
6.2.1.3 Provision of Market for Supply of Building Materials .....	20
6.2.1.4 Increased business within the surrounding .....	20
6.2.2 NEGATIVE IMPACTS.....	21
6.2.2.1 Soil Compaction.....	21
6.2.2.2 Impact on flora and fauna .....	22
6.2.2.3 Noise Pollution .....	23
6.2.2.5 Dust Emissions.....	25
6.2.2.6 Increased Water Demand .....	25
6.2.2.7 Air Quality.....	26
6.2.2.8 Oil Leaks and Spills .....	26
6.2.2.9 Public Health and safety .....	27
<b>6.3 OPERATION PHASE.....</b>	<b>27</b>
6.3.1 POSITIVE IMPACTS .....	27
6.3.1.1 Employment creation.....	27
6.3.1.2 Ease of access to recreational facility.....	28
6.3.1.3 Increased revenue.....	28
6.3.2 NEGATIVE IMPACTS.....	28
6.3.2.1 Increased pressure on infrastructure .....	28
6.3.2.2 Solid Waste.....	28
6.3.2.3 Liquid Waste.....	29
6.3.2.4 Security .....	29
6.3.2.4. Fire safety .....	29
6.3.2.5 Traffic congestion.....	30
❖ No parking should be done on the roadside.....	30
6.3.2.6 Noise pollution .....	30
Mitigation measure .....	30
6.3.2.7 Rodent/pest infestation.....	30



6.3.2.8 Efficient energy consumption .....	30
6.3.2.9 Increased water utilization .....	31
6.3.2.10 Water Pollution .....	31
6.3.2.11 Air Pollution.....	31
6.4 SITE DECOMMISSIONING PHASE .....	31
CHAPTER SEVEN .....	33
7.0 PROJECT ALTERNATIVES AND PROPOSED ACTION .....	33
7.1 Analysis of Alternatives.....	33
7.2 The No-Action Alternative .....	33
7.3 Relocation alternative.....	33
7.4 Alternative Construction Materials and Technology .....	33
7.5 Comparison of Alternatives .....	34
7.6 Liquid Waste Management Alternatives.....	34
7.6.1 Alternative one: Use of stabilization ponds/lagoons .....	34
7.6.2 Alternative Two: <i>Use of Constructed/Artificial wetland</i> .....	34
7.6.4 Alternative Four: connection to the County Sewer System .....	35
7.6.5 Alternative Five: <i>Waste Water Treatment Plant</i> .....	35
7.6.6 Solid Waste Management Alternatives.....	35
7.7 Water Supply .....	35
7.7.1 Alternative one - Rain Water Harvesting .....	35
7.7.2 Alternative two – Tanker/Bowsers Water Supply .....	35
7.7.3 Alternative three – Drilling of a Borehole .....	36
7.7.4 Alternative four – Combined Water Supply .....	36
CHAPTER EIGHT .....	37
8.0 ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS .....	37
8.1 THE FOLLOWING IS THE RECOMMENDED EMP FOR THIS PROPOSED PROJECT .....	37
CHAPTER NINE .....	54
9.0 CONCLUSION AND RECOMMENDATIONS .....	54
9.1 CONCLUSION .....	54
REFERENCES:.....	55
ANNEXES.....	56

## LIST OF TABLES

<b>TABLE 1: PLANNING PHASE</b> .....	37
<b>TABLE 2: SITE PREPARATION PHASE</b> .....	38
<b>Table 3: CONSTRUCTION PHASE</b> .....	40
<b>Table 4: COMMISSIONING PHASE</b> .....	47
<b>TABLE 5: DECOMMISSIONING PHASE</b> .....	52

## EXECUTIVE SUMMARY

The owner of L.R. NO. 1/356, Kilimani -along Lenana Road, Nairobi County has submitted an application for development permission to the county, NEMA as well other approving authorities. The owner is desirous of putting up a hotel on the said parcel of land. This E.I.A report is in support of that application for development permission. In addition to analyzing in detail the expected environmental impacts it provides an Environmental Management Plan (E.M.P) framework for managing anticipated negative impacts for sustainable development.

The proposed project site is located in Kilimani along lenana road opposite the Nigerian high commission and is sandwiched between white oak park and luxury image apartments.

The overall objective of this Environmental Impact Assessment project report is to ensure that environmental concerns are integrated in all developmental activities of this particular project. It aims at identifying the potential effects and risks of the proposed project, evaluating and suggesting mitigation measures for the significant negative impacts through a comprehensive Environmental Management Plan.

The proposed project will include ground clearing, excavation and leveling, transportation and disposal of top soil, actual construction and landscaping upon completion. A description of project scope and activities is captured in chapter two.

The report has laid in great detail the legal framework governing the proposed development, some of the legal statutes which have been highlighted in this chapter include: - National Environmental Action Plan (NEAP), Physical Planning Act of 1996, Urban Areas and Cities Act among others. The report has highlighted the key sections that the proponent will have to abide with.

The report elucidates anticipated impacts in all phases of the project which shall include pre-construction phase, implementation/construction phase, operational phase and decommissioning phase. Appropriate mitigation measures have been recommended depending on the impact and an environmental management and monitoring plan is included to be abided by in order to secure environmental sustainability.

Finally, the project proponent has promised to work closely with environmental experts, residents, local authority, local Environment committees and NEMA to ensure full implementation of EMP. This study recommends issuance of the necessary license since the proponents have duly endorsed the report, of and in itself a sign of their commitment to its full implementation.



## ACRONYMS

<b>CO<sup>2</sup></b>	Carbon Dioxide.
<b>EA</b>	Environmental Audit.
<b>EIA</b>	Environmental Impact Assessment.
<b>EMCA</b>	Environmental Management and Co-ordination Act.
<b>EMP</b>	Environmental Management Plan.
<b>GoK</b>	Government of Kenya.
<b>NEAP</b>	National Environmental Action Plan.
<b>NEMA</b>	National Environment Management Authority.
<b>OHS</b>	Occupation Health and Safety.
<b>PCC</b>	Public Complaints Committee.
<b>SERC</b>	Standards and Enforcement Review Committee.

## CHAPTER ONE

### 1.0 INTRODUCTION: PROJECT BACKGROUND

The proprietor of plot L.R. NO. 1/356 Kilimani along Lenana road, Nairobi County, has submitted an application for development permission to the sub county, NEMA as well as other approving authorities. The said land currently falls under leasehold proprietorship. The owner is desirous of putting a hotel to offer hospitality and recreational facility to the area residents. Upon completion the hotel shall comprise of 15 floors inclusive of the ground floor. In summary the development shall consist of:

- ❖ 180 suites with guest service areas and risers;
- ❖ Lobby;
- ❖ All day dining/dining terrace
- ❖ Washrooms;
- ❖ 2 kitchens;
- ❖ Staff kitchen and restaurant;
- ❖ Club lounge;
- ❖ 3 meals restaurant;
- ❖ Bar;
- ❖ 25m pool;
- ❖ Gymnasium;
- ❖ Ballroom;
- ❖ Business centre
- ❖ Offices;
- ❖ Meeting and events room

***Refer to the attached architectural drawings***

This E.I.A report is in support of that application for development permission. In addition to analyzing in detail the expected environmental impacts it provides an Environmental Management Plan (E.M.P) framework for managing anticipated negative impacts for sustainable development. The report gives detailed project background, its goal and objectives, scope, project justification and cost, baseline information, Policy- legal and institutional framework governing the exercise, identification of impacts and their respective mitigation measures, a clear description of the project's alternatives and a comprehensive environmental management plan to avert or minimize the anticipated impacts.

### 1.1 The Principal Goal of Environmental Impact Assessment

The core objective of this E.I.A report is to establish Environmental Management Framework upon which the project will be undertaken and provide a basis for conducting future audits. It is also aimed at predicting the impacts from the project implementation and operation and proposes measures to reduce the anticipated negative impacts.

### 1.2 Terms of Reference

- ❖ Define the location of the project including the vicinity that might be affected by the proposed project
- ❖ Assess the materials, technology, procedures and processes to be used, in the implementation of the project

- ❖ Evaluate and analyse the anticipated potential negative environmental impacts and the mitigation measures to be undertaken during and after implementation of the project.
- ❖ Evaluate the products, by-products and wastes to be generated by the project and the method of disposal.
- ❖ Recommend a specific environmentally sound and affordable solid waste management system.
- ❖ Evaluation and analysis of alternatives including the other possible alternative use of the project site, design and technologies.
- ❖ Propose an Environmental Management Plan (EMP), detailing measures for eliminating/minimizing or mitigating adverse impacts on the environment.
- ❖ Propose measures to prevent health and safety hazards and to ensure security in the working environment for the employees, residents and for the management in case of emergencies. This encompasses prevention and management of the foreseeable accidents and hazards during both the construction and occupational phases.
- ❖ Establish estimated project budget.

### **1.3 Objectives**

The overall objective of this Environmental Impact Assessment project report is to ensure that environmental concerns are integrated in all the phases of the project. It aims at identifying the potential negative impacts and risks as well as recommending mitigation measures for the significant negative impacts through a comprehensive Environmental Management Plan.

### **1.4 The Project Scope**

The report has undertaken comprehensive environmental assessment by simulating environmental concerns in all phases of the project. This task involved: -

- ❖ Assessment of the potential Environmental Impacts of the project on the site and the surrounding areas.
- ❖ Establishment of the significance of these impacts.
- ❖ To propose the mitigation measures for the anticipated negative impacts to the environment.
- ❖ To generate baseline data for monitoring and evaluation of how well the mitigation measures are being implemented during the project cycle.
- ❖ To assess the feasibility of project alternatives
- ❖ A review of the environmental policy, legal and administrative framework.
- ❖ Social repercussions of the development within the locality and region.
- ❖ Development of an Environmental Management Plan with mechanisms for monitoring and evaluating the compliance and environmental performance.

### **1.5 Methodology**

Several methods were employed to gather and compile data during the process of EIA project report making, these include: -

- ❖ Site visits to gather raw data on condition of the site and its surrounding.
- ❖ Questionnaires.



- ❖ Secondary data collection: This involved study of various publications to gather data especially the legal guidelines governing this type of project.
- ❖ Analysis of activities to be carried out in the implementation process and their possible anticipated impacts.

## 1.6 Justification

The proposed development is compatible with the prevailing neighborhood character. The area is characterized by mixed urban development's ranging from, apartments /flats, and commercial development. Key notable developments in the area include white oak apartments, luxury image apartments, lenana motor dealers, Nigerian high commission, South Africa high commission and shade road show trucks. This development will complement the existing development in this neighbourhood. The facility once complete will offer quality and affordable hospitality and recreational services to the neighbourhood and this can only lead to improvement in quality and type hence raising people's quality of life.

## 1.7 Infrastructure and Services

**Roads/Accessibility.** The site is along lenana road.

**Water-** Though the locality is served by Nairobi town's water supply system, the proponent intends to incorporate rainwater harvesting technology in the designs to boost supply and also install water storage tanks.

**Sewer System.** The area is served by the Municipal sewer system. The project will therefore be connected to the sewer line for effective and efficient waste water management.

**Surface run -off.** The project design incorporates rain water harvesting from the roofs to both increase the water stock in this neighbourhood where water is scarce and also prevent any damage which may be caused by the roof waters by reducing surface runoff.

**Solid Waste Management.** It is anticipated that during the construction phase the waste generated from the site, will be heaped at suitable waste collection point where it will be sorted before final disposal at the designated zone. All waste generated during the operational phase will be disposed of suitably into the approved dumpsites. A plan to handle all waste has been included in the Environmental Management Plan. (Refer to the EMP Table)

**Energy supply.** The neighbourhood is already connected to the national power grid. To complement this source the proponent has been advised to harvest solar energy which would provide cheaper energy to the facility not to mention it is a green credentials as a source of energy which should be encouraged.

**Security.** Security is generally satisfactory in this area and the site has a security guard manning the compound.

## 1.8 pictorial view of the neighbourhood & Architectural presentation of the project



Luxury image apartments



Twin oak apartments



White oak park apartments



Nigeria high commission with green fence

lenana motor dealers



## CHAPTER TWO

### 2.0 PROJECT DESCRIPTIONS, DESIGN & OPERATIONS

#### 2.1 DESCRIPTION OF PROJECT CONSTRUCTION ACTIVITIES

##### 2.2 Pertinent Design Considerations

- Ventilation- the design incorporates natural ventilation with features that encourage natural air circulation.
- Plumbing and drainage- water supply and reticulation to be done using galvanized steel piping to BS 1387 and/or PPRC piping. Liquid waste on the other hand to be drained into sewer line as appropriate.
- Lighting –the design provides for maximum utilization of natural lighting through glass windows and doors as well as use of energy efficient devices like fluorescent lamps.

##### 2.1.0 Excavation and foundation work

Site excavation will be carried out to prepare the site for construction of foundations, pavements and drainage systems. This may involve the use of heavy earthmoving machinery such as bulldozers. If the bed-rock is high this may involve some blasting.

##### 2.1.2 Masonry, Concrete Work and Related Activities

All slabs at ground level will be poured over 1,000 gauge polythene sheeting on 50mm thick murrum bunding on the hardcore. All soil under the slabs and all around external foundations will be treated against termites.

General masonry and related activities will include stone dressing, concrete mixing, plastering, slab construction, construction of foundations, and erection of walls and curing of freshly constructed concrete surfaces. These activities are labour intensive and are supplemented by machinery such as concrete mixers and stone cutters.

##### 2.1.3 Structural Works

All black cotton soil will be excavated and hauled to designated dumping site. The depth of foundations to be determined on site to structural Engineer's detail and all walls less than 200mm thick will be reinforced with hoop iron at every alternative course.

##### 2.1.4. Mechanical works

All mechanical work shall be done by qualified technicians and must adhere to the set standards including

- ❖ All plumbing and drainage to comply with Nairobi city county specifications.
- ❖ All services duct to be accessible from all floors.
- ❖ Soil Vent Pipe (SVP) to be provided on all doors and windows except bathroom and toilet doors.
- ❖ All underground foul and waste drain pipes shall be PVC to comply with BS 5255.
- ❖ All inspection chamber covers and framing shall be cast iron to comply with BS 497.
- ❖ The storm drain pipes must comply with BS 556.
- ❖ All testing of pipes must be done before plastering.



- ❖ Installation of pipes for water supply and sewerage systems within the building will be done by a qualified plumber to the satisfaction of the relevant lead agencies like Public Health Officer, Nairobi City County.

#### **2.1.5 Roofing works**

This will entail raising the roofing materials such as iron sheets and structural timber to the roof and fastening the roofing materials to the roof.

#### **2.1.6 Electrical Works**

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 electrical works will be carried out by a licensed electrician to the satisfaction of KPLC.

#### **2.1.7 Solid and Liquid Waste Management**

The Proponent will provide facilities for handling solid waste generated within the development. A waste collection receptacle will be installed near the main entrance where all solid waste will be temporally stored before it is collected by a competent waste collection firm that would be hired by the Proponent. The waste will then be disposed of in the most environmentally friendly manner and as directed by the County authorities. The project will be connected to the sewer line for efficient waste water management.

### **2.2.0 MATERIAL INPUTS, PRODUCTS, BY-PRODUCTS**

#### **2.2.1 Material Inputs**

The project implementation/construction will involve the whole gamut of construction materials and accessories as listed below. The list is however not exhaustive. Building stones, Building sand, Ballast, Cement, Timber, Steel, PVC pipes, Galvanized pipes, Concrete Cabro, Nails, Damp proof membrane, Wooden props, Glass, Paint, Tiles, Water, Electrical wires etc.

#### **2.2.2 Tools and Machinery**

The tools and machinery to be used will include trucks, pick-up and handcarts for transporting construction materials. At the site itself, Excavators, Cranes, Concrete mixer (diesel-operated), Wheelbarrows; Hammers and mattocks, Spades, trowels, Poker vibrator (for removing air bubbles and excess water from concrete) etc will be deployed.

#### **2.3.0 Waste and by-products during construction**

The waste and by-products arising from this project during construction include the following:

- ❖ Excavated soil and rock
- ❖ Construction debris (from concrete and broken stones);
- ❖ Wooden pieces, timber cut-offs and left-over timber;
- ❖ Waste water;
- ❖ Sanitary waste.

These wastes will be disposed of by the contractor under the supervision of Proponent Site representative who will follow the *Waste Management Regulations, Legal Notice 121 of September 2006*.

### **2.3.1 Waste generated during operation**

The wastes likely to be generated during operation will include the following:

- Solid waste (paper, plastics, cans and tissue etc)
- Sanitary waste.

These wastes will be disposed of by the proponent, according to standard, documented procedures following the *Waste Management Regulations, Legal Notice 121 of September 2006*.

### **2.4.0 PROJECT BUDGET**

The estimate cost of putting up the building is estimated at a cost of kshs 30,000.00 per square metre. The area to be constructed per floor is 1000m<sup>2</sup>.

**One square metre: kshs 30,000.00**

**Project size: 1000m<sup>2</sup> by 15 floors (15,000m<sup>2</sup>)**

**Project cost: kshs 450,000,000.00**

**NEMA fee applicable: 0.1% of the total project cost**

**Total NEMA: 450,000.00**

Most of the items and equipment's used during construction will be either borrowed or hired.

### **2.5.0 PUBLIC PARTICIPATION, REPORTING AND DOCUMENTATION**

This report has been prepared and submitted to NEMA by the consultant on behalf of the client/proponents. The people interviewed in fulfilment of public participation requirement are residents in the neighbourhood introduced as such to the expert by the proponent. Below is a list of the respondents. The exercise was carried out on 6<sup>th</sup> October, 2016. The duly filled questionnaires are attached in the report.

## CHAPTER THREE

### 3.0 BASELINE DATA AND INFORMATION GATHERING PROCEDURE

Project information was gathered through discussions with the project owners and the neighboring community. The site was also visited for investigation of the physical environmental status and that of the immediate surroundings. A questionnaire (*completed copy annexed to this report*) was used to record information gathered during the discussions with the neighboring community and interested parties.

Physical investigation took into consideration among other issues the hydrology and surface terrain, drainage system, risk involved during operation, water availability and sanitation status in the area as well as typical socio-economic activities around the proposed site. Also investigated were the public services provided in the area including the drainage systems, solid waste management, water supply/abstractions, power supply and access roads etc.

#### 3.1 The Particulars of the Property are as Follows:

L.R. Number	1/356
Owner:	HEARAN ENTERPRISE LIMITED
Size :	0.882 acres
Permitted use:	Hotel (P.P.A 2 notification of approval of development permission is attached)

#### 3.2 current status, land use and environment

The land is secured by a perimeter boundary wall and is currently occupied by a gate house only. The land is approved for hotel use as permitted by the physical planning act; P.P.A2 notification for approval of development permission obtained in 2015.

#### 3.3 Topography and drainage

Kilimani area is approximately 170-1800 metres above sea level. The proposed project site has a gentle slope and drains along the access road.

#### 3.4 Climate

Under koppen climate classification Nairobi has a subtropical highland climate. At 1795 metres above sea level, evenings may be cool, especially in the june/july season when the temperatures can drop to 100c.

The sunniest and warmest part of the year is from December to march, when temperatures average the mid-twenties during the day. The mean temperature is 240c.

There are two rainy seasons, but rainfall can be moderate. The cloudiest part of the year is just after the rainy season, when, until September, conditions are usually overcast with drizzle.

#### 3.5 Hydrology

Under present conditions storm water is the main hydrological feature. There are well established storm water drains within the project area.

### **3.6 Water resources**

The area is served by Nairobi town's water supply system and 90% of the time water flowing from the taps according to the neighbours. However, the project design will incorporate rain water harvesting technology to boost supply and also cut on water cost.

### **3.7 Vegetation**

The area is highly urbanized and the project site has only grass and a few shrubs as vegetation cover.

### **3.8 Geology and soils**

The geological history of Nairobi has been dominated by volcanic activity whereby a thick succession of alkaline lavas and associated tuffs began accumulating in mid-miocene time and continued into the upper Pleistocene. Practically the entire Nairobi area is covered by these volcano rocks derived from the rift valley region.

The main geologic formations in Nairobi are undifferentiated ngong volcanic materials (TVa3), Tval (basanites), Tva2 (tephrites), Tvp2 (kandizi phenolites), Tvt2 (Nairobi trachytes).

The soil types in the project area are primarily black cotton soils which are known to be problematic for construction

### **3.9 Energy sources**

The adjacent occupiers obtain their energy from the national grid through the Kenya power and lighting company. This is the most easily available source within the project site and therefore shall be used within the project site. Installation of solar panels to supplement the national grid is a possible sustainable source of power. Though there are other alternatives to the available sources, options can be explored further after a cost benefit analysis.

### **3.10 Population distribution**

Nairobi is quite densely populated but with diverse distribution varying from one area to another. According to the 2009 population census Nairobi has a population of about 3,138,369 and growing at a rate of 2.8% per annum.

Kilimani is located approximately 4km west of Nairobi central business district. The neighbourhood has historically been primarily low-density residential but since 2000 has become increasingly high density mixed residential and commercial.

### **3.11 Ecological environment flora and fauna**

There is no wildlife, bird sanctuaries or conservation wetlands within the project site. There are no rare, endangered or endemic species recorded. The ecology of the project site is not very rich in diversity or high in endemism.

### **3.12 Socio-Economic Environment**

The main purpose of the socio economic analysis is to place the proposed project within the context of the local human environment, upon which it is expected to have an important influence. Similarly, the analysis also examined the ways in which the local human environment might impact the project and may be supportive of it. Of corollary concern, was

the project's impact on the existing site in relation to any potentially important heritage elements that exists, or likely to exist. No significant negative impacts were detected in this sector.

*Indeed the project will bring significant social-economic benefits including employment opportunities, increase in hospitality and recreational facilities, and promote domestic and international tourism as well as improving the property values within the neighbourhood by optimizing use.*

## CHAPTER FOUR

### 4.0 POLICY, LEGAL AND LEGISLATIVE FRAMEWORK

#### 4.1 Environment Management and Co-ordination Act, (EMCA) 1999

The exploitation, management and conservation of environmental resources in Kenya are governed by numerous statutes. The primary law that establishes the core institutions is the principal environmental management and coordination act 1999 (EMCA 1999). This Act makes provision for the establishment of the National Environment Management Authority (NEMA) which has statutory mandate to supervise and coordinate all environmental activities. The Act read together with Environmental Impact Assessment and Audit Regulations, 2003, are the legislations that govern Environmental Impact Assessment (EIA) studies. Under the EMCA, all proposed projects that are likely to have significant impact on the environment according to the second schedule will undergo an Environmental Impact Assessment (EIA) while projects already in place will undertake annual Environmental Audits (EA). According to Section 58 of the Act (EMCA) No. 8 of 1999, second schedule 9 (i), and the Environmental Impact Assessment and Audit Regulations, 2003, all new enterprises and projects must undergo Environmental Impact Assessment (EIA).

*It is in line with this provision that the proponent appointed EIA experts to undertake an environmental Impact Assessment and prepare a project report in respect of the proposed development. This addresses the requirement as the project activities are likely to have negative environmental impacts. This will ensure the proponent observes continuous improvement on environmental, health and safety management and takes appropriate measures to mitigate any adverse impacts to the environment and the surrounding communities that the project may have during its implementation and operation.*

Part VII, Section 68 of the same Act requires operators of projects or undertakings to carry out environmental audits in order to determine level of compliance with statements made during the EIA. The audit report should be submitted to NEMA. *The proponent shall submit an Environmental Audit report in the first year of occupancy to confirm the efficacy and adequacy of the Environmental Management Plan.*

#### 4.2 The Water Act, Cap 372

The Ministry of Water is vested with the duty to conserve and regulate the use of natural water resources (estuaries, surface, ground water and marine). The Act prohibits release of wastewater without a permit and also spells out penalties for pollution of water. The Ministry through the district water board regulates the use of water and the drilling of boreholes.

Part II Section 18 of this Act provides for national monitoring and information systems for water resources. In addition, sub-section 3 allows the Water Resources Management Authority to demand from any person or institution, specified information, documents, samples or materials or water resources. Under these rules, specific records may require to be kept by a site operator and the information thereof furnished to the authority. Section 73

of the Act allows a person with license (licensee) to supply water to make regulations for purposes of protecting against degradation of water sources. Section 75 sub-section 1 allows the licensee to construct and maintain drains, sewers and sewer works for intercepting, treating or disposing of any foul water arising or flowing on land for preventing pollution of water sources within his/her jurisdiction.

Section 94 of the Act makes it an offence to throw or convey or cause or permit to be own or conveyed, any rubbish, dirt, refuse, effluent, trade waste or other offensive or wholesome matter or thing into or near to water resource in such a manner as to cause, or be likely to cause pollution of the water resource.

*The project proponent will be required to ensure that all construction waste are collected and dumped at approved sites to prevent potential for contaminating surface and underground water sources. All hazardous materials will need to be stored in a store with concrete floor. In addition, maintenance of fuel powered equipment and/or vehicles should be done off-site.*

*There is no river around the project site but underground water cannot be ruled out and therefore this EIA proposes waste disposal method that will observe this provision when disposing off waste water to ensure that it does not infiltrate into underground water resulting to pollution. Compliance with the Act will be ascertained by control audit which will be done in the subsequent years.*

#### **4.3 The Occupational Safety and Health Act, 2007 (NO. 15 of 2007)**

This Act of parliament provides for the safety, health and welfare of workers and all persons lawfully present at workplaces. Further it provides for the establishment of the National Council for Occupational Safety and Health and for connected purposes. The key areas addressed by the Act include:

- General duties including duties of occupiers, self-employed persons and employees.
- Enforcement of act including powers of an occupational safety and health officer.
- Registration of workplaces.
- Health General Provisions including cleanliness, ventilation, lighting and sanitary conveniences.
- Machinery safety including safe handling of transmission machinery, hand held and portable power tools, self-acting machines, hoists and lifts chains, robes and lifting tackle, cranes and other lifting machines, steam boilers, air receivers, refrigeration plants and compressed air receiver.
- Safety general provision including safe storage of dangerous liquids, fire safety, evacuation procedure, precautions with respect to explosives or inflammable dust or gas.
- Chemical safety including the use of material safety data sheets, control of air pollution, noise and vibration, the handling, transportation and disposal of chemicals and other hazardous substances materials.



- Welfare general provisions including supply or drinking water, washing facilities, and first aid.

Under section 6 of this Act, every occupier is obliged to ensure safety, health and welfare of all persons working in his workplace.

*The proponent will have to adhere to the provisions of this Act during project implementations as workers will be involved. This will protect them against hazards to health and safety arising out of or in connection with their activities at work especially during the construction phase. In summary, this Act will be basis for ensuring health and safety of workers. The proponent will ensure that the contractor includes in the contract document adequate measures to promote safety and health of workers during all phases of the proposed project.*

#### **4.4 The Science and Technology Act, Cap 250**

**Section 4 of the Act provides for a Council whose functions include;**

- a) To ensure the application of the results of scientific activities to the development of agriculture, industry and social welfare of Kenya.
- b) To advise for the conservation of the natural and social environment in Kenya.

*The contractor will employ technologies that take into consideration the conservation of the natural and social environmental in Kenya. He will also ensure that all technologies that are used are geared toward sustainable development and embrace recovery, recycling and reuse principles.*

#### **4.5 The Public Health, Act (Cap. 242)**

Section 115 of the Act states that; no person/institution shall cause nuisance or, addition liable to be injurious or dangerous to human health. Section 116 require Local Authorities 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 leet of health to be offensive or injurious to health. Any noxious matter or waste water, 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 harbor 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 facilitates 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 rely on existing solid waste collection services (but will consider hiring a collection firm in case of inadequacy) to collect all solid waste collection Sewage from the site will be directed to the sewer line.*

#### **4.6 The Physical Planning Act, Cap. 286**

The Physical Planning Act under Section 29 empowers local authorities to control and regulate all developments within their areas of jurisdiction. The same section, therefore, allows for prohibition or controls the use and development of land and buildings in the interest of proper and orderly development of an area.

Section 30 states that any person who carries out development without permission will be required to restore the land to its original condition. It also states that **NO** other licensing authority shall grant license for commercial or industrial use or occupation of any building without a development permission granted by the respective local authority/county government.

Finally, Section 36 states that if in connection with a development application, Local Authority is of the opinion that the proposed development activity will have injurious impact on the environment; the applicant shall be required to submit together with the application an Environmental Impact Assessment (EIA) report. EMCA, 1999 echoes the same by requiring that such an EIA is approved by the National Environmental Management Authority (NEMA) and should be followed by annual environmental audits.

*The proponent has complied with this provision by appointing EIA/Audit expert to prepare and submit Environmental Impact Assessment Project report to National Environment Management Authority (NEMA).*

#### **4.7 The Building Code 2000**

Section 194 requires that where a sewer exists, the occupants of the nearby premises shall apply to the Local Authority for a permit to connect to the sewer line and that all wastewater must be discharged into the sewers. The code also prohibits construction of structures or buildings on sewer lines.

*For this development the liquid waste will be directed to the sewer line.*

#### **4.8 The Penal Code (Cap. 63)**

Section 191 of the Penal Code states, that any person or institution that voluntarily corrupts or foils water of public springs or reservoirs; rendering it less fit for its ordinary use is guilty or 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 in dwellings 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 in order to mitigate against any possible negative impacts.*

#### **4.19 The EMCA (Water quality) Regulation 2006**

The Regulation 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 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, 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 generation 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 have to ensure that appropriate measures to prevent pollution of underground and surface water sources are implemented throughout the project cycle.*

#### **4.10 Urban Areas and Cities Act**

The sections of the Act that are relevant to this project 36 (1) which mandates counties to prepare a framework for integrated development planning which shall be the basis for preparation of environmental management plans d (i), a basis for development control (g) among other things. Section 22 is also relevant in as far as it provides for citizens participation in the management of town affairs.

*As part of compliance the expert administered a public participation questionnaire as well as oral interviews to the interested and affected parties on 6<sup>th</sup> October 2016. It is however important to note that public participation questionnaires were provided for the Nigerian and South Africa high commission but upon production of the report on 17<sup>th</sup> October, 2016 they had not given their feedback even after several follow ups.*

#### **4.11 Environmental Management and Coordination (Conservation of Biodiversity regulations 2006)**

Kenya has a large diversity of ecological zones and habitats including lowland and mountain forests, wooded and open grasslands, semi-arid scrubland, dry woodlands, and inland aquatic, and coastal and marine ecosystems. In addition, a total of 467 lake and wetland habitats are estimated to cover 2.5% of the territory. In order to preserve the country's wildlife, about 8% of Kenya's land area is currently under protection. The country has established numerous goals, as well as general and specific objectives that relate to these issues, among others: environmental policies and legislations; involvement of communities; documentation of national biological resources; sustainable management and conservation of biodiversity; fair and equitable sharing of benefits; technical and scientific cooperation;

biodiversity assessment; dissemination of information; institutional and community capacity building; and integration of biodiversity concerns into development planning.

#### **4.12 Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009**

These Regulations determine that no person or activity shall make or cause to be made any loud, unreasonable, unnecessary or unusual noise that annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. In determining whether noise is loud, unreasonable, unnecessary or unusual, the following factors may be considered:

- ❖ Time of the day;
- ❖ Proximity to residential area;
- ❖ Whether the noise is recurrent, intermittent or constant;
- ❖ The level and intensity of the noise;
- ❖ Whether the noise has been enhanced in level or range by any type of electronic or mechanical means; and,
- ❖ Whether the noise is subject to be controlled without unreasonable effort or expense to the person making the noise.

These regulations also relate noise to its vibration effects and seek to ensure no harmful vibrations are caused by controlling the level of noise. Any person(s) intending to undertake activities in which noise is suspected to be injurious or endangers the comfort, repose, health or safety of others and the environment, must make an application to NEMA and acquire a license subject to payment of requisite fees and meeting the license conditions. Failure to comply with these regulations attracts a fine of KES 350,000 or 18 months jail term or both.

The Proponent/management shall observe policy and regulatory requirements and implement the measures proposed in this documenting an effort to comply with the provisions of the Regulations.

#### **4.13 The Tourism Act, No. 28 of 2011**

Part III, section 4 to 7, through the Act the Tourism Regulatory Authority was formed with a mandate of overseeing all tourism related activities in Kenya which include but not limited registration, licensing and developing and implementing of a code of conduct within the tourism sector.

#### **4.14 Alcoholic Drinks Control Act of 2010**

This Act was accented into law in August 2010 and was functional in November 2010, providing essential regulation on consumption, manufacturing and sale of alcoholic drinks in Kenya. In section 7 of the Act that regulations are put in place on sale, manufacturing, export or importing of alcoholic beverages unless with relevant licensing done by the relevant sub-county Alcoholic Regulation Committee as described in Section 8 and 13 of the Act. Under section 20 of the Act, the license of the premises is to be conspicuously displayed in the premise failure to which warrants to a crime. Moreover, section 20 gives regulations on employment of persons for sale of alcohol.

#### **4.15 The Land Registration Act, 2012**

The Land Registration Act is place to revise, consolidate and rationalize the registration of titles to land, to give effect to the principles and objects of devolved government in land registration, and for connected purposes. This Act applies to Subject to section 4, this Act shall apply to:

- ❖ Registration of interests in all public land as declared by Article 62 of the Constitution;
- ❖ Registration of interests in all private land as declared by Article 64 of the Constitution;  
and
- ❖ Registration and recording of community interests in land.

Section 24 states that: (a) the registration of a person as the proprietor of land shall vest in that person the absolute ownership of that land together with all rights and privileges belonging or appurtenant thereto; and (b) the registration of a person as the proprietor of a lease shall vest in that person the leasehold interest described in the lease, together with all implied and expressed rights and privileges belonging or appurtenant thereto and subject to all implied or expressed agreements, liabilities or incidents of the lease.

#### **4.16 The Environment and Land Court Act, 2011**

This Act is in place to give effect to Article 162(2) (b) of the Constitution; to establish a superior court to hear and determine disputes relating to the environment and the use and occupation of, and title to, land, and to make provision for its jurisdiction functions and powers, and for connected purposes.

#### **4.17 Food Drugs and chemicals substances Act (Cap 254)**

The purpose of this Act is to make provisions for the prevention of adulteration of food, drugs and chemical substances.

## CHAPTER FIVE

### 5.0 PUBLIC PARTICIPATION

#### 5.1 Introduction

Public consultation and participation process is a policy requirement by the Government of Kenya and a mandatory procedure as stipulated by EMCA 1999 section 58, on Environmental Impact Assessment for the purpose of achieving the fundamental principles of sustainable development. Therefore, this chapter describes the process of the public consultation and public participation followed to identify the key issues and impacts of the proposed the hotel development in Nairobi County. The objective of the consultation and public participation was to:

- ❖ Disseminate and inform the stakeholders about the project with Special reference to its key components and location.
- ❖ Gather comments, suggestions and concerns of the interested and affected parties about the project.
- ❖ Incorporate the information collected in the EIA study In addition, the process enabled,

1) The establishment of a communication channel between the general public and the team of consultants, the project proponents and the Government.

2) The concerns of the stakeholders be known to the decision-making bodies at an early phase of project development

#### 5.2 Methodology used in Public consultation

The exercise was conducted by a team of experienced registered environmental experts. The following process in carrying out the entire process involved:

- ❖ Key informant interviews and discussions
- ❖ Field surveys, photography and observations
- ❖ Completion of the pre-designed questionnaires which captured all the phases of the proposed development

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. The information gathered enabled the identification of the specific issues from the stakeholders' response, which provided the basis upon which the aspects of the Environmental Impact Assessment was undertaken.

#### 5.3 Sources of information

The exercise of public consultation was conducted on 6<sup>th</sup> October 2016 and on the 7<sup>th</sup> October 2016. The exercise was conducted via interviews under the guidance of questionnaires developed to capture the concerns, comments and issues that the stakeholders, neighbours and business people around the project site have regarding the proposed hearan hotel

development. The completion of such questionnaires allowed for the synthesis and analysis of issues that arose.

The first public participation exercise was conducted on 6<sup>th</sup> October, 2016 where questionnaires were administered, from this exercise it was noted that the immediate neighbours to the proposed project site were

- ❖ Image luxury apartments;
- ❖ White oak apartments;
- ❖ Twin oak apartments; and
- ❖ Lenana motor dealers

During the administering of the questionnaires the management of all apartments that is image luxury apartments, white oak apartments twin oak apartments and lenana motor dealers filled the questionnaires and had no objection to the development apart from white oak apartments which had problems of rat infestation from the former occupants of the parcel of land and feared that the same may re-occur.

Other businessmen and residents within the neighbourhood were also issued and emailed the questionnaires to seek their opinion about the proposed project and they had no objection to the project.

From the field work, and the public meeting it was apparent that the proposed development was received with mixed reactions by the interviewed people as they anticipated numerous impacts both negative and positive alike. The local community people, neighbours, and major stakeholders independently gave their views, opinions, and suggestions as in the best of their interest and in the interest of the factors that affected the circumstances, influences, and conditions under which their organizations exist.(see attached questionnaires )



## CHAPTER SIX

### 6.0 POTENTIAL SOCIAL AND ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES.

#### 6.1 DESCRIPTION OF THE EXISTING AND ANTICIPATED IMPACTS

##### 6.1.1 Existing Impacts

There are no existing environmental concerns on the site and the surrounding area. The site has no vegetation of conservational value.

##### 6.1.2 Anticipated Impacts

Impacts can either be positive or negative, direct or indirect. The magnitude of each impact is described in terms of being significant, minor or negligible, temporary or permanent, long-term or short-term, specific/localized or widespread and reversible or irreversible.

#### 6.2 CONSTRUCTION PHASE

##### 6.2.1 POSITIVE IMPACTS

###### 6.2.1.1 Job Opportunities

During the construction phase, there will be job opportunities to both skilled and casual workers. Several workers including casual labourers, masons, carpenters, joiners, electricians and plumbers are expected to work on the site from the period that the project will start until its completion. Apart from casual labour, semi-skilled and unskilled labour and formal employees are also expected to obtain gainful employment during the period of construction. After completion of the project, there will be employment in form of administrative staff for the development, housekeepers, cooks, and security guards among others. This will be a significant impact since unemployment is currently quite high in the country at large.

###### 6.2.1.2 Gains in the Local and National Economy

The proposed project will improve income/economic status of people within the project neighbourhood. There will be gains in the local and national economy. Through consumption of locally available materials including: concrete tiles, timber and cement. The consumption of these materials, fuel oil and others will attract taxes including VAT which will be payable to the government. The cost of the materials will be payable directly to the producers. The project will also be a source of foreign exchange since the proposed project will attract international tourist to Nairobi County.

###### 6.2.1.3 Provision of Market for Supply of Building Materials

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

###### 6.2.1.4 Increased business within the surrounding

The construction crew will buy various commodities from the neighbouring business premises. This would boost to some extent the businesses of the concerned people and hence of their families.

## 6.2.2 NEGATIVE IMPACTS

### 6.2.2.1 Soil Compaction

Moving machinery will compact the soils as construction operations are carried out. Compaction has the undesired effect of hindering air and water penetration beneath the soil surface limiting aerobic activities of the organisms in the process. This may have negative consequences in soil productivity though at a localized scale. Compaction will also enhance run-off during the rainy season. Soil compaction is the quiet killer of trees and vegetation. Unlike visible tree damage, such as topping, trunk girdling, or root pruning, soil compaction is nearly invisible but no less lethal. Compaction is caused by soil particles being squeezed together. This process removes air spaces making soils denser, oxygen deprived, and less able to absorb water. Resulting soils are limited in their ability to support tree roots and soil life of all kinds. Soil compaction is usually hard to reverse. Treatments are expensive and often not very effective, so protecting the soil is by far the cheapest and easiest way to keep trees and vegetation healthy.

Soil compaction happens during construction or when remodelling of some type occurs near trees. Other causes of compaction are hardscape or landscape modifications such as driveways, sidewalks, or patios. In actuality, any time that equipment, vehicles, or people are driving or operating under trees, there will likely be soil compaction, leading to unhealthy and possibly dead trees.

Compaction severity is related to the force applied to the soil, how often force is applied, and soil characteristics such as texture, moisture, and surface cover. Soil compaction is an unintended consequence of building construction and affects not only pre-existing trees but also newly planted trees as well. The force needed to cause soil compaction can come from heavy equipment, passenger vehicles, stockpiled supplies and equipment, and even pedestrian traffic.

**Common problems with soil compaction include:**

- ❖ Short, stunted roots.
- ❖ Increased water runoff and decreased availability of water to roots
- ❖ Limited air infiltration, which leads to high levels of carbon dioxide in soils, causing shallow and less stable root systems.
- ❖ Increased root conflicts with surface infrastructure and landscaping
- ❖ Reduced drought tolerance
- ❖ Increased root damage from lawn maintenance equipment

#### **Mitigation measure**

Soil compaction at the proposed project site will be prevented using the following techniques:

#### **i. Use of Mulch for Light Traffic Areas**

One of the simplest ways to reduce soil compaction is to apply an 8-inch-deep layer of chipped wood mulch over the tree protection zone (Arborists define a tree protection zone (TPZ) as the boundary around a tree(s) designed to protect the critical root zone.) that is temporarily open to construction traffic. The mulch may include wood directly from a chipper (generally between ½ and 2 inches in length) and does not have to be designed for plant health. Pine

straw, pine bark, or other refined mulches have limited or no effect—the mulch must be chipped wood. This technique is ideal for areas with only light traffic, including pedestrians and small vehicles.

#### **ii. Use of Geotextiles plus Mulch for Medium to Heavy Traffic Areas**

Geotextiles developed for supporting structures are now being used as anti-soil compaction tools. Geotextiles come in many different forms and are typically used to underlay roadways and foundations or add stability to landfills. The most commonly used geotextile is triplanar geo-composite (e.g., Tenax TenDrain, Terram Geocells, GSE Coaldrain) consisting of two layers of spun, bonded fabric with a force-spreading semi rigid plastic panel in between that also allows for drainage and air movement. The geo-composite is laid down on the soil surface, secured, and used in combination with an 8-inch-deep mulch layer. The geo-composite alone will have little or no effect. In fact, studies have been unable to show that this technique is more effective than simply using mulch; however, anecdotal observations indicate that in areas where equipment is making regular turning motions, this material can hold the mulch in place and reduce rutting and the associated compaction. This technique is ideal for light to medium traffic where regular turning motions, such as in a staging area for unloading materials, are expected.

#### **6.2.2.2 Impact on flora and fauna**

Construction projects, whether commercial developments, housing estates, infrastructure or public-sector projects, all have the potential to damage natural habitats, threatening wildlife and plant species. Below are some of the ways flora and fauna may be affected at the project site in the following ways:

- ❖ During construction habitat destruction may occur where a habitat is removed to make way for a new development. Plants and sessile animals in these areas are usually directly impacted generally resulting in alteration or reduction in biodiversity. Mobile animals (especially birds and mammals) retreat into remnant patches of habitat.
- ❖ Fragmentation: Native habitats, which were once continuous, may become divided into separate fragments during construction. The extent and connectivity of remaining habitats are reduced, and species may or may not be able to survive as a result. Fragmentation may alter the distribution of populations, the migration rates among populations, or the size of local populations. Animals with large home ranges will be the most severely affected. Often habitat fragmentation doesn't present an absolute barrier to movement, but rather subjects animals to greater mortality as they try to cross the contrasting habitat
- ❖ Disturbance: There is the potential for noise from construction activities to disturb fauna resulting in their relocation and thus reducing the biodiversity of an area.
- ❖ Pollution of water sources: Soil, waste concrete and toxins in runoff from the construction site or fuels, accidentally spilled during storage or delivery, can pollute both surface and ground water. There is no river near the project site but underground water pollution cannot be ruled out.

- ❖ Poorly timed construction: This can have a negative impact on a wide variety of species including nesting birds. Removal of the vegetation and birds' nests within the project site environs will inadvertently result in loss of existing habitat that is established. The proponent will undertake to re-plant some of the trees and landscape the site upon decommissioning of the project.

#### **Mitigation measures**

- ❖ The projects should be designed and implemented so as to avoid or compensate adequately for any adverse impacts on natural habitats and biodiversity.
- ❖ Site clearing must be carried out in accordance with the requirements of the Wildlife Act all legislative provisions relating to hedgerow / tree removal and the protection of bats and birds with particular attention to nesting birds.
- ❖ A Construction Waste Minimisation Plan should be implemented and waste removed to a licenced waste facility by an approved contractor.
- ❖ Planners and the construction contractor should be aware of best practice; maintain good drainage and natural water flows and exercise care in the siting and design of borrow pits and construction compounds.
- ❖ Ensure measures are in place to deal with unforeseen accidents and spillages during construction.

#### **6.2.2.3 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 site. People living in the neighbourhood and the site workers are likely to be affected since noise beyond some level is itself a nuisance and can be controlled within acceptable limits. Construction noise makers, e.g., heavy earth moving equipment, can move from location to location and is likely to vary considerably in its intensity throughout a work day. As a rule, engineering and administrative controls should always be the preferred method of reducing noise levels on worksites. Only, when these controls are proven unfeasible, earplugs as a permanent solution should be considered.

#### **Mitigation measures**

- ❖ Engineering controls modify the equipment or the work area to make it quieter. Examples of engineering controls are: substituting existing equipment with quieter equipment; retro-fitting existing equipment with damping materials, mufflers, or enclosures; erecting barriers; and maintenance.
- ❖ Administrative Controls are management decisions on work activities, work rotation and work load to reduce workers' exposure to high noise levels. Typical management decisions that reduce worker exposures to noise are: moving workers away from the noise source; restricting access to areas; rotating workers performing noisy tasks; and shutting down noisy equipment when not needed.

- ❖ Personal Protective Equipment -Earplugs are the typical PPE given to workers to reduce their exposure to noise. Earplugs are the control of last resort and should only be provided when other means of noise controls are infeasible. As a general rule, workers should be using earplugs whenever they are exposed to noise levels of 85 dB (A) or when they have to shout in order to communicate. Bystander exposure to worksite noise is common in construction. Workers are as likely to be exposed from noise generated by other workers or trades, as they are to be exposed to noise generated by their own work. The same will apply for properties neighbouring the proposed project site.
- ❖ Barrier Protection is an effective way of reducing noise is to locate noisy equipment behind purpose-built barriers. The barriers can be constructed on the work site from common construction building material (plywood, block, stacks or spoils) or the barriers can be constructed from commercial panels which are lined with sound absorbing material to achieve the maximum shielding effect possible. To be effective, the length of the barrier should be greater than its height. The noise source should not be visible and barrier should be located as close as possible to either the noise source or the receiver.
- ❖ Maintenance: Increased attention to maintenance of tools and equipment will reduce worksite noise levels. Maintaining your plant and equipment in good order not only increases its life, but makes it safer to use and quieter. In many cases, a noise hazard will be created or made worse by a lack of maintenance. Parts may become loose, creating more noise because of improper operation or scraping against other parts. Grinding noises may also occur as the result of inadequate lubrication. It is especially important to provide proper maintenance of noise control devices which are added or built into machinery. Loose and worn parts should be fixed as soon as possible.
- ❖ Limit pickup trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible.
- ❖ Construction/Demolition works should be done during the day when people are away and also the outside environment is also noisy.
- ❖ Adhere to the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 regarding noise limits at the workplace.

#### **6.2.2.4 Solid Waste**

Large amounts of solid waste will be generated during site preparation and construction phase including concrete, steel waste, timber cuts, polythene bags plastics including pipes cuts etc. Such solid waste materials can be injurious to the environment through blockage of drainage systems, choking of water bodies and negative impacts on human and animal health. This may be accentuated by the fact that some of the waste materials contain hazardous substances while some of the waste materials like plastic containers are non- biodegradable

and can have long-term and cumulative effects on the environment. They also pose danger to the safety of the public in case of accidental cutting or injury.

#### **Mitigation Measures**

- ❖ Recycle and re-use as much as practicable
- ❖ Pile and transport waste to designated dumpsite.
- ❖ The proponent shall put in place measures to ensure that construction materials requirements are carefully budgeted and to ensure that the amount of construction materials left on site after construction is kept minimal.
- ❖ Use of durable, long- lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time
- ❖ Provision of facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements

#### **6.2.2.5 Dust Emissions**

During construction, the project will generate substantial quantities of dust at the site and its surrounding. The sources of dust emissions will include excavation works and transportation activities. Emission of large quantities of dust may lead to significant impacts on the crowd and the local residents, which will be accentuated during dry weather conditions.

#### **Mitigation measures**

- ❖ Providing workers with personal protective equipment's
- ❖ Staff on site will be issued with personal protective gear including dust masks, coveralls and goggles to shield them from dust and minimize exposure.
- ❖ Water sprays will be applied on the ground surface prior to and during excavations. This will minimize emissions of dust particles to the atmospheres.
- ❖ Use dust nets to trap the dust from the construction site

#### **6.2.2.6 Increased Water Demand**

Both the workers and the construction works will create additional demand for water in addition to the existing demand. Water will be mostly used in the preparation of concrete for construction works and for wetting surfaces or cleaning completed structures.

#### **Mitigation measures**

- ❖ The proponent shall ensure that water is used efficiently at the site by sensitizing construction staff to avoid irresponsible water use.
- ❖ The proponent should install water conserving automatic taps and toilets.
- ❖ Any water leaks through damaged pipes and faulty taps should be fixed promptly by qualified staff.
- ❖ The proponent should install water tanks on site to conserve water for site activities especially during periods of high water demand
- ❖ Encourage water re-use/recycling to avoid water wastage.



#### 6.2.2.7 Air Quality

The activities on the site will result to increased dust and gas emissions. Vehicles generate hazardous exhaust fumes such as Carbon Oxides (CO<sub>2</sub>), Sulphur Oxides (SO<sub>2</sub>) and Nitrogen Oxides (NO<sub>2</sub>). Dust, as caused by vehicle movement suspends in the air mostly during dry spells. Such dust and gases have direct negative impact to the quality of air.

##### ***Mitigation Measures***

- ❖ Areas generating dust particles should be sprinkled with water to reduce dust blowing out over the area where possible to mitigate effects of wind on them.
- ❖ Restrict construction and maintenance activities to daylight hours
- ❖ Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.
- ❖ Sweep daily (with physical sweepers) all paved access roads, parking areas and staging areas at construction sites.
- ❖ Project should be undertaken in phases to cushion the cumulative effects of dust, which would be great in case the project is done at once.

It is recommended that the following exhaust abatement measures be used in the proposed project:

- ❖ Reduce Engine Idling: Idling engines waste fuel and contribute to noise and air pollution. In planning day-to-day activities on a construction site, fleet managers can save on fuel costs as well as improve the air quality in their work environment by turning off engines when they are not in use.
- ❖ Use Cleaner Fuels: Burning cleaner diesel fuel, or alternative fuels such as biodiesel, helps reduce air pollution. Some examples of cleaner fuels available for construction fleets in the Kenyan market include Low Sulfur Diesel fuel (LSD), which, is readily available and currently used by diesel-powered highway vehicles.
- ❖ Install Pollution Control Equipment: Adding advanced pollution control equipment such as a diesel oxidation catalyst or a particulate matter filter will also reduce emissions from construction vehicles. These devices are installed in the exhaust system of an existing diesel engine.

#### 6.2.2.8 Oil Leaks and Spills

Oil spills are prevalent in such sites. Though this may not be common, it is wise to control and observe the little leaks and spills that would occur especially during maintenance of the involved vehicles.

##### ***Mitigation Measures***

- ❖ All machinery should be keenly observed not to leak oils on the ground. This can be ensured through regular maintenance of the construction machines and equipment's.



- ❖ 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 oils into the soil/water systems.
- ❖ All oils/grease and materials should be stored in a site's store.

#### **6.2.2.9 Public Health and safety**

During construction the movement of construction material may result in accidents if good supervision is not provided. Accidental cuts and bruises are common among construction workers as a result the use machinery and hand tools, an impact that needs careful consideration. Requiring similar attention will be, flammable liquids such as fuels and lubricants, which at some point of the project cycle will be stored at the site for use in vehicles and construction equipment. Leakage or spillage of such substances may result in fires that may cause considerable losses in terms of injury to persons and damage to property. These may also occur at any time during construction, decommissioning and operational stages of project, safety risks resulting from any leftover electrical cables, uncovered manholes and steel structures. These may cause injury to passers-by if this phase is not well handled.

#### **Mitigation measures**

- ❖ Adequate collection and storage of waste on site and safe transportation to the disposal sites and disposal methods at designated areas shall be provided.
- ❖ Provide appropriate personal protective equipment, as well as ensuring a safe and healthy environment for construction workers
- ❖ A fully equipped first aid kit should be provided at the site.
- ❖ The workers, immediate neighbour and other stakeholders should be sensitized on the dangers and risk associated with the construction works for enhanced self-responsibility on personal safety.
- ❖ The proponent should ensure that the completed buildings are fitted with safety facilities including fire detectors, firefighting equipment, fire exits, adequate access and buffer between the residential premises.
- ❖ Disabled access features and safety signage should be placed strategically around and within the buildings.
- ❖ Appropriate sanitation conveniences should be provided at the site as required in the OSHA, 2007 and echoed in the Public Health Act.

### **6.3 OPERATION PHASE**

#### **6.3.1 POSITIVE IMPACTS**

##### **6.3.1.1 Employment creation**

Employment opportunities are one of the long-term major impacts of the proposed hotel development that will be realized after construction and during the operation and maintenance of the facility. These will involve working crew such as housekeepers, receptionist, cooks, and security guards among other ancillary staff as may be required.

#### **6.3.1.2 Ease of access to recreational facility**

During the operational phase, the proposed facility will provide much needed goods and services to local residents, recreational facilities such as the swimming pool, and health fitness facilities from the gym among others based on individual needs.

#### **6.3.1.3 Increased revenue**

Indeed the county and national government will benefit from the proposed development in terms of levies and permits paid from the hotel industry. The hotel will also attract international tourists thereby bringing about foreign exchange in the country. The project will also contribute towards improving the property values in the vicinity.

### **6.3.2 NEGATIVE IMPACTS**

#### **6.3.2.1 Increased pressure on infrastructure**

The development will definitely increase the population of people seeking hospitality services in this locality. This will no doubt increase the pressure on existing infrastructure like roads, water reticulation system, electricity etc.

#### **Mitigation measures**

- ❖ Provide adequate parking space within compound to avoid parking on road reserve
- ❖ Liaise with relevant county and national authorities for proper installation of these services i.e roads, water, electricity etc.
- ❖ The proponent should as well explore alternative means which are environmentally sound like employing the Green Energy Technologies when and where applicable like the proposed use of Solar Panels in water heating, among others. This will rather reduce the over dependence on fossils based energy sources which are presently threatened.

#### **6.3.2.2 Solid Waste**

The project is expected to generate solid waste during its operation phase. The bulk of the solid waste generated during the operation of the project will consist mainly of organic wastes, packaging wastes amongst others. Such wastes can be injurious to the environment through blockage of drainage systems, choking of water bodies and negative impacts on animal health. Some of these waste materials especially the plastic/polythene are not biodegradable hence may cause long-term injurious effects to the environment if appropriate care is not taken. Even the biodegradable ones such as organic wastes may be injurious to the environment because as they decompose, they produce methane gas, a powerful greenhouse gas known to contribute to global warming.

#### **Mitigation measures**

- ❖ Install a waste receptacle within the compound
- ❖ The waste materials should be properly segregated and separated to encourage recycling of some of them.

- ❖ The proponent should hire services of a waste management company to ensure all waste is dumped appropriately
- ❖ Employ garbage collectors/monitors.
- ❖ Collection of waste should be regular to avoid rotting on site.
- ❖ Put labels on site where to dispose of waste.
- ❖ Proper transportation of waste to prevent spreading along the way.

#### **6.3.2.3 Liquid Waste**

Another major source of pollution and concern if not properly addressed. Indeed this is a greater source of pollution and danger to human health than even solid waste. The proponent will ensure that there are adequate means for handling the large quantities of sewage generated from the proposed development. The sewer will be connected to a sewer line.

#### **Mitigation measures**

- ❖ Connection to the sewer line since the area is served by the city sewer
- ❖ Proper installation of drainage/sewer lines by qualified technicians
- ❖ Frequent monitoring of the internal drainage system.
- ❖ It will also be important to ensure that sewage pipes are not blocked or damaged so that the waste can be delivered to the sewer line since such vices can lead to release of the effluent, resulting in land and water contamination.
- ❖ Blockages or damages should be fixed expeditiously.
- ❖ Wastewater shall be disposed in compliance with the provisions of the Environmental Management and Coordination (Water Quality), Regulations 2006.

#### **6.3.2.4 Security**

Security is a fundamental aspect to consider in any business venture. Good security ensures that materials and equipment are not stolen or vandalized from site and that business activities are not disrupted with during the normal working hours.

#### ***Mitigation Measures***

- ❖ A proper security system should be installed especially due to increased terrorist attacks by 'alshabaab' militants.
- ❖ Lighting should be well maintained.
- ❖ There should be security guards stationed on site to monitor movements of people in and out of the site area.

#### **6.3.2.4. Fire safety**

Fire safety measures have been well considered in this project. Fire outbreaks are common occurrences in many premises mainly due to poor installation of electric devices or poor handling of fire equipment's or flammable substances. In this development proposal, proper care will be taken so as to minimize chances of fire outbreaks.

#### ***Mitigation Measures***

- ❖ Hire of competent and properly authorized contractor electrical contractor to do the wiring and other electrical works.
- ❖ Ensure that all firefighting equipment's installed are regularly maintained and serviced

- ❖ Train workers on fire fighting
- ❖ Clearly mark the fire exits and fire assembly place
- ❖ Display a fire action plan within the premises
- ❖ Display emergency numbers within the premises

#### **6.3.2.5 Traffic congestion**

The proposed development will definitely lead to an increase in the number of vehicles in the locality leading to increased traffic.

##### **Mitigation measures**

- ❖ Provide adequate parking spacing within the compound
- ❖ All vehicles should be parked on the designated parking
- ❖ No parking should be done on the roadside.

#### **6.3.2.6 Noise pollution**

The hotel once operational there will be noise emanating from the club lounge which will cause disturbance to the residents and also occupants of the hotel.

##### **Mitigation measure**

- ❖ The club lounge should be sound proofed to avoid such incidences of noise pollution.

#### **6.3.2.7 Rodent/pest infestation**

This was a major concern raised during public participation by the management of white oak park apartments as they had an issue of rat infestation from the previous hotel located in project site.

##### **Mitigation measure**

- ❖ Regularly inspect the premises for signs of rats/ pest infestations on a fortnightly or monthly basis, including mattresses' and beds; store rooms; food stores; kitchens and waste retention areas.
- ❖ Remedy any situation found through inspection as soon as possible to minimize the impact and spread of the infestation
- ❖ Professional pest/rodent control input should always be used

#### **6.3.2.8 Efficient energy consumption**

The proponent should install an energy-efficient lighting system at the proposed hotel development. The development design should be in such a manner that natural daylight reaches most areas of the building therefore reducing the need for excessive additional lighting. This will contribute immensely to energy saving during the operational phase of the project.

##### **Mitigation measures**

- ❖ Monitor energy use during the operation of the proposed development and set targets for efficient energy use.

- ❖ Embrace the spirit of Green Energy Technology through the use of Solar Panels for water heating.

#### **6.3.2.9 Increased water utilization**

The proponent will install water-conserving automatic taps or push type taps. Moreover, any water leaks resulting from damaged pipes and/or faulty taps, will be promptly fixed by qualified staff. In addition, the proposed hotel development clientele will be sensitized on efficiently water utilization through posters.

#### **6.3.2.10 Water Pollution**

If the sites for dumping solid wastes are not well managed, they may cause contamination of ground water sources and also form breeding areas for various disease vectors.

#### **Mitigation measure**

- ❖ The proponent will put in place an efficient waste management scheme that will prevent the accumulation of uncontrolled waste, as well as an efficient collection system and off-site disposal.

#### **6.3.2.11 Air Pollution**

Poor solid waste management could lead to blocking of drains especially once the Proposed development is up and running and this can lead to flooding and unsanitary conditions within the site and more so to its environ. Blocked drains produce bad odour hence are environmentally unfriendly.

#### **Mitigation measure**

- ❖ The project management proposes to have good controlled and well management waste management to avoid this from occurring.

### **6.4 SITE DECOMMISSIONING PHASE**

No project would exist forever, at some point the site would be demolished and the space it had occupied be restored to its original form. This exercise would have some impacts to the environment. The following takes place during decommissioning:-

- All foundations must be removed and recycled, reused or disposed of at a licensed disposal site
- Where recycling/reuse of the machinery, equipment, implements, structures, partitions and other demolition waste is not possible, the material should be taken to a licensed waste disposal site.
- Donate reusable demolition waste to charitable organizations, individuals and institutions
- Implement an appropriate re-vegetation programs to restore the site to its original status
- Consider use of indigenous plant species in re-vegetation.



- Trees should be planted at suitable locations so as to interrupt sight lines (screen planting), between the adjacent areas and the development.

The above activities would also have some impacts to the environment, this would involve:-

- Occupational health risks like cuts and bruises.
- Production of solid, liquid and gaseous waste.
- Pollution of air with dust particles.
- Likely spillage of fuel, oil and grease.
- Vibration caused by the site construction equipment's and machines e,g drilling machines.
- Landscaping the land to its original form.
- All buildings, machinery, equipment, structures and partitions that will not be used for other purposes must be removed and recycled/reused.

## CHAPTER SEVEN

### 7.0 PROJECT ALTERNATIVES AND PROPOSED ACTION

#### 7.1 Analysis of Alternatives

Alternatives to the project, including the no action alternative will be presented in this section, as well as the historical use of the overall area in which the project site is located. These alternatives will be discussed from environmental and socio-economic perspectives.

#### 7.2 The No-Action Alternative

Without the proposed development, the location will remain in its current underutilized state. This no-action alternative in itself, presents environmental concerns, as the site in its current state is underutilized. From a socio-economic perspective, the no-action alternative will definitely not yield any benefit to the proponent and the surrounding communities. This alternative would mean that the project does not proceed which would have the following advantages

- Air pollution from dust and smoke as a result of the site events would not occur.
- No noise would emanate from the site thus no disturbance.
- There would be no water shortage or overuse.

##### Disadvantages

- There will be no creation of employment
- There will be no additional facility to drive socio-economic development
- There will be no secondary development as a result of the project
- The value of land might improve but it will remain underutilized.
- The expected income in the form of profits to the proponent and in the form of taxes to the government will not be realized.

#### 7.3 Relocation alternative

This is the other decision the proponent can make but unfortunately they currently do not have another site where they could put up the project. Meaning this alternative is not available to them.

#### 7.4 Alternative Construction Materials and Technology

The proposed project will be constructed using modern, locally and internationally accepted materials to achieve public health, safety, security and environmental, as well as aesthetic, requirements. Equipment that saves energy and water will be given first priority without compromising on cost or availability factors. The concrete pillars and walls will be made using locally sourced stones, cement, sand (washed and clean), metal bars and fittings that meet the Kenya Bureau of Standards requirements.

The alternative technologies available include the conventional brick and mortar style, prefabricated concrete panels, or even temporarily structures. Due to cost and durability, the brick and mortar style is the most popular more so in Kenya. The scale and extent of the

project is determined by design, the plot size and funds available. Other various technologies available include; concrete frame construction, timber construction, prefabricated space frame construction, steel frame and aluminum frame. The technology to be adopted will be the most economical and one sensitive to the environment. Heavy use of timber during construction is discouraged because of destruction of forests. The exotic species would be preferred to indigenous species in the construction where need will arise.

### **7.5 Comparison of Alternatives**

Under the NO Action alternatives, no activity would be allowed therefore, there would neither be benefits from the project nor the significant effects. Under the proposed development alternatives, the proposed development would create employment opportunities as well as increasing the number of churches to offer spiritual guidance and eventually benefit the general public.

Provided the mitigation measures are implemented and best management practices adopted, insignificant impacts on soils and water quality are anticipated. Full implementation of the EMP as well as regular evaluation and monitoring would ensure that potential impacts are avoided or reduced to levels of insignificance.

### **7.6 Liquid Waste Management Alternatives**

The five locally available technologies for this type of waste are discussed below:-

#### **7.6.1 Alternative one: Use of stabilization ponds/lagoons**

This refers to the use of a series of ponds/lagoons that allow several biological processes to take place, before the water is released back to the river. The lagoons can be used for aquaculture purposes and irrigation. However, they occupy a lot of space but are less costly. No chemicals are used, heavy metals sink and decomposition processes take place. They are usually a nuisance to the public because of smell from the lagoons/ponds. This option is not preferable in the area because the required space is not available.

#### **7.6.2 Alternative Two: Use of Constructed/Artificial wetland**

This is one of the powerful tools/methods used in raising the quality of life and health standards of local communities in developing countries. Constructed wetland plants act as filters for toxins. The advantages of the system are the simple technology, low capital and maintenance costs required.

#### **7.6.3 Alternative three: Use of Bio digester boxes /septic tanks**

This involves the construction of underground concrete-made tanks to store the sludge with soak pits. This option is viable in instances where the project is far from a sewer line. The method is made expensive due to construction technology and regular exhaustion. However, bio digesters/ septic tanks are viable for small scale housing projects only because they handle little volumes of liquid waste.

#### **7.6.4 Alternative Four: connection to the County Sewer System**

Connection to the County Sewer line will solve the wastewater management issue at a very minimal cost and in an environmentally efficient manner. This alternative is available for the proponent at the moment since the area is served by a sewer line.

#### **7.6.5 Alternative Five: Waste Water Treatment Plant**

This involves the construction of a plant and use of chemicals to treat the effluents to locally accepted environmental standards. It is usually expensive to construct and maintain, but it is the most reliable, efficient and cost-effective in the long term. The sludge obtained can be composted and used for agricultural and gardening purposes. In conclusion, due to the size of the proposed project, the proponent will have two major options for liquid waste management i.e. construction of a waste water treatment plant and connection to the existing sewer line.

***The most suitable to adopt in this project is alternative four and five.***

#### **7.6.6 Solid Waste Management Alternatives**

A lot of solid wastes will be generated from the proposed project. An integrated solid waste management system is recommendable. First, the proponent will give priority to Waste Reduction at Source of the materials. This option will demand a solid waste management awareness programme among the management and the users of the facility.

Secondly, Recycling, Reuse and composting of the waste will be the second alternative in priority. This will call for a source separation programme to be put in place. The recyclables will be sold to waste buyers within the county and its environs.

The third priority in the hierarchy of options is combustion of the wastes that are not recyclable.

Finally, sanitary land filling will be the last option for the proponent to consider.

### **7.7 Water Supply**

Water is becoming a scarce resource day by day in most parts of the country. Therefore, the proponent should look into methods of sustaining water supply.

#### **7.7.1 Alternative one - Rain Water Harvesting**

Rain water flowing into drainage systems during wet seasons should be harvested and used for various purposes. In addition, a lot of water can also be harvested from roofs of buildings that will be put up in the project site. This water can be used for watering flower gardens and grass lawns, flushing toilets and general cleaning.

#### **7.7.2 Alternative two – Tanker/Bowsers Water Supply**

Several commercial water supply companies operate in Nairobi. These are usually licensed by Water Resources Management Authority (WRMA) to supply water to clients when normal NWSC water supply system is cut-off. The proponent can use these services as a supply

option. However, this option is not sustainable since it's expensive and there is no guarantee of being supplied with clean water.

#### **7.7.3 Alternative three – Drilling of a Borehole**

The proponent will undertake hydro-geological studies of the proposed project site and obtain permits from the Water Resource Management Authority (WRMA). An EIA will be conducted for purposes obtaining a NEMA licence to sink a borehole within the Development. Water supply from the borehole will cover the water supply deficits experienced from other water supply sources.

#### **7.7.4 Alternative four – Combined Water Supply**

This option should be considered by the proponent. The proponent intends to connect water from Nairobi water and Sewerage Company. Though the area is most of the time supplied with piped water from the council, an additional water source should be sought after to supplement water from the council. E.g drilling of 1 production borehole to supplement the county water.

## CHAPTER EIGHT

### 8.0 ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS

The environmental management plan (EMP) involves risk management strategies that should be undertaken by the project proponent, project manager and the residents to mitigate environmental degeneration. They are approaches to monitor, control, reclaim and restore the environment back to its appropriate state. EMP's for projects thus provide logical frameworks within which the identified issues of environmental concern can be mitigated, monitored and evaluated.

Environmental monitoring involves measurement of relevant parameters, at a level of details accurate enough, to distinguish the anticipated changes. Monitoring aims at determining the effectiveness of actions to improve environmental quality.

The environmental management and monitoring plans has been developed and outlined to bring home the key findings of the Environmental Impact Assessment of the project, recommending necessary mitigation actions, defining roles and the estimated cost.

The EMP outlined in the tables below addresses the potential negative impacts and mitigation measures as well as roles and costs that can help to determine the effectiveness of actions to upgrade the quality of environment; as regards the proposed project.

The EMP has considered construction, operational and decommissioning phases.

#### 8.1 THE FOLLOWING IS THE RECOMMENDED EMP FOR THIS PROPOSED PROJECT

TABLE 1: PLANNING PHASE

Activity	Impact	Standard/guideline	Mitigation Measure	Monitoring	Responsible Party	Time Frame	Estimate Cost (Kshs)
Sourcing for all necessary documentation	No impact	Physical planning Act, Local authorities Act and	Compliance with the relevant	Licenses and permits	Proponent		1,000,000



e.g. plan, title deed, approvals etc.		other relevant regulatory controls.	regulatory controls				
---------------------------------------	--	-------------------------------------	---------------------	--	--	--	--

**TABLE 2: SITE PREPARATION PHASE**

Activity	Impact	Standard/ Guideline	Mitigation measure	Monitoring	Responsible Party	Time frame	Estimate Cost (Kshs)
Site clearance and excavations	Noise pollution	Factories and other places of work Act	Ensure proper maintenance of vehicles transporting any wastes from the clearing and any machinery in use for excavation to reduce noise levels to below 68 Db.  Ensure no hooting in the project site.  Provide workers with ear muffs and enforce wearing of the same	Maintenance records Random checks  Spot checks	Contractor  Project manager  Project manager	Weekly   continuous	500,000
	dust, health risks and nuisance to workers and neighborhoods	EMCA, Public Health Act Factories and Other Places of Work Act	Ensure workers have and wear personal protective equipment to guard them from dust and other hazards.	Daily and spot checks	Project manager   Project manager	Continuous   One-off	20,000

	Solid waste generation	EMCA, Building Code	Any waste generated should be disposed appropriately.	Condition of the site			
Transportation of building materials	Noise pollution	EMCA, Factories and other work places Act	Delivery vehicles to undergo regular maintenance.	Maintenance records-weekly	Contractor	Continuous	200,000
			Hooting should be discouraged in the project site.	Spot checks	Project manager	Continuous	
			proper budgeting so as to minimize trips made by the vehicles	Daily requirements to be drawn in a work plan	Project manager	Continuous	
	Dust and fume emissions	EMCA, Factories Act, Public Health Act	Regular maintenance of delivery vehicles	Keep weekly maintenance records	Contractor	Continuous	
	Strain of other road users		No parking of delivery vehicles along the roads	Spot checks	Project manager	continuous	
				Daily checks	Project manager	Continuous	
Storage of building materials	space Utility	Factories and other places of work Act	Order materials in bits so as to use less space for storage.	Pre-planned procurement records	contractor	continuous	Nil
Liquid waste generation.	Water and soil contamination	Water Act and EMCA	Ensure regular Machinery/vehicle maintenance to avert any engine leakages	Keep Maintenance records	Contractor	Continuous	30,000
				Daily checks	Project manager	Continuous	

			There should be no water accumulation on site				
Occupational activities	Occupational hazards, workers health, safety and sanitary requirements	Factories and other places of work Act	Establish a site office	To be operational always	Contractor/project manager	One-off	<b>40,000</b>
			provide adequate sanitary facilities				
			Supply and enforce wearing personal protective equipment	Daily spot checks	Project manager	Continuous	
			regular review on health, safety and environment	Accident records to be kept	Project manager	Weekly	

**Table 3: CONSTRUCTION PHASE**

Activity	Impact	Mitigation measure	Monitoring	Responsible party	Time Frame	Estimate Cost (Kshs)
Vehicle movement	fume emission	Regular vehicle maintenance	Pre identified point for material storage	Project manager	Continuous	<b>20,000</b>
		Limit delivery vehicles to a certain point only	Weekly maintenance records	Contractor	Continuous	
		Turn off vehicle engine when not in use		Project manager	Continuous	
		Sensitise truck drivers to avoid unnecessary racing of vehicle engines at loading/offloading points and parking	Spot checks	Project manager	Continuous	

		areas, and to switch off or keep vehicle engines at these points	Constant checks			
	Dust emission	Sprinkle water on the access road before deliveries are made	Follow Prior work plan	Contractor, engineer, project manager	1 month	<b>400,000</b>
	Noise pollution	Sensitise construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used.			1 month	<b>40,000</b>
		sensitize drivers not to hoot on site or when passing through sensitive areas such as churches, residential areas and hospitals		Architect, landscape specialist , Project manager		
		Budget and plan properly to make few and necessary trips				
	Vegetation/biodiversity disturbance	Ensure proper demarcation and delineation of the project area to be Affected by construction works.			2 months	<b>750,000</b>
		Specify locations for trailers and equipment, and areas of the site which should be kept free of traffic, equipment, and storage				
		Design and implement an appropriate landscaping programme to help in revegetation of part of the project area after construction				

Excavation	Dust emission	<p>Avoid excavation works in extremely dry weathers</p> <p>Sprinkle water on graded access routes when necessary to reduce dust generation by construction vehicles</p> <p>Personal Protective equipment to be worn</p>	Constant checks	Project manager & contractor	Through-out the entire project cycle	<b>10,000</b>
High demand of raw construction materials	<p>Pollution (air, land water)</p> <p>Inefficient use of raw materials in the construction</p>	<p>Source building materials from local suppliers who use environmentally friendly process in their operations</p> <p>Ensure accurate budgeting and estimation of actual construction material requirements to ensure that the least amount of material necessary is ordered</p> <p>Ensure that damage or loss of materials at the construction site is kept minimal through proper storage</p>	Check for necessary permits from government agencies	Contractor/ project manager	Through- out the project	<b>700,000</b>
	Road users strain	Ensure delivery vehicles are not parked along the roads	Daily checks	Project manager	Continuous	<b>Nil</b>
Machine operations	Noise and excessive vibration	<p>Ensure that construction machinery are kept in good condition to reduce noise generation.</p> <p>Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures to minimize ambient noise levels.</p>	Routine checks	<p>Project manager</p> <p>Contractor / site foreman</p>	Throughout the project cycle	<p><b>70,000</b></p> <p><b>150,000</b></p>

		<p>The noisy construction works will entirely be planned to be during daytime when most of the neighbours will be at work.</p> <p>Comply with the provisions of Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 regarding noise limits at the workplace</p>		<p>Project manager/ contractor</p> <p>Project manager /contractor</p>		<p><b>Nil</b></p>
Energy consumption	Increased operational cost	<p>Budget properly to reduce unnecessary trips</p> <p>Ensure electrical equipment, appliances and lights are switched off when not being used</p> <p>Install energy saving fluorescent tubes at all lighting points instead of bulbs which consume higher electric energy</p> <p>Monitor energy use during construction and set targets for reduction of energy use.</p>	Comply with fuel budgets	<p>Contractor/project manager</p> <p>Contractor /project manager Contractor /project manager</p>	continuous	<p><b>50,000</b></p> <p><b>5,000</b></p> <p><b>10,000</b></p> <p><b>2,500</b></p>



Stone shaping, concrete mixing and general Building works	Noise pollution	Workers to wear personal protective equipment all time i.e. overall, helmet, earmuffs and dust masks  Work to be done at day time only (8a.m-5p.m)  Machinery in use like concrete mixers should undergo regular maintenance	Daily checks  Drawn work schedule  Keep maintenance records	Project manager  Project manager  Contractor	Continuous  continuous	<b>100,000</b>
Roofing; steel cutting and welding, wood cutting and joining	Noise pollution	Work to be done over a short period of time but accurately  Work to be limited to daytime only between 8a.m and 5p.m	Work plan to be drawn	Project manager	One off	<b>Nil</b>
Water use	High water bills	Conserve and use water responsibly.  Install water conserving taps that turn-off automatically when water is not being used Promote recycling and reuse of water as much as possible.  Install a discharge meter at water outlets to determine and monitor total water usage  Promptly detect and repair of water pipe and tank leaks  Sensitise staff to conserve water by	Records of water used weekly       Routine checks  Routine checks	Project manager/Team  Project manager  Contractor/proponent  Management team	Continuous   Continuous  Continuous	<b>50,000</b>     <b>30,000</b>  <b>5,000</b>

		avoiding unnecessary water use  Ensure taps are not running when not in use	Spot checks	Management team  Facility users		<b>2,500</b>
Solid waste generation	Soil, air and water pollution	Use materials which generate minimal wastes from their package  Order through strict budget what is just enough to avoid surplus wastage.  Use some of the wastes generated in other projects.  Ensure proper waste management procedures.  Any waste to be disposed at approved dumping site.	Keep records of waste produced weekly	Project manager	Continuous	<b>40,000</b>
General construction activities/occupational, health and safety	Health issues, accidents and unsafe conditions for the workers	Brief first aid training to all workers before projects' start.  Provide all workers with personal protective equipments and enforce them to wear.  provide clean drinking water and proper sanitary facilities for workers use.  Put up warning/informative signs wherever required.  Establish an emergency response plan to attend to any emergency case.	Daily spot checks and follow up.	Project manager/contractor	Continuous	<b>50,000</b>

	General register	Sensitize all workers at start of initial works about looming risks.		Project manager/ contractor	Once-off	1,500
	Posting of abstract of Act, rules and notices	A general register should be kept within the facility as stipulated in Sec 122&123 of the Occupational Safety and Health Act, 2007.		Project manager	Once-off	3,000
	Incidents, accidents and dangerous occurrences	There shall be displayed at prominent places within the site the prescribed abstract of the OSHA and the relevant notices as stipulated in section 121 of the OSHA, 2007.	Daily checks	Project manager	Continuous	
		Ensure that provisions for reporting incidents, accidents and dangerous occurrences during construction using prescribed forms obtainable from the local Occupational Health and Safety Office (OHSO) are in place				
		Enforcing adherence to safety procedures and preparing contingency plan for accident response in addition safety education and training shall be emphasized.				
Finishing works e.g. painting	Low value appearance	The proponent and the contractor should ensure final appearance of the buildings are of good aesthetic value	Keenly follow a painting design	Project Manager/Team	One-off	Nil

Electricity installation	Increased operation cost	Apply for transformer fixing by KPLC Authority	Pre planned schedules	Proponent	One-off	100,000
Generation of waste water	Water /land/ air pollution	Provide means for handling sewage generated by construction workers	Engineer	Spot checks	Once-off	10,000
		Conduct regular checks for pipe blockages or damages since such vices can lead to release of the effluent into the land and water bodies	Project manager /contractor		Throughout the construction	50,000
		Monitor effluent quality regularly to ensure that the stipulated discharge rules and standards are not violated	Project manager /contractor			

**Table 4: COMMISSIONING PHASE**

Activity	Impact	Mitigation measure	Monitoring	Responsible party	Time frame	Estimate Cost (Kshs)
water consumption	Increased consumption of water	Encourage water use responsibly and conservation.	Follow trends of water used up	Proponent and facility users	Continuous	100,000
		Optimise water use efficiency with modern installations.		Property manager	One-off	
		Promptly detect and repair of water pipe and tank leaks		Property manager	Continuous	

		Install a discharge meters at water outlets to determine and monitor total water usage		Developer	One-off	
Increased electricity usage	Increased operation cost	<p>Switch off all electricity not in use.</p> <p>Most efficient lighting system to be installed.</p> <p>Install occupation sensing lighting at various locations such as the parking areas which are not in use all the time.</p> <p>Monitor energy use during the operation of the project and set targets for efficient energy use</p> <p>Sensitise workers and the clientele to use energy efficiently</p>	Keenly follow electricity bills	<p>Proponent and facility users</p> <p>Developer</p>	One-off	<p><b>100,000</b></p> <p><b>10-40% higher than ordinary lighting</b></p> <p><b>3000/month</b></p> <p><b>1000/month</b></p>
Club lounge	Noise	<p>Adhere to the permissible levels of 40 decibels during the day and 35 decibels at night</p> <p>Sound proofing the club</p>		Proponent	continuous	<b>500,000</b>
Generation of sewage, waste water and storm water.	Soil, water contamination and health risks	<p>Ensure the sewer drainage structures are large and sufficient and are working well and maintenance is done.</p> <p>All sewage to be directed to the sewer line.</p>	Keep maintenance records	Proponent	Continuous	<b>50,000</b>

		<p>Conduct regular inspections for pipe blockages or damages and fix appropriately</p> <p>Ensure regular monitoring of the Sewage discharged from the project to ensure that the stipulated sewage/effluent discharge rules and standards are not violated.</p> <p>Design and construct water treatment plant/s so as to recycle wastewater generated from the development.</p> <p>Comply with the provisions of Environmental Management and Co-ordination (Water Quality) Regulations 2006</p>		<p>Project manager/ proponent</p> <p>Proponent</p> <p>Proponent /management</p>	<p>Quarterly</p> <p>One-off</p> <p>Continuous</p>	<p><b>20,000</b></p> <p><b>2,000,000</b></p> <p><b>Nil</b></p>
Solid waste generation	Air, water and soil pollution and blockage of drainage	<p>Ensure proper solid waste management plan</p> <p>Appoint a cleaning firm to collect wastes</p> <p>Ensure all solid waste doesn't end in drainages to avoid blockage.</p>	Weekly checks whether collection is done	Proponent	continuous	<b>30,000</b>
General project operations Health and safety hazards	fire risk and other occupational hazards	<p>All fire- fighting equipments to be serviced and maintained regularly</p> <p>Ensure emergency call numbers are posted at strategic points</p> <p>Train staff on fire- fighting and first aid</p>	<p>Keep maintenance records</p> <p>Spot checks</p>	<p>Proponent</p> <p>Proponent/Facility head.</p> <p>Proponent/management</p>	<p>Continuous</p> <p>Continuous</p> <p>Quarterly</p>	<p><b>50,000</b></p> <p><b>50,000</b></p>



		Clearly mark all fire exits and designate a fire assembly area.		Proponent	One-off	<b>20,000</b>
		Have several first aid boxes at various sections in the hotel.		Proponent/management	One-off	<b>100,000</b>
		Maintain a register for accidents/injuries		Management	One-off	<b>1,000</b>
	Pest/rodent infestation	Regularly inspect the premises for signs of pests/rodents at the store rooms; food stores; kitchens and waste retention areas	Keep inspection records	Proponent	Monthly	<b>200,000</b>
		Remedy any situation found through inspection as soon as possible to minimize the impact and spread of infestation	Keep records on methods used to mitigate the problem			
		Professional pest/rodent control input should always be used				
Emergency preparedness and evacuation procedure	Injuries/loss of life	Design suitable documented emergency preparedness and evacuation procedures to be used during any emergency	Keep records of emergency drills	Proponent	One-off	
		emergency procedures must be tested at regular intervals		Management team	Quarterly	<b>10,000</b>
Environmental compliance		Undertake an environmental audit within 12 months after operation commences as required by law	Annual environmental audits	Proponent/management	12 months after operation	<b>100,000</b>
International/local facility users	Security issues	Install security alarms Ensure the security guards are adequately trained Conduct security search before a person enters the hotel	Daily checks	Proponent and management/security team	Continuous	<b>To be determined</b>



**TABLE 5: DECOMMISSIONING PHASE**

Activity	Impact	Mitigation Measure	Monitoring	Responsible party	Time frame	Estimate Cost (Kshs)
Demolitions	Noise pollution,  dust emission and fume emissions	Demolition work to be done at daytime only (8a.m-5p.m)  Proper maintenance of machinery to be used if any  Ensure no hooting in the project site.  Carry out this exercise as fast as possible  Workers to wear personal protective equipment  All buildings, machinery, equipment, structures and partitions that will not be used for other purposes must be removed and recycled/reused as far as possible	Pre- planned work plan  Keep maintenance records  Spot checks  Spot checks	Contractor/Prop onent	One-off	100,000
Generation of solid waste	Soil, air and water contamination	Donate waste to other parties to make better use of it e.g. road constructors.  Re-cycle some waste in other projects elsewhere  Ensure all solid waste is composed.	Disposition plan	Contractor	One-off	50,000

Excavations and restoration of original landscape	Noise pollution, dust emission and fume emission	<p>Excavation work to be done at daytime only (8a.m-5p.m)</p> <p>Workers to wear personal protective equipments</p> <p>Carry out this exercise within a short span of time</p> <p>Proper maintenance of any machinery in use</p> <p>plant some ground cover to avert soil erosion</p> <p>Implement an appropriate revegetation programme to restore the site to its original status</p> <p>Consider use of indigenous plant species in re-vegetation</p> <p>Trees should be planted at suitable locations so as to interrupt slight lines (screen planting), between the adjacent area and the development.</p>	<p>Follow drawn work plan</p> <p>Spot check</p> <p>Maintenance records</p>	Contractor/Prop onent	One-off	<b>50,000</b>
---	--	---	--	-----------------------	---------	---------------

## CHAPTER NINE

### 9.0 CONCLUSION AND RECOMMENDATIONS

#### 9.1 CONCLUSION

There is no doubt this Town, the county as well as the country needs this type of development. Given that the envisaged project if allowed is not likely to create any unmanageable negative environmental impacts and further given the proponent undertaking to implement the EMP, the Town and by extension the residents of this town will benefit more by permitting the project as opposed to maintaining the *status quo*. Indeed during implementation the facility will create both direct and indirect employment opportunities another major policy objective of both governments.

It is our considered opinion that the proposed project should be permitted. NEMA and other approving authorities of course reserve the right to impose any *reasonable* condition for the greater good of society.

Focus shall be put to minimize the occurrence of negative impacts that would degrade the environment while exploiting those impacts that are positive.

Finally, the project proponent has promised to work closely with environmental experts, residents, county authorities and NEMA to ensure full implementation of EMP. This will ensure that environmental concerns are integrated into the project process.

The proponent will ensure that the facility is approved by the relevant regulatory departments as, County Government, NEMA, health etc. the proponent should therefore follow guidelines as set by the government to safeguard EMP principles during the construction and operation phases of the proposed project.

#### REFERENCES:

Environmental Management & Coordination Act 1999

The Environmental (Impact Assessment & Audit) regulations, 2003.

Physical Planning Act 1996 (Cap 286)

Urban areas and Cities Act.

Public health Act.

Way leave Act Cap 292

Water Act 2002.

Factories and other places of work Act.

Policy guidelines on environment and development.

Environmental Impact Assessment & Audit regulations.



## **ANNEXES**

**Annex I: Copy of land title**

**Annex II: Copy of P.P.A 2**

**Annex III: Duly filled public participation questionnaires**

**Annex IV: EIA Experts practising licences**

**Annex V: Google map for the project site**

**Annex VI: Curriculum vitae of project team**

**Annex VII: Approved drawings (architectural & structural)**



THIS

28<sup>th</sup>

DAY OF OCTOBER

2015

GLADWELL GATERI

-to-

HEARAN ENTERPRISES LIMITED

TRANSFER

Of

L.R NUMBER 1/356 (ORIGINAL NO. 1/347/4)

NAIROBI

DRAWN BY:-

IGERIA & NGUGI

Advocates

8<sup>th</sup> Floor, Hughes Building

Kenyatta Avenue

P.O. Box 60635

Nairobi 00200

Tel: +254 (020) 2224100

Fax: +254 (020) 2224552

E-mail: [info@attomeysafrica.com](mailto:info@attomeysafrica.com)



10/10/2015  
KShs. 390,000,000/-  
29/10/2015

REPUBLIC OF KENYA  
REGISTRATION OF TITLES ACT  
(CHAPTER 281)  
TITLE NUMBER I.R. 13888  
TERM: FEE SIMPLE



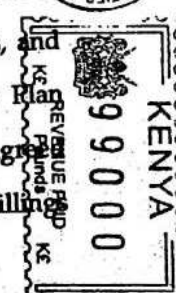
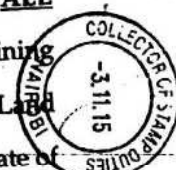
TRANSFER

THIS INSTRUMENT OF TRANSFER is made the 28<sup>th</sup> day of OCTOBER Two Thousand and Fifteen Between GLADWELL GATERI of P.O. Box 610 Embu in the Republic of Kenya hereinafter referred to as "the Transferor" which expression shall include where the context so admits her personal representatives and assigns) of the one part and HEARAN ENTERPRISES LIMITED of Post Office Box Number 56739-00200 Nairobi aforesaid (hereinafter referred to as "the transferee" which expression shall where the context so admits include its successors and assigns) of the other part.



WHEREAS:-

The Transferor is the registered proprietor of an estate in fee simple (subject however to such Acts, Charges, Leases and Encumbrances as are notified in the memorandum endorsed hereon) of ALL THAT piece or parcel of land situate in the City of Nairobi in the Nairobi Area District containing by measurement Nought Decimal Eight Eight Two (0.882) hectares or thereabouts and being Land Reference Number 1/356 (Original Number 1/347/4) being the premises comprised in a Certificate of Title registered as I.R. 13888 at the Land Titles Registry at Nairobi the dimensions, abutments, and boundaries of which are more particularly delineated on as delineated on Land Survey Plan Number 50913 annexed to the Transfer registered as Number IR 9557/20. The Transferor has agreed to sell and the Transferee has agreed to buy the said piece of land at the price of Kenya Shillings Three Hundred and Ninety Million only (KShs. 390,000,000.00).



R.C.C. No. D11309 of 13-10-2015

**REPUBLIC OF KENYA**  
**REGISTRATION OF TITLES ACT**  
**(CHAPTER 281)**  
**TITLE NUMBER I.R. 13888**  
**TERM: FEE SIMPLE**

**TRANSFER**



**REPUBLIC OF KENYA**  
**REGISTRATION OF TITLES ACT**  
**(CHAPTER 281)**  
**TITLE NUMBER I.R. 13888**  
**TERM: FEE SIMPLE**

**TRANSFER**





**IN WITNESS WHEREOF** the Transferor and the Transferee have set their hands the day and year herein first mentioned.

**E. NJERU GICHOMI**  
**ADVOCATE**  
P. O. Box 10627-00200 JK  
TEL: 0713 663 193

) )  
) )  
) )  
) )  
) )  
) )

) SIGNATURE ..... *Gaten* .....

**E. NJERU GICHOVI.**  
ADVOCATE.  
P. O. Box 10627-00200 NR  
TEL: 0713 663 193

**Address:**

SEALED by the said TRANSFeree )

HEARAN ENTERPRISES LIMITED)

In the presence of )

DIRECTOR )



ID NO. PP KR153433  
48673601

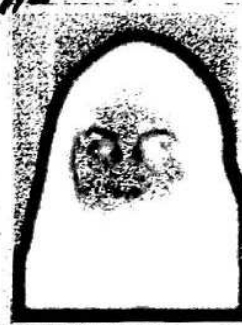
PIN NO. A006285309R

SIGNATURE ISAH DESALE BERHE

ISAH DESALE BERHE

DIRECTOR/SECRETARY )

In the presence of )



ID NO. PP 140133811

PIN NO. A005261168M

SIGNATURE WINIA MENGHISTAS TEKIRAIMONOT

WINIA MENGHISTAS TEKIRAIMONOT

I CERTIFY that I was present and saw the Directors of the Transferee HEARAN ENTERPRISES LIMITED appear before me on the 28<sup>th</sup> day of OCTOBER 2015 and duly sign this Transfer in my presence.

DAVID N. NJOROGE

ADVOCATE &

Name of Advocate: COMMISSIONER FOR OATHS  
P. O. Box 21405-00100  
NAIROBI

Address: .....



**MEMORANDUM**

1. The Crown Lands Ordinance (Chapter 155).
2. The Registration of Titles Ordinance (Chapter 150).
3. The Special Conditions contained in the Transfer registered as Number I.R. 9557/20 at the Land Titles Registry, Nairobi.

**LAND TITLES REGISTRY - NAIROBI REGISTRY**  
**REGISTRATION OF TITLE ACT**

REGISTERED AS No. I.R. 13562/14

PRESENTED 4<sup>th</sup> November, 2015

TIME 13:45 Hrs

C. N. Kitanyi  
Registrar of Titles  
215

**DRAWN BY:-**

**IGERIA & NGUGI**

**ADVOCATES**

**HUGHES BUILDING, 8<sup>TH</sup> FLOOR**

**KENYATTA AVENUE**

**PO BOX 60635-00200**

**NAIROBI (D21/11/2015)**

COLONY AND PROTECTORATE OF KENYA  
THE REGISTRATION OF TITLES ORDINANCE  
(CHAPTER 160)

CERTIFICATE OF TITLE: Number I.R. 13888

I HEREBY CERTIFY that ESTATES AND INVESTMENT LIMITED having its registered office at Nairobi in the Colony of Kenya pursuant to a Transfer registered as Number I.R. 9557/20 is now the registered proprietor for an estate in fee simple of ALL that piece of land situate in Nairobi Municipality (Upper Hill Estate) in the Nairobi District containing by measurement nought decimal eight eight two of an acre or thereabouts being Land Reference Number 1/566 (original Number 1/847/4) as delineated on Land Survey Plan Number 50915 annexed to the said Transfer SUBJECT however to the Ordinances Special Conditions Encumbrances and other matters specified in the Memorandum hereunder written.

IN WITNESS whereof I have hereunto set my hand and seal this fourth day of June One thousand nine hundred and fifty-seven.

  
REGISTRAR OF TITLES

MEMORANDUM

- (1) The Crown Lands Ordinance (Chapter 155);
- (2) The conditions agreements restrictions and stipulations contained in the said Transfer;
- (5) The easements excepted by the said Transfer.

LAND TITLES REGISTRY—COLONY OF KENYA

INLAND DISTRICT, NAIROBI—REGISTERED No. I.R. 13888/1

Presented 4.6.57

Time 9.30 a.m.

  
Registrar of Titles

2  
(320)  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Special resolution appointing Peter Morgan Johnson  
as liquidator of Estate And Investment Limited  
(with other lands)

3  
(341)  
Registration No. 266 Date of Registration 12.1.62 Registrar of Titles  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Transfer to Estates And Investment (1961) Limited  
(with other lands)

4  
Registration No. 268 Date of Registration 12.1.62 Registrar of Titles  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Transfer to Nairobi Housing Development  
Limited.

5  
Registration No. 1110 Date of Registration 29.6.66 Registrar of Titles  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Memo of Charge with Barclays Bank  
Plc.

6  
Registration No. 819 Date of Registration 31.10.66 Registrar of Titles  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Lease to East African Posts and  
Telecommunications Corporation  
Term 2 years and 17 days from 15th December 1967  
Monthly Rent Shs 2,200/- Subject to No 5 above  
Registration No. 826 Date of Registration 13.11.1968 Registrar of Titles

7  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Memo of Discharge No 5 above

8  
Registration No. 419 Date of Registration 14.2.1969 Registrar of Titles  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Charge to Lakshmi Ramnath Shah, Mulchand Sonchand  
Khimasia, Akbarali Mamuji, Vinodchand, Rajesh Shah  
and Madan Mohan Madan as trustees  
Subject to No 6 above

9  
Registration No. 420 Date of Registration 14.2.1969 Registrar of Titles  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Lease to Mankajia Dargat (Kemp) Limited  
Term 2 years and eleven days from 20th Nov. 1972  
Annual Rent Shs 20,000/-  
Subject to No. 8 above  
Registration No. 637 Date of Registration 16.11.1972 Registrar of Titles

10  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Discharge of Charge  
No 8 Above

11  
Registration No. 535 Date of Registration 11.10.73 Registrar of Titles  
THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THIS TITLE  
Transfer to Gladwell  
Wateri  
Subject to No. 9 above  
Registration No. 536 Date of Registration 11.10.73 Registrar of Titles



12.

THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THE TITLE  
TITLE Charge to Savings and Loan Kenya Limited  
Plot 36

Registration No. 537 Date of Registration 11-10-73 Registrar of Titles

THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THE TITLE  
Discharge of No 12 above

13.

Registration No. 072 Date of Registration 3-5-84 Registrar  
Indumia

14.

THE FOLLOWING INSTRUMENT HAS BEEN REGISTERED AGAINST THE TITLE  
Transfer to Hewan Enterprises Limited

Registration No. 508 Date of Registration 4-11-2011 Registrar  
C. N. Kitanyi 215



# CONCERN & PROTECTION OF NEW YORK

DISTRICT OF NAIROBI

Locality *Nairobi Municipality (Urban Area)*

Mensural District *South East*  
*1/2-2-2*

Scale: 1 in 1250 at 10/1/1951

Legal Reference No. 1/356

Reg. No. 1/341/6

Survey No. 1/341/6

Section No. 1/341/6

1/341/6 ACTS (MPP/1/341/6)

1/341/6 ACTS (MPP/1/341/6)

1/341/6 ACTS (MPP/1/341/6)

Starting	Distance
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10

COPY NOT  
FOR REGISTRATION  
PURPOSES

COPY NOT  
FOR REGISTRATION  
PURPOSES

W.C. COVERDALE & PARTNERS  
LAND SURVEYORS





001675

**FORM P.P.A. 2****THE PHYSICAL PLANNING ACT (NO. 6 OF 1996)****[S.33(1)(a)]****OUR REF:** UP&H/PIS/000552/1/356/DM/rwm**APPLICATION REG. NO. PPA2.****NOTIFICATION OF APPROVAL OF DEVELOPMENT PERMISSION**

1. ~~Sub-division~~  
 2. ~~Sub-division & Amalgamation~~  
 3. ~~Amalgamation~~  
 4. **Change of use** from Residential to Hotel  
 5. ~~Extension of use~~  
 6. ~~Extension of Lease~~

**To**

..... Erick K. Mumbi  
 ..... P. O. Box 28634-00100  
 ..... **NAIROBI**

25/11/2015

Your application, numbered as above, submitted on .....

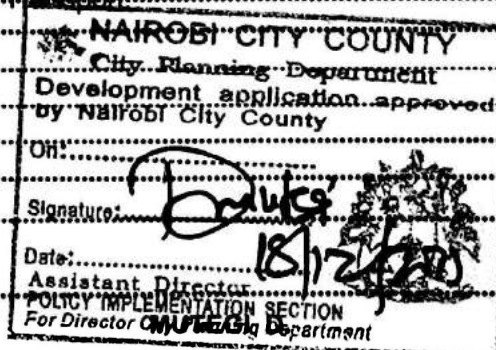
Seeking permission for Change of use ..... on L.R. No. 1/356Situate in Kilimani ..... Lenaga Road Road ..... 15/12/2015

Was approved by the County Planning Committee held on .....

Under item 147 ..... Subject to the following/ appended conditions:

- i) ..... Submission of satisfactory building plans within one year and completion of construction within two years otherwise the approval lapses.  
 ii) ..... Payment of revised ground rent as will be determined by the National Land Commission.  
 iii) ..... Payments of revised rates as will be determined by the Director Valuation & Property Management – Nairobi City County.  
 iv) ..... Subject to the plot not constituting part of the disputed public/private utility land/ allocations.  
 v) ..... Subject to compliance with Sections 36, 41 and 52 of the Physical Planning Act.  
 vi) ..... Subject to compliance with the approved zoning policy.  
 vii) ..... Subject to provision of appropriate setback(s) as per the rezoning plan.  
 viii) ..... Subject to provision of adequate and functional on-site parking to the satisfaction of Director of Roads, Public Works & Transport.

Date ..... 18/12/2015

Signed .....  
Name: .....**For: Director****County Planning & Architecture Department**

- cc. **The Director of Physical Planning, Nairobi**  
**The Commissioner of Lands, Nairobi**  
**The Director of Surveys, Nairobi**  
**The Land Registrar**

# NAIROBI CITY COUNTY



FORM P.P.A1

001650

SERIAL NO. ....

## FOURTH SCHEDULE

### APPLICATION FOR DEVELOPMENT PERMISSION

(To be submitted in TRIPLICATE in respect of each transaction and sent to or left at appropriate office of the Local Authority).

To the Director City Planning  
(Insert Name and address of the appropriate Local Authority Office)

I/we hereby apply for permission to develop the land and/ or building as described in this application and on the attached plans and drawings.

Date 25/11/2015

Signature of Applicant or Agent

If signed by Agent state:

Name iPlan Consult (Kenya) Ltd

Address P.O. Box 28634 - 00100

Profession Physical Planner

### SECTION A - GENERAL INFORMATION

- Owner's name and address Hearan Enterprises Limited
- Applicant's name and address Eric K Mumbi P.O Box 28634-00100
- If applicant is not the owner, state interest in the land e.g lease, prospective purchaser, etc and whether the consent of the owner to this application has been obtained. Reg. Planner
- (a) L.R. or parcel No. 1/356  
(b) Road, District and Town Lenana road Kiliman.  
(c) Acreage 0.882 Ha
- If an application has been previously submitted state registered number of the application None

### SECTION B - SUBDIVISION

- Describe briefly the proposed subdivision including the purposes for which land / or buildings are to be used
- State the purpose for which land and / or buildings are now used. if not now used, the purpose for which and the date on which they were last used.
- State whether the construction of a new or an alternative of an existing means of access to or from a road is involved

# Annex II. Duly filled public participation questionnaire

## ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PUBLIC PARTICIPATION QUESTIONNAIRE

The purpose of this questionnaire is to collect information from the public about the proposed project and its potential impacts. The information provided will be highly confidential and solely used for the preparation of the EIA report.

### PROJECT DETAILS

PROJECT NAME	HELIUM WYTEL MARIPOSA
PROPOSITOR	HELIUM ENTERPRISE LIMITED
PROJECT NO.	1/116
DATE	16/10/16

### DETAILS OF THE RESPONDENT

Name					
Phone number					
Occupation					
Gender					
Age	18-28	29-38	39-48	above 48	
Ethnic					

### QUESTIONS

- Have you ever visited/passing by the proposed project site? Yes ☒ No ☐
- What positive socio-economic and environmental impacts do you foresee arising from the proposed project?

- Economic Growth
- Employment Opportunity
- Improved Security

- What negative impacts do you foresee arising from the proposed project?

- Traffic due to the Development of the Road w/o Expansion of the Road network
- Noise and dust During Construction



4. In your opinion what is the relation between the advantages and disadvantages of the proposed project:

- ☒ a. Advantages outweigh disadvantages  
☐ b. Disadvantages outweigh advantages  
☐ c. Advantages and disadvantages are comparable

5. What is your main environmental concern (s) of the proposed development?

Would the Water Services be able to accommodate the whole Community?

6. What measures do you propose to mitigate the negative environmental impacts?

Limiting the Expansion of the Road to avoid Traffic during or

7. Do you support the full implementation of the proposed project? Yes.

If no, why:

Signature



ID No./ Passport No.

2549984

*Note: These details are required for the purposes of authenticity/ credibility*

# **ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PUBLIC PARTICIPATION QUESTIONNAIRE**

Questionnaire administered to the interested and affected parties during the EIA study for the proposed commercial development. As a requirement of Environmental Management and Coordination Act (EMCA) 1999 section 55, on EIA/EA, public participation is an important exercise for achieving the fundamental principles of sustainable development. As a member of the surrounding community, we request for your comments on the socio-economic and environmental impacts of the proposed project. The information provided will be highly confidential and solely used for the preparation of the EIA report.

## **PROJECT DETAILS**

PROJECT NAME	HEARAN MOTEL BUILDING
PROPOSITOR	HEARAN ENTERPRISE LIMITED
PROJECT NO.	1756
DATE	14/10/16

## **DETAILS OF THE RESPONDENT**

Name	Fahma Mohamed			
Phone number				
Occupation	Student			
Gender	Female			
Age	18-28 <input type="checkbox"/>	29-39 <input checked="" type="checkbox"/>	40-50 <input type="checkbox"/>	above 50 <input type="checkbox"/>
Date	14/10/16			

## **QUESTIONS**

- Have you ever visited/passed by the proposed project site? Yes ☒ No ☐
- What positive socio-economic and environmental impacts do you foresee arising from the proposed project? None

- What negative impacts do you foresee arising from the proposed project?

None

4. In your opinion what is the relation between the advantages and disadvantages of the proposed project

a. Advantages outweigh disadvantages

b. Disadvantages outweigh advantages

Advantages and disadvantages are comparable

5. What is your main environmental concern (s) of the proposed development

None

6. What measures do you propose to mitigate the negative environmental impacts

None

7. Do you support the full implementation of the proposed project. Yes

If no, why

Signature

ID No./ Passport No.

*Note: These details are required for the purposes of authenticity/ credibility*

# HEARNS HOTEL PROJECT ASSESSMENT (EIA) PUBLIC PARTICIPATION QUESTIONNAIRE

As part of the EIA process, the project proponent has been required to consult with the community and stakeholders. The purpose of this questionnaire is to gather your views on the proposed project and its potential impacts on the environment and the community. We request for your comments on the social, economic and environmental impacts of the proposed project. The information provided will be highly confidential and solely used for the preparation of the EIA report.

## PROJECT DETAILS

PROJECT NAME	HEARNS HOTEL PROJECT
PROPOSITOR	HEARNS ENTERPRISE LIMITED
PLOT LR. NO.	1/156
DATE	16/10/2016

## DETAILS OF THE RESPONDENT

Name	Mr. M. M. M. M.				
Phone number	0977 11 11 11				
Occupation	Business				
Gender	M				
Age	20-29 <input type="checkbox"/>	30-39 <input checked="" type="checkbox"/>	40-49 <input type="checkbox"/>	above 50 <input type="checkbox"/>	
Date	16/10/2016				

## QUESTIONS

- Have you ever visited/passed by the proposed project site? Yes ☒ No ☐
- What positive socio-economic and environmental impacts do you foresee arising from the proposed project?

It will bring employment

- What negative impacts do you foresee arising from the proposed project?

may be pollution

4. In your opinion what is the relation between the advantages and disadvantages of the proposed project:

- a. Advantages outweigh disadvantages ☒
- b. Disadvantages outweigh advantages
- c. Advantages and disadvantages are comparable

5. What is your main environmental concern (s) of the proposed development:

pollution

6. What measures do you propose to mitigate the negative environmental impacts

proper waste disposal /  
Management

7. Do you support the full implementation of the proposed project

YES

If no, why:

Signature



ID No./ Passport No.

24698532

*Note: These details are required for the purposes of authenticity/credibility*

# **ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PUBLIC PARTICIPATION QUESTIONNAIRE**

The proposed hotel is situated in the heart of Kilimanjaro town and is expected to have a significant impact on the local community. As a member of the surrounding community, we request that you contribute your views on the economic and environmental impacts of the proposed project. The information provided will be highly confidential and solely used for the preparation of the EIA report.

## **PROJECT DETAILS**

PROJECT NAME	KILIMANJARO HOTEL KILIMANJARO
PROPOSER	KILIMANJARO ENTERPRISE LIMITED
PLOT LN. NO.	1/350
DATE	

## **DETAILS OF THE RESPONDENT**

Name	EUNICE K. BAGOROGORA
Phone number	0922787150
Occupation	THERAPIST
Gender	FEMALE
Age	20-25 <input type="checkbox"/> 26-35 <input type="checkbox"/> 40-50 <input type="checkbox"/> above 50 <input checked="" type="checkbox"/>
Date	14 October 2016

## **QUESTIONS**

- Have you ever visited/used by the proposed project site? Yes ☒ No ☐
- What are the socio-economic and environmental impacts do you foresee arising from the proposed project?

The hotel will raise Kilimanjaro standards socio-economically. Kilimanjaro Residents will have a place to host their guests, entertain their families, work and meals etc.

It is positive impact. It will not be a problem with traffic congestion and maybe when completed road congestion on Lenana rd is quite small.

4. In your opinion what is the relation between the advantages and disadvantages of the proposed project

- ☒ Advantages outweigh disadvantages  
☐ Disadvantages outweigh advantages  
☐ Advantages and disadvantages are incommensurable

5. What is your main environmental concern (s) of the proposed development

The Dust and noise when under construction.

6. What measures do you propose to mitigate the negative environmental impacts

Both are unavoidable.

7. Do you support the full implementation of the proposed project

Yes

If no, why

Signature

Chago

ID No/Passport No.

B1020924

Note: These details are required for the purposes of authenticity/credibility

# ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PUBLIC PARTICIPATION QUESTIONNAIRE

The purpose of this questionnaire is to collect information from the public about the proposed project and its potential impacts. The information provided will be used to prepare the EIA report. As a member of the surrounding community, we request for your contribution to the assessment of the economic and environmental impacts of the proposed project. The information provided will be highly confidential and solely used for the preparation of the EIA report.

## PROJECT DETAILS

PROJECT NAME	HEAVEN HOTEL MAMOTRI
RESPONDENT	HEAVEN ENTERPRISE LIMITED
PLOT/LA. NO.	1/356
DATE	19/06/16

## DETAILS OF THE RESPONDENT

Name	
Phone number	
Occupation	
Gender	
Age	18-28 <input type="checkbox"/> 29-39 <input type="checkbox"/> 40-50 <input type="checkbox"/> above 50 <input type="checkbox"/>
Sex	

## QUESTIONS

- Have you ever visited/passed by the proposed project site? Yes ☒ No ☐
- What positive socio-economic and environmental impacts do you foresee arising from the proposed project?  
 Increasingly people get a place to  
 rest and leave with from the  
 neighbor hood and elsewhere.  
 Additionally, employment for locally - housing  
 consequently it is help you plant trees to better the neighborhood
- What negative impacts do you foresee arising from the proposed project?  
 The road on site is narrow and  
 narrow, Congestion is due to narrow  
 road from the construction as well as noise



4. In your opinion what is the relation between the advantages and disadvantages of the proposed project

- a. Advantages outweigh disadvantages
- b. Disadvantages outweigh advantages
- c. Advantages and disadvantages are comparable

5. What is your main environmental concern (s) of the proposed development

Let hope there will be trees

6. What measures do you propose to mitigate the negative environmental impacts

plant trees, lots and lots of  
trees and plants too  
big and cannot be noise and  
dust from the site

7. Do you support the full implementation of the proposed project Yes

if no, why The security can be high and it  
can improve the status of the neighborhood

Signature



ID No./Passport No. 28855195

Note: These details are required for the purposes of authenticity/credibility

## ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PUBLIC PARTICIPATION QUESTIONNAIRE

Questionnaire administered to the interested and affected parties during the EIA study for the proposed commercial development. As a requirement of Environmental Management and Coordination Act (EMCA) 1996 section 58, an EIA/EIA, public participation is an important exercise for achieving the fundamental principles of sustainable development. As a member of the surrounding community, we request for your comments on the socio-economic and environmental impacts of the proposed project. The information provided will be highly confidential and solely used for the preparation of the EIA report.

### PROJECT DETAILS

PROJECT NAME	LEGARAI HOTEL, MARIKINA
PROPOSER	HEARSH ENTERPRISE LIMITED
PLOT/L.R. NO.	1/350
DATE	19 / 08 / 2016

### DETAILS OF THE RESPONDENT

Name	John				
Phone number	0702 440066				
Occupation	Business				
Gender	Male				
Age	18-28 <input checked="" type="checkbox"/>	29-39 <input type="checkbox"/>	40-50 <input type="checkbox"/>	above 50 <input type="checkbox"/>	
DATE	19 / 08 / 2016				

### QUESTIONS

- Have you ever visited/passed by the proposed project site? Yes
- What positive socio-economic and environmental impacts do you foresee arising from the proposed project?

The proposed project will be highly welcomed though it must be properly friendly to the residents and surrounding.

- What negative impacts do you foresee arising from the proposed project?

Positive and negative, on hand in mind to good footing and be more friendly and body open to people and sparkling clean is must.

4. In your opinion what is the relation between the advantages and disadvantages of the proposed project:

☒ Advantages outweigh disadvantages

☐ Disadvantages outweigh advantages

☐ Advantages equal disadvantages and disadvantages are compensable

5. What is your main environmental concern (s) of the proposed development?

Forest area

6. What measures do you propose to mitigate the negative environmental impacts?

None

7. Do you support the full implementation of the proposed project? Yes

If no, why:

Signature



ID No./ Passport No.

*(Note: These details are required for the purposes of authenticity/ credibility)*

FORMET

01/03/2013



**nema**

NATIONAL ENVIRONMENTAL MANAGEMENT AUTHORITY

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

**ENVIRONMENTAL IMPACT ASSESSMENT(AIEA) PRACTISING LICENSE**

License No: NEMA/EA/100/2012

Registration number: 100

NEMA/EA/100/2012

Mr. Simon Muboni Nguni  
(Individual or firm) of address

P.O. BOX 18000 NAIROBI, Kenya

in the capacity of a (Lead Expert/Associate Expert/Lead of Expert) Associate Expert  
registration number: 100

in accordance with the provision of the Environmental Management and Coordination Act Cap 365.

Issued Date: 4/9/2012

Expiry Date: 12/01/2015

Signature: \_\_\_\_\_



(Full)

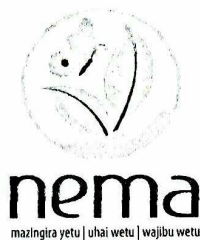
Director General

The National Environmental Management  
Authority

P.O. Box



01/03/2013 10:12:00



**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/4598

Application Reference No:

NEMA/EIA/EL/6830

M/S Reuben Karuru Chege  
 (individual or firm) of address

P.O. BOX 3010-00200, Nairobi

is licensed to practice in the  
 capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**  
 registration number **7041**

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

Issued Date: 1/27/2017

Expiry Date: 12/31/2017

Signature.....

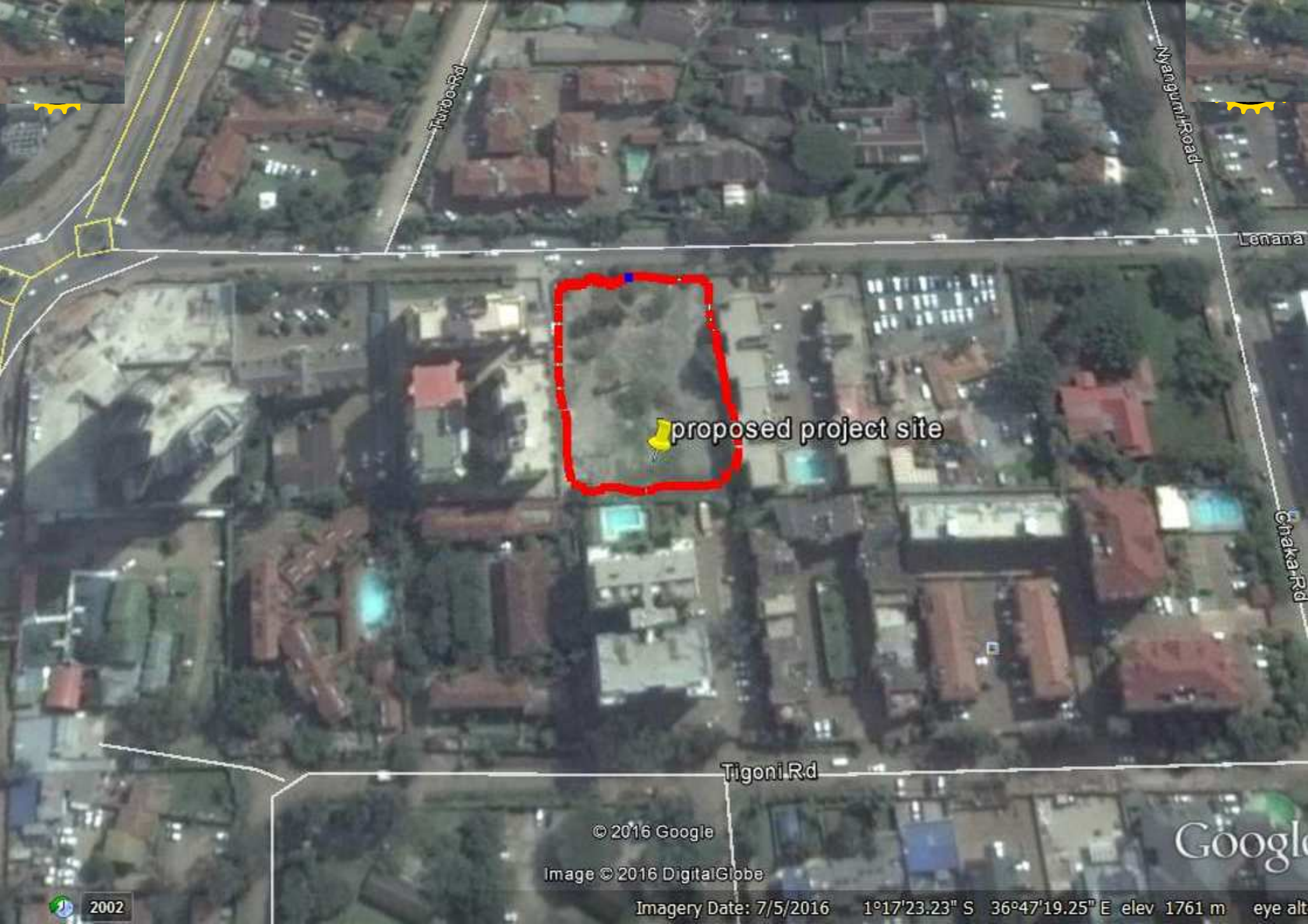
(Seal)

**Director General**  
**The National Environment Management**  
**Authority**

P.T.O.



ISO 9001: 2008 Certified



Turbo Rd

Nyangumi Road

Lenana

proposed project site

Chaka Rd

Tigoni Rd

© 2016 Google

Image © 2016 DigitalGlobe

Google



2002

Imagery Date: 7/5/2016 1°17'23.23" S 36°47'19.25" E elev 1761 m eye alt



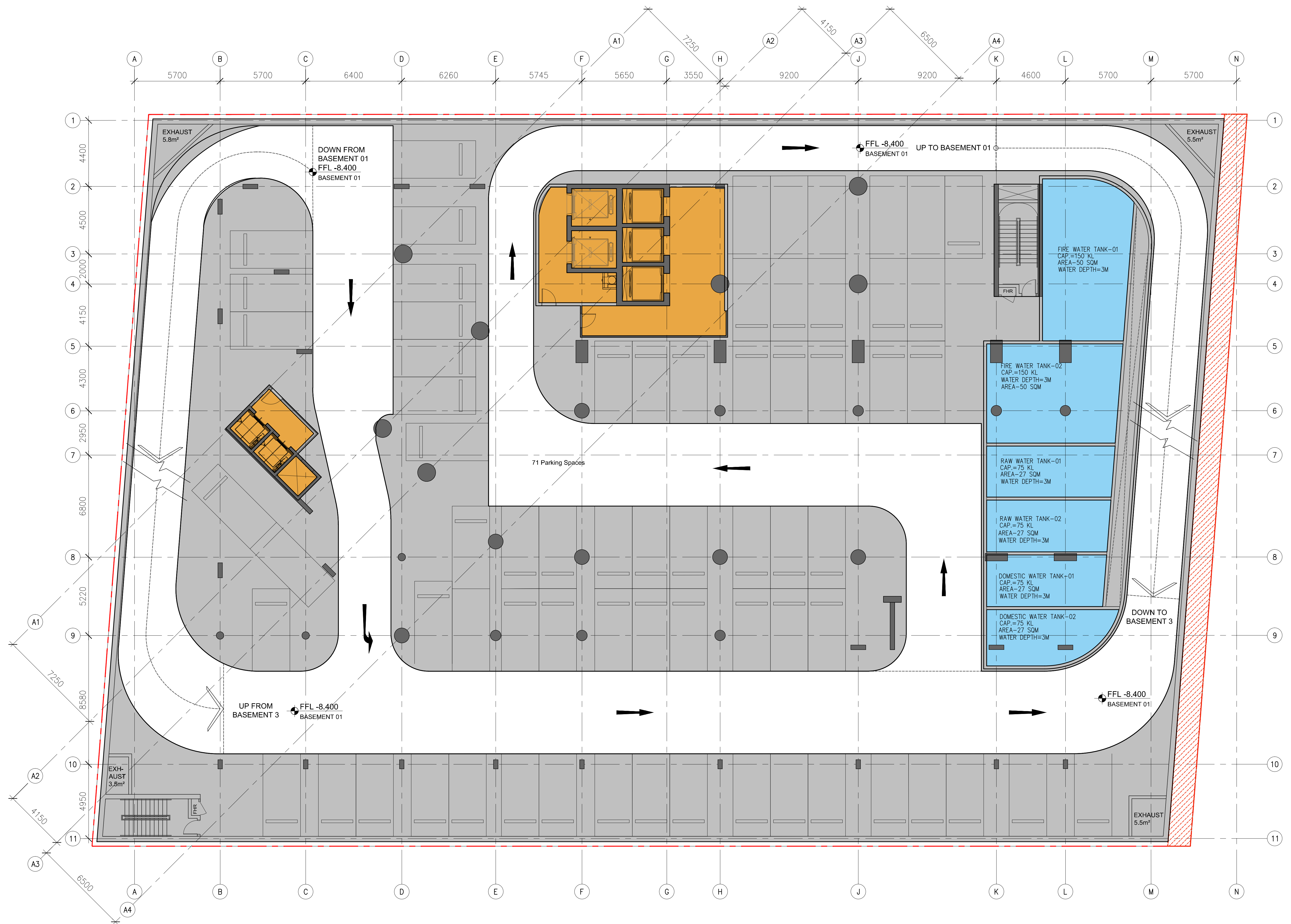
- SUPPORT SERVICES
- LIFT LOBBY
- PARKING



BASEMENT LEVEL 01

ARCH. GETACHEW BEKELE - A1354





## BASEMENT LEVEL 02

ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2016



- SUPPORT SERVICES
- LIFT LOBBY
- FOOD & BEVERAGE



## BASEMENT LEVEL 03

ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2016

- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE

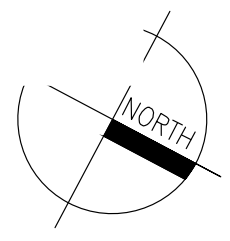


GROUND FLOOR

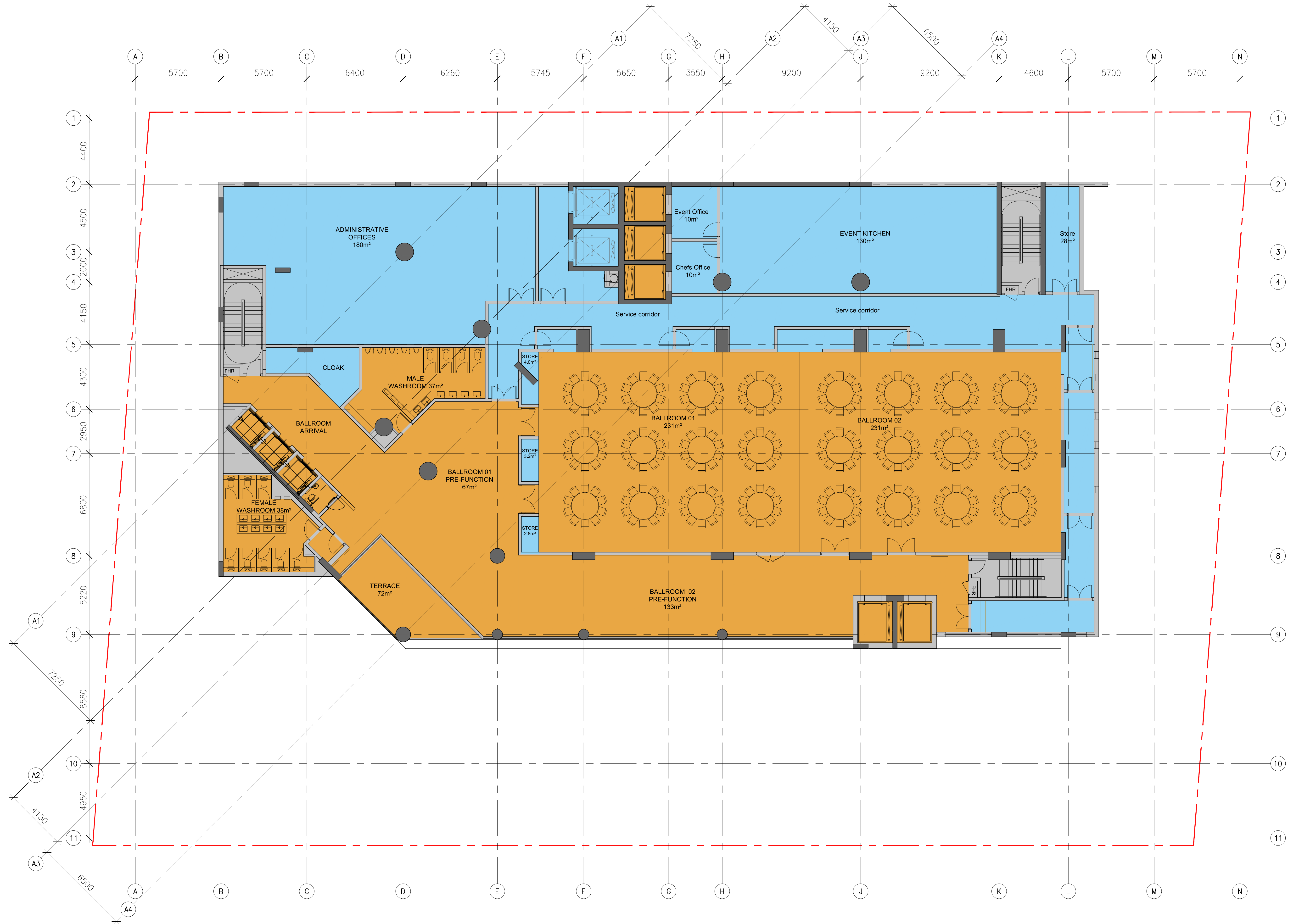
ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2016





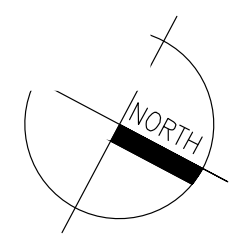
- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE



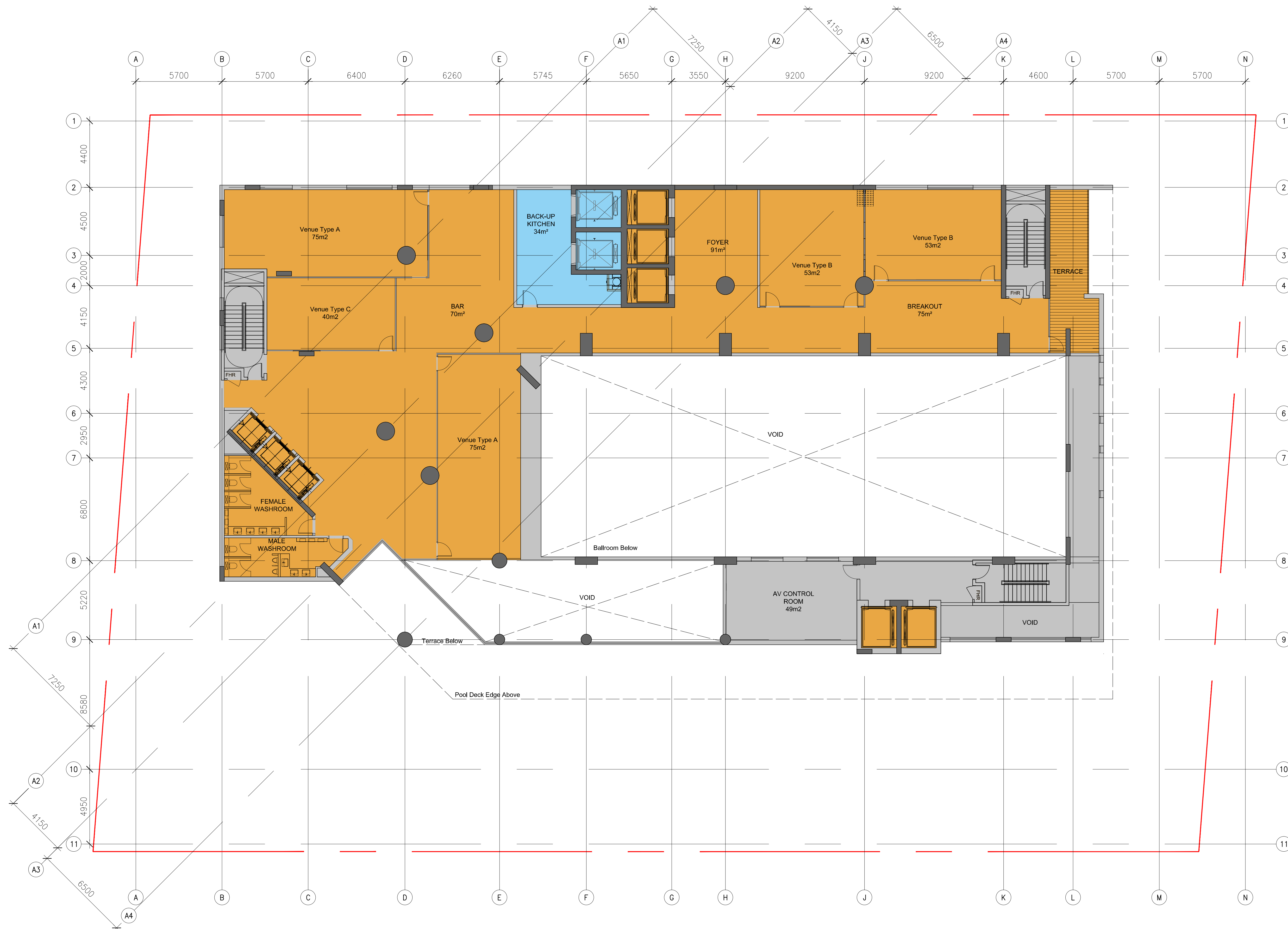
FIRST FLOOR

ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2016



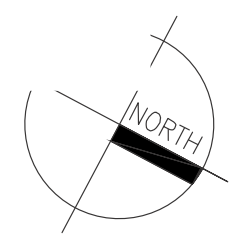
- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE



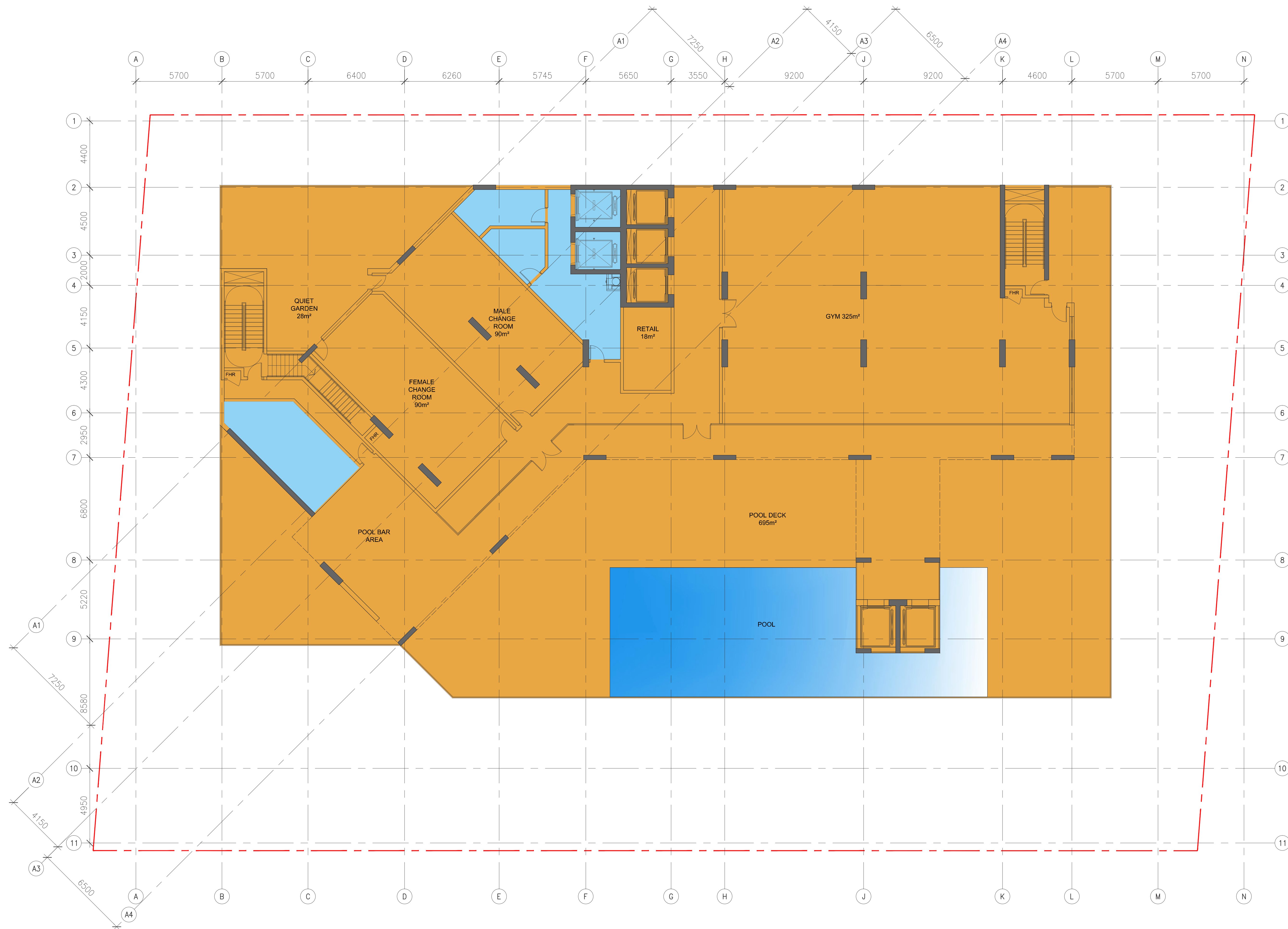
## FIRST FLOOR MEZZANINE

ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2016



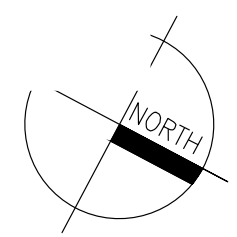
- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE



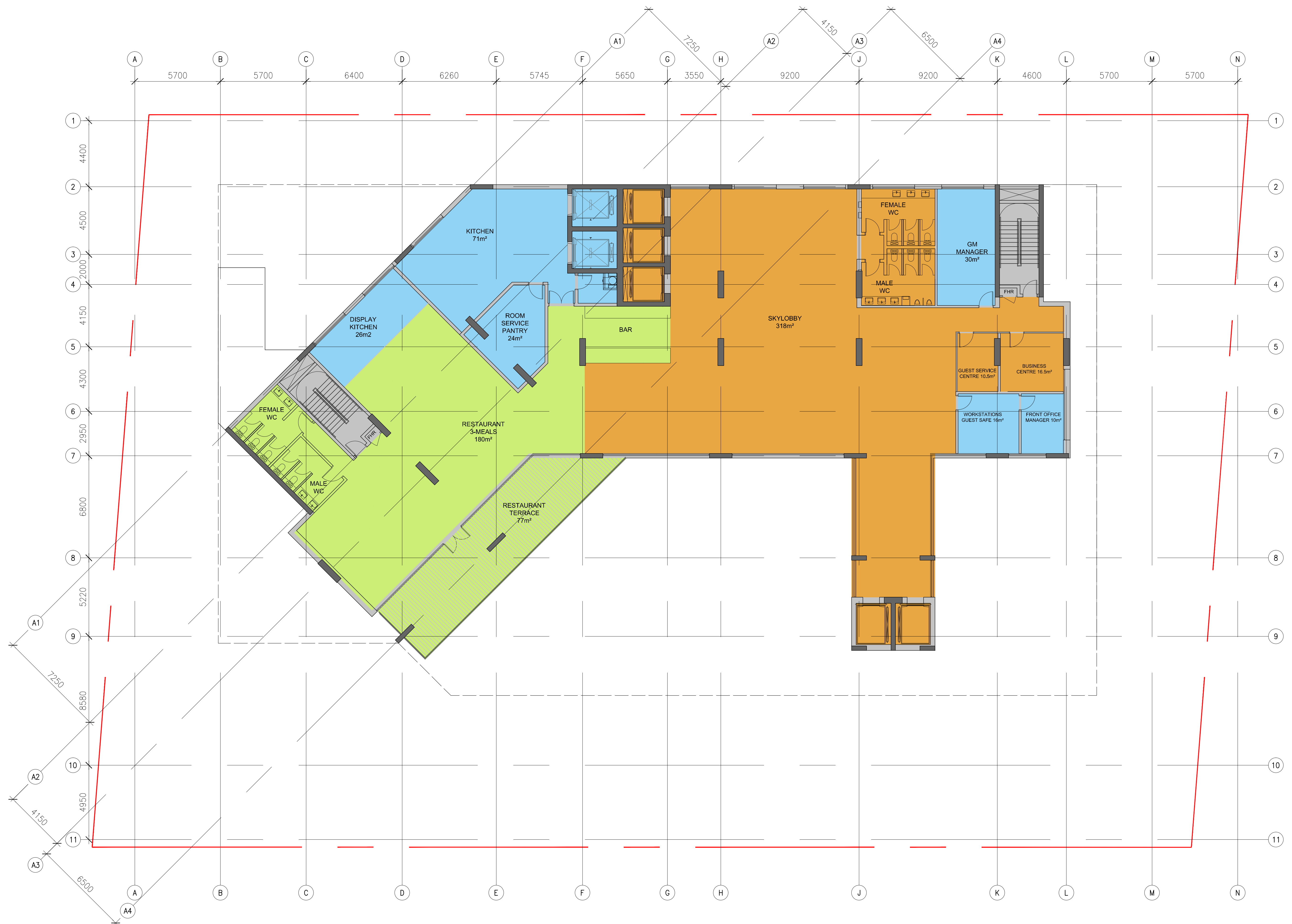
SECOND FLOOR

ARCH. GETACHEW BEKELE - A1354





- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE



## THIRD FLOOR

ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2016



4TH FLOOR



5 - 9TH FLOORS



10TH FLOOR

	KING - 33m2	TWIN - 33m2	CLUB KING - 33m2	CLUB TWIN - 33m2	JUNIOR SUITE - 66m2	EXECUTIVE SUITE - 99m2	TOTAL
4TH	17				2		19
5TH - 9TH	13	4			2		95
10TH	15	2			2		19
11TH			15	2	2		19
12TH			9	3	1	1	14
13TH			11	4		2	17
TOTAL	97	22	35	9	17	3	183
PAP	100	22	32	8	15	3	180

- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE

# TYPICAL FLOORS

ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2010





11TH FLOOR



12TH FLOORS



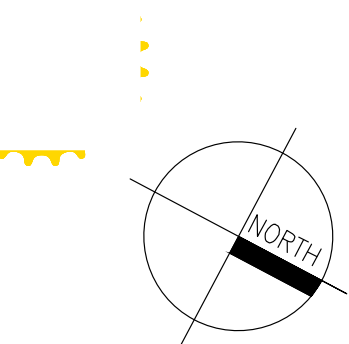
13TH FLOOR

	KING - 33m2	TWIN - 33m2	CLUB KING - 33m2	CLUB TWIN - 33m2	JUNIOR SUITE - 66m2	EXECUTIVE SUITE - 99m2	TOTAL
4TH	17				2		19
5TH - 9TH	13	4			2		95
10TH	15	2			2		19
11TH			15	2	2		19
12TH			9	3	1	1	14
13TH			11	4		2	17
TOTAL	97	22	35	9	17	3	183
PAP	100	22	32	8	15	3	180

- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE

# TYPICAL FLOORS





- BOH SUPPORT SERVICES
- FOH GUEST AREAS
- FOOD & BEVERAGE
- GUEST ROOM - STANDARD KING
- GUEST ROOM - STANDARD TWIN
- GUEST ROOM - JUNIOR SUITE
- GUEST ROOM - EXECUTIVE SUITE



# FOURTEENTH FLOOR

ARCH. GETACHEW BEKELE - A1354

Concept Design: September 2016