Environmental Impact Assessment (EIA) Study Report for the Proposed Hotel Development on Plot L.R. No. Chembe/Kibabamshe/327 in Mayungu area, Kilifi County.

Proponent:

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Firm of Experts:

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Version: Final EIA Study Report	
Date:	

CERTIFICATION

Certification by Lead Expert

We, **Envasses Environmental Consultants Limited** hereby confirm that this Environmental Impact Assessment (EIA) Study Report has been prepared by ourselves pursuant to Section 58 of the Environmental Management and Coordination Act Cap. 387 of the Laws of Kenya.

Signed for and on behalf of: **Envasses Environmental Consultants Limited**
Firm of Experts No. 6175

Name: Mr. Simon Nzuki

Designation: Chief Executive Officer & Lead Expert No. 1350

Signature: _____ **Date:** _____

Certification by Proponent

We, **Kango Enterprises Limited**, hereby confirm that this Environmental Impact Assessment (EIA) Study Report has been prepared and submitted to NEMA with our authority pursuant to Section 58 of the Environmental Management and Coordination Act Cap. 387 of the Laws of Kenya.

Signed for and on behalf of: **Kango Enterprises Limited**

Name:

Title of the signatory:

Signature: _____ **Date:** _____

Proponent Contact Details
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ACKNOWLEDGEMENTS

The preparation of this EIA study report was made possible by a collaborative effort involving the proponent, consultant, neighbors and other project stakeholders. We thank the proponent, Kango Enterprises Limited, for providing requisite logistical and documentation on the proposed project.

Further, we acknowledge the community members and stakeholders for their participation in the scoping process to provide views and concerns on the proposed project.

Sampling and analysis of baseline environmental media quality i.e., air, water and noise were undertaken by Lahvens Limited. The consultants are grateful for their invaluable input in the preparation of the EIA study report.

EXECUTIVE SUMMARY

Kango Enterprises Limited contracted Envasses Environmental Consultants Limited in June 2023 to prepare full scale Environmental Impact Assessment (EIA) Study Report for the proposed hotel development of Plot L.R. No. Chembe/Kibabamshe/27 in Mayungu, Kilifi County. The EIA Study Report is prepared pursuant to Section 58 of the Environmental Management and Coordination Act (EMCA) Cap 387 of Laws of Kenya. Under the Second Schedule (3i) of the EMCA characterizes any related urban development as high risk project and should therefore undergo an ESIA Study process.

The preparation of the EIA Study Report was guided by the Third Schedule of the Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003. The consultant carried out a reconnaissance site visit on June 2023 for the purposes of assessing the baseline environmental and social conditions associated with the proposed project. The issues considered by the expert in the environmental screening and scoping criteria were informed by the Second Schedule of the EIA/EA Regulations, 2003 and include ecological, land-use, water, landscape and social economic. Further, various methods used in data collection included literature review of relevant documentation, photographs, observation and interviews during site visits. In addition, the baseline environmental media were sampled and analyzed in collaboration with Lahvens Limited and the public participation strategy included stakeholder consultation meeting and administration of questionnaires to the neighbors of the project site.

The findings of the environmental assessment indicated that the proposed hotel development will have both positive and negative environmental and social impacts. The EIA report proposes mitigation measures to enhance the benefits as well as reduce the negative impacts. The positive impacts will include improving hotel industry, creating employment opportunities, promoting direct and indirect businesses, enhancing income to the proponent and enhancing economic gain by generating revenue to the government. Despite the benefits, there are number of negative environmental and social impacts expected to result from various stages of the project implementation.

At the construction phase, the negative environmental and social issues will include loss of vegetation cover, destruction of physical environment, water quality degradation, wastewater management, air and noise pollution, occupational safety and health and storm water management. The proponent is recommended to apply the change of users from the county government of Kilifi prior to commencement of the project. Notably, the part of the project site is 100% covered by vegetation which provides significant ecological services thus this report recommends planting of trees to compensate on the loss, obtain permit from Kenya Forest Service (KFS) before cutting down the mature trees at the site and implement the landscape programme.

To mitigate water quality degradation resulting from possible sedimentation from civil works, the proponent is recommended to monitor water quality along the ocean shore of the project site. In addition, this report advises the proponent to sensitize workers to conserve the available water resources and monitor water usage by installing water meter. To ensure proper solid waste management, the proponent is recommended to procure adequate waste collection bins with capacity for segregation, contract NEMA licensed personnel to dispose off solid waste, comply with Environmental Management and Co-ordination (Waste Management) Regulations, 2006 and the Sustainable Waste Management Act, 2022.

Air and noise pollution at the construction sites are inevitable and therefore, the proponent is advised to sprinkle water at unpaved access roads to suppress dust, install dust screens around the project site, use efficient equipment to mitigate air and noise pollution and comply with the provisions of the Environmental Management and Coordination (Air Quality), Regulations 2014 and the Noise and Excessive Vibration Pollution) (Control) Regulations, 2009. In addition, the inherent occupational safety and health risks can be mitigated by registering the site as workplace with the Directorate of Occupational Safety and Health Services (DOSHS), obtaining insurance cover for the workers at the site, providing adequate Personal Protective Equipment (PPE) and enforcing on their use, providing fully stocked first aid kit and trained personnel, regulating the entry of visitors to the construction site by deploying adequate security measures and complying with the provisions of the Occupational Safety and Health Act, 2007.

During the operation phase, the anticipated negative environmental and social impacts include; solid waste management, effluent generation and management, health and safety risks, increased water and energy demand. To properly manage solid waste generated during the operation of the facility, the report recommends procuring adequate color coded solid waste collection bins, contract the services of licensed NEMA personnel for disposal of solid waste, comply with the provisions of the Environmental Management and Coordination (Waste Management) Regulations, 2006 and the Sustainable Waste Management Act, 2022.

Water will be required for general cleaning, sanitation and drinking purposes. Approximately 70% of water used will be generated as effluent. To conserve the available water resources as well as ensure proper effluent management, this report advises the proponent to install automatic water saving faucets, display water saving tips at wash areas, construct bio-digester to manage wastewater, apply for and obtain effluent discharge license and comply with the provisions of the Environmental Management and Co-ordination (Water Quality) Regulations, 2009. Furthermore, to conserve energy, the report recommends the proponent to maximize use of the motion detectors lighting in place that will be occasionally used, promote the use of energy automatic cards to switch on and off the lights and conduct energy audits once every three years.

The inherent hazards such as slips, trips and falls, musculoskeletal injuries, fire and drowning in the swimming pool can be mitigated by the proponent by ensuring clear signage and emergency exits are adequately displayed, adequate firefighting equipment are installed and serviced regularly by accredited service provider, full stocked first aid kit and standby lifeguard and ensure compliance with the provisions of the Occupational Safety and Health Act, 2007.

In conclusion, the proposed hotel project is considered to be beneficial as it will improve hotel infrastructure for the area, create employment opportunities, promote businesses, provide income to the proponent, and will be source of revenue to the government. Besides the benefits, the negative environmental and social impacts at all phases will include loss of vegetation cover, solid waste generation and management, increased water and energy demand, wastewater generation and management, occupational safety and health risks, air and noise pollution.

The EIA Study Report proposes a suite of Environmental Management and Monitoring Plans to address the anticipated issues during the entire project cycle and enhance the environmental performance of the proposed project. On the basis of a commitment by the proponent to implement the proposed mitigation measures and the Environmental Management Plan to the latter, we recommend issuance of an EIA License as per the Environmental Management and Coordination Act Cap. 387 of the Law of Kenya.

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LIST OF ACRONYMS

CBOs	Community Based Organizations
CEC	County Environment Committee
COVID-19	Corona Virus 19
DOSHs	Directorate of Occupational Safety and Health Services
EA	Environmental Audits
ELC	Environment and Land Court
EMCA	Environmental Management and Co-ordination Act
ESIA	Environmental and Social Impact Assessment
ESMPs	Environmental and Social Management Plans
GCP	Gross County Products
GDP	Gross Domestic Product
IMO	International Movement Organization
ITCZ	Inter Tropical Convergence Zone
KMA	Kenya Maritime Authority
KFS	Kenya Forest Service
KPLC	Kenya Power and Lighting Company
KWS	Kenya Wildlife Service
MAWASCO	Malindi Water and Sewerage Company
MoH	Ministry of Health
NECC	National Environment Complaints Committee
NEMA	National Environmental Management Authority
NET	National Environment Tribunal
NGOs	Non-Governmental Organizations
NLC	National Land Commission
PAPs	Project Affected Persons
PM	Particulate Matter
TORs	Terms of References
WRA	Water Resource Authority

1 INTRODUCTION

This chapter gives background information of the proposed project. It highlights the location and proposed site access, project components and activities, EIA approach and methodology and estimated project cost.

1.1 Background information

The hotel industry is a vital sub-sector in the tourism sector envisioned to deliver on the 10 per cent annual economic growth as projected in the Kenya Vision 2030. Its contribution to real Gross Domestic Product (GDP) has been, on average, 1 per cent over the last 10 years. Hospitality is one of the sectors hit hardest by Covid-19 in Kenya. Before the pandemic, the sector was a major contributor to the strong performance in the service sectors. It formally employed more than 82,900 people and, together with trade services in 2019, engaged more than nine million people. At a disaggregated level, the industry contributed over 10 per cent to Gross County Products (GCP) for counties such as Kilifi, Kwale, Mombasa and Nairobi in 2017, hence a key industry in both the National and County governments.

Furthermore, the accommodation sector is central to the travel and hospitality industry because people traveling to different areas require somewhere to stay, rest, sleep, and unwind. The proposed establishment will be located within Mayungu locality which is famous tourism destination for Mayungu public beach. Additionally, Malindi's Gedi Ruins, Kipepeo Market, The Falconry Park, Takwa Ruins, Bio Ken Snake Park, Vasco Da Gama Pillar, Portuguese Chapel, Malindi Marine National Park, Arabuko Sokoke National Park are famous tourist destinations in Malindi at the North Coast Kenya.

The project development poses significant environmental and social risks that are categorised as high as stipulated under the Second Schedule (2i) of the Environmental Management and Coordination Act Cap. 387 of the Laws of Kenya, Under EMCA, such high-risk investments are required to undergo a full scale Environmental and Social Impact Assessment (ESIA) Study and submit the report to the National Environment Management Authority (NEMA) for review and decision making. Accordingly, and consistent with the requirements of the Environmental Management and Coordination (Impact Assessment and Audit Regulations), 2003, the proponent, Kango Enterprises Limited contracted Envasses Environmental Consultants Limited to carry out the ESIA Study.

1.2 Location of the proposed project site

The proposed site is located in Mayungu in close vicinity with Mayungu Public Beach. The site is georeferenced at **Latitude -3.286093** and **Longitude 40.121090.** The parcel of land is currently characterized by existing residential house, swimming pool, paved walkway, various vegetation types and coral rocks.

The neighborhood area is characterized by residential establishment, shopping center and tourism and hospitality establishments. The site neighbors White Lan 17 to the East, breezy Hills Estate to the North and Mayungu Childrens' Home to the North East

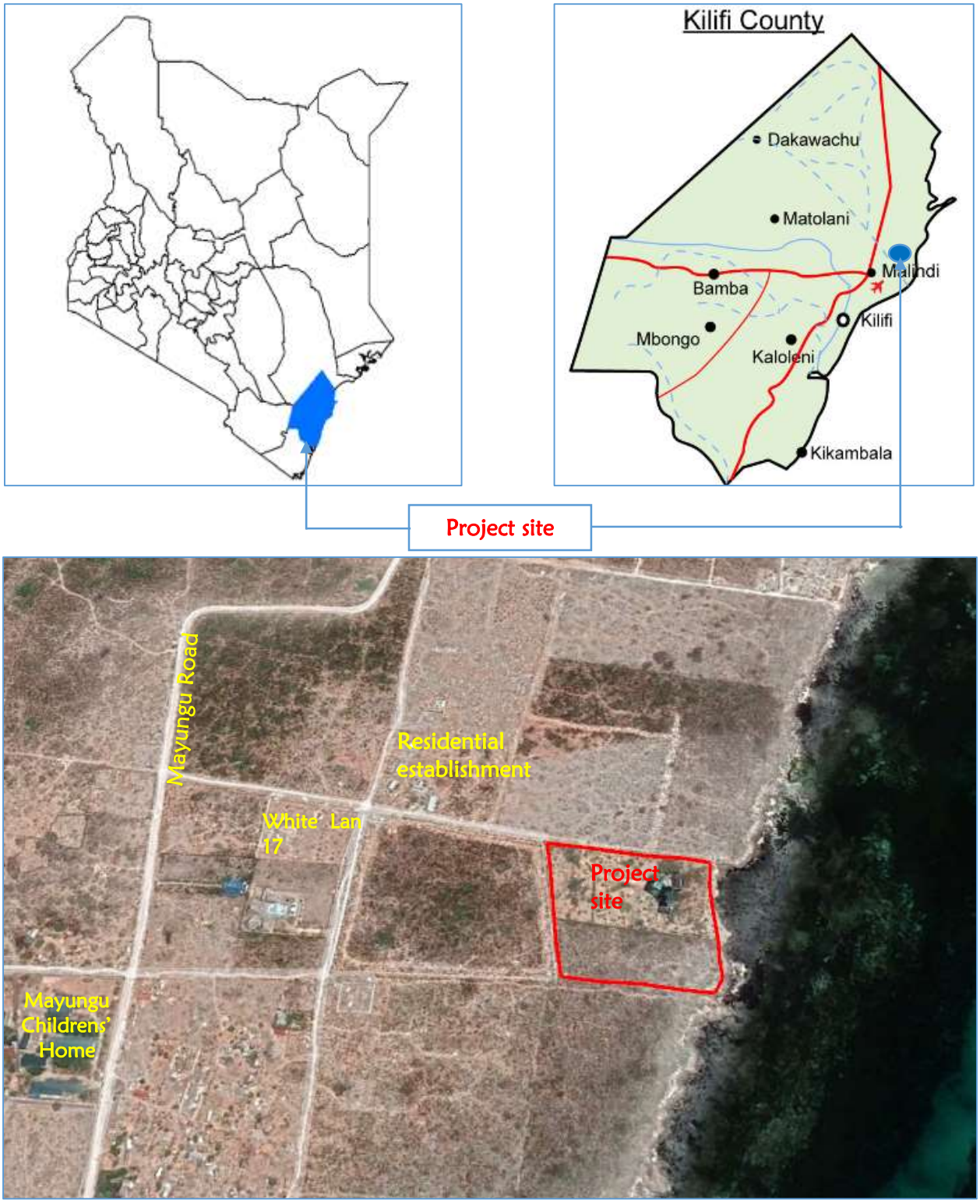


Figure 1: Location of the project site (Source: Google Earth accessed, June, 2023)

1.3 Project description and design

The proposed hotel development will consist of hotel and conference block, Presidential Villa, 3-bedroom villas, 2-bedroom apartment blocks and a jetty. Other social amenities will include swimming pools, service yard and guest parking area. Jetty facility will be constructed down the cliff and within Ocean Corridor along the project site. (Figure 1).

The hotel and conference will be constructed on a two-storey block occupying a total area of 8,872m^2 and will comprise of one presidential suite, 52 hotel rooms, dining area, sunken lounge, terrace bar, Jacuzzi, steam and sauna, gym, kitchen and bakery, conference area, security house and office area. Further, the villas will be on a one storey building where the presidential one consisting of master ensuite and three-bedroom, private lounge, kitchenette, gym, sauna, gazebo and swimming pool will occupy a total area of 932m^2 and the three-bedroom villa will be constructed on six blocks occupying a total area of 2,348m^2. The apartment will be constructed as seven blocks each on a two storey level building of which ground and first will comprise of two bedroom units, three-bedroom duplex and second floor will have one-bedroom units occupying a total area of 5,040m^2 (Table 1).

Table 1: The summary of components of the proposed hotel development

Name of block	No. of blocks	Description				Total Area (m^2)
		Ground floor	First floor	Second Floor	Roof level	
Hotel and conference	1	Reception, offices, Dining, kitchen & bakery, coffee bar, ball room 2-boardrooms, and security house	33 hotel rooms, Spa, Jacuzzi, sauna and steam	One presidential suite, 19 hotel rooms, dining, terrace bar, solar panels	-	8,872
Presidential villa	1	3-bedrooms, lounge, dining, kitchen, gazebbo	Master ensuite, lobby, private lounge & dining, Spa, Jacuzzi, gym, sauna and steam	-	-	932
Apartments	6	Two-bedroom and three bedroom duplex	Two bedroom and three bedroom duplex	One-bedroom unit	-	5,040
Three Bedroom villa	6	Lounge, dining, kitchen and guest room	Lobby, two bedrooms	-	Roof terrace, bar, solar and water tanks	2,348
					Grand Total	**17,192**

Figure 2: Layout plan of the proposed project (Source: B.K, 2023)

1.4 EIA approach and methodology

1.4.1 Introduction

The EIA was prepared based on the guidelines from the Third Schedule of the Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003. The consultant prepared a scoping report and Terms of Reference (TORs) as required under Regulation 11 of the Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003 and submitted them to NEMA for approval. The scoping report and TORs were approved on June 2023 and the consultants began the preparation of the ESIA study report.

1.4.2 Data collection

The consultant used various data collection method that included literature review of relevant documents, observations and photography during site visit. Baseline environmental data was collected on ambient air, water and noise levels in collaboration with Lahvens Limited. Site visits were undertaken in June 2023 for purposes of reconnaissance, assessing the baseline and environmental risks associated with the proposed project as well as applicable environmental safeguards and standards. Environmental screening criteria was informed by the Second Schedule of the Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003. As per this Schedule the issues considered by the experts were ecological and socio-economic issues, landscape changes, land use character and water.

Table 2: Summary of the results of screening

Criteria	Results
Ecological considerations	– Excavation will occur – No endangered species of trees and plants found at the site – No endemic species reported on site
Socio-economic considerations	– Provision of safe storage of mining explosive materials – Employment creation – Optimal use of land – Income to the proponent – Revenue to the government through taxes & licenses – No cultural or heritage issues at the site – No relocation of any inhabitant
Landscape impacts	– The proposed project will not impact significantly on the landscape of the area
Land use	– The proposed project land use is industrial
Water	– The construction and subsequent operations of the proposed project will increase water demand and impact on water resources

In addition, public participation was carried through public and stakeholder consultations to inform the key stakeholders and communities about the proposed project. The objective of the meeting was to establish a participatory process for identifying potential impacts and benefits of the project. The information gathered was subsequently synthesized and incorporated into the ESIA Study Report.

1.4.3 Baseline monitoring of environmental media

Baseline environmental data was collected on ambient air, water and noise levels in collaboration with Lahvens Limited. The results will be used to provide a benchmark for implementing the Environmental Monitoring Plan proposed in the ESIA report. The approaches and methods used for sampling and analysis of baseline environmental media are discussed below.

1.4.3.1 Ambient air quality monitoring

Mobile, static and active monitoring was done by use of real time gas detector-pump suction equipment LB-MS4X which integrates the main ambient gases and meteorological parameters.

The gas sensitive semiconductor sensor uses proprietary sensing material, built in automatic Correction (ABC) and interference rejection. This combination results in ppb resolution and a highly linear response. The gas sensitive electrochemical sensors generate nano-amp currents proportional to the gas concentration. Aeroqual uses low noise electronics to capture these signals resulting in low detection levels. The non-dispersive infrared sensor uses infra-red light, a narrow band-pass filter and photodiode to measure the intensity of light at the gas absorption band. The light intensity is proportional to the gas concentration.

The laser particle counter for Particulate Matter measurements uses optimized signal processing using low noise electronics added algorithms to correct for interferences. An aerosol particle counter works on the principal of either light scattering or light blocking. An aerosol stream is drawn through a chamber with a light source (either Laser Based Light or White Light). When a particle is illuminated by this light beam, it is redirected or absorbed. Light scattered by a single

particle in a specific direction in relation to the original direction has a unique signature which relates to the size of the particle. This allows for sizing and counting of individual particles

1.4.3.2 Baseline noise level measurements

Noise emission survey was achieved via initial examination of existing road traffic and other noise sources of significance. Noise levels was evaluated using a Sound Level Meter Model AWA 5636 IEC 61672 – 1:2013 class 2 with a built-in w̄octave / octave band filters which does real time 1/1 and 1/3 octave analysis was mounted on at 2.0m above ground level and at least 3.5m away from any sound reflecting surfaces at a boundary position and measurements taken at timed intervals over 10 minutes and stored in SLM's memory.

The sound level meter was placed on the microphone to reduce any wind interference during measurements. The sound level meters, were within its calibration period, at the time of monitoring. In addition, the equivalent noise level (LAeq), the maximum sound pressure level (Lmax) and the minimum sound pressure level (Lmin) during that measurement period were recorded. Factors to consider such as time, duration and predictability of the noise emission, amplitude and frequency of the noise emission, nature of the source, location of noise sensitive receptors, ambient and background noise level, nature and character of the locality, presence of special acoustic characteristics and the incongruity or familiarity of the noise during noise survey and site placement were put into consideration.

Furthermore, as each individual measurement was being taken, the nature of the noise climate in the area was assessed and recorded. This comprised an auditory observation by the surveyor, as well as identifying those noise incidents which influenced the sound level meter readings during that measurement period.

1.4.3.3 Water quality sampling

A sample of ocean water was obtained 100m from the shores of the Indian Ocean along which the proposed project lies. The water sample was analyzed to give an indicative baseline for the ocean water in accordance to the Third Schedule of the Environmental Management and coordination (Water Quality) Regulations, 2006

1.4.4 Stakeholder mapping

Prior to commencement of the ESIA process, the consultants conducted a stakeholder mapping and analysis to determine the individual, groups and institutions that will be affected by and have an interest in the project in consultation with the proponent, the County Government and the Ministry of Interior and National Administrations. The consultants then prepared a comprehensive list of all the stakeholders in consultation with the proponent and categorized them based on the basis of interest and influence (Figure 3).

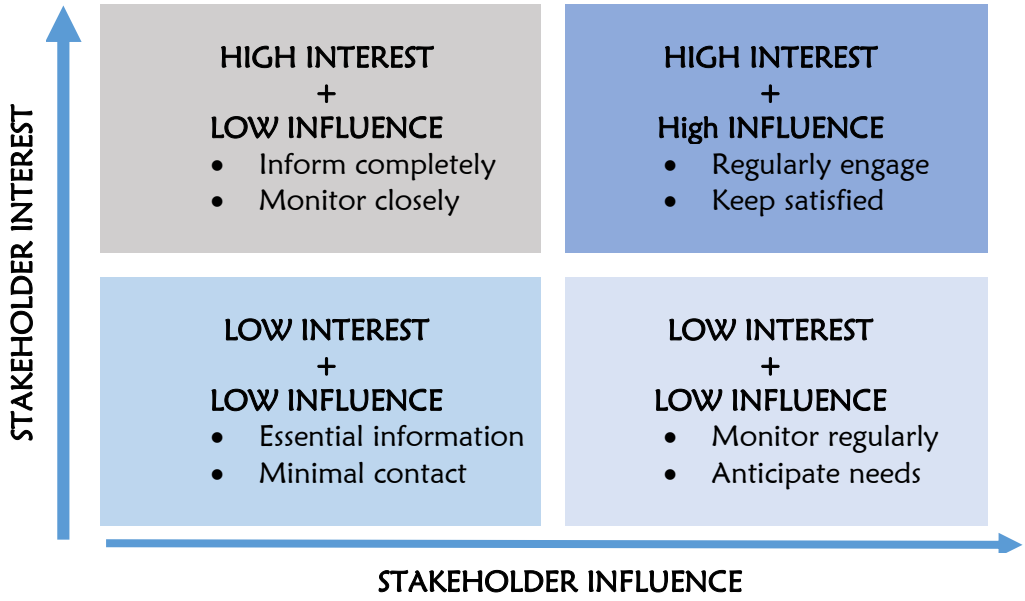


Figure 3: Stakeholder mapping considerations based on interest and influence in the proposed project

- Low interest, low influence – those to keep informed
- High interest, low influence – those to involve and consult with
- Low interest, high influence – powerful stakeholders to engage
- High interest, high influence – partners to collaborate with

Seven key stakeholder categories were identified. These are;

1. County and National Government Representation
2. Lead agencies
3. Civil Society
4. Local Community
5. Faith Based Institutions
6. Special Interest Groups
7. Media

The consultant then identified the key contact persons within the stakeholder categories who will be engaged throughout the ESIA study process. The identification of the key contact persons was done in consultation with the proponent, lead agencies, the County Government of Kilifi, Ministry of Interior and National Administration.

Further, the consultant identified other stakeholders who may not be apparent but needed to be consulted and analyzing the role of each stakeholder in the ESIA study process as well as project implementation. Finally, the consultant determined the tools for engaging with each stakeholder including language of communication and allocation of resources to ensure meaningful participation of the stakeholders in the ESIA process.

Following the stakeholder mapping and analysis, public and stakeholder engagement meetings were held to document the views and concerns with regards to the proposal.

1.5 Proposed Project budget

The project budget is estimated to a total of Kenyan Shilling Five Hundred and Fifteen Million Seven Hundred and Sixty Thousand Only (KES 515,760,000). The statutory charge of 0.1% payable to NEMA is therefore KES 515,760. The payment is done on the e-citizen platform after receipt of an invoice from NEMA.

2 BASELINE INFORMATION OF THE PROJECT SITE

2.1 Introduction

This section provides baseline information for the proposed project assessed through site visits carried out in 14th June 2023, where data was collected through use of scoping checklist, observation as well as informal interview with the neighboring communities and complemented by desktop studies. This section expounds on the findings of the survey which will in turn form a basis for the impact monitoring plans and improvement of the environmental and social performance of the project during implementation.

2.2 Site status

The proposed project site is partly undeveloped, has existing residential house, swimming pool (Figure 4) and characterized by various vegetation and coral rocks (Figure 5).

Figure 4: Section of residential establishment (far right) and swimming pool at the project site (Source: Site visit, June 2023)

Figure 5: The undeveloped section of the proposed site comprising of coral rocks (Source: Site visit; June, 2023)

2.3 Marine resources and protected areas

Mangroves, coral reefs and sea grass forms key ecosystem of the marine environment along the coast Kenya. There are nine mangrove species in Kenya, with *Rhizophora mucronata* (mkoko) and *Ceriops tagal* (mkandaa) being the most dominant. Mangrove forests provide habitat for fish species, benthic invertebrates, various bird, acts as carbon sink and provides a line of defense against shoreline erosion. Further, the artisanal fishers rely on the mangrove ecosystem for a substantial part of their catch.

Coral reefs provide an array of ecological goods and services which includes breeding and spawning site for fish, protect coastal line from storms and erosion and provide recreation activities among others. The degradation of coral reefs has been associated with both natural and anthropogenic stressors, such as increased suspended sediments, nutrients imbalance, climate change, predation pressure from herbivores, diseases and fishing activities.

Seagrass provide nurseries, breeding, and feeding grounds for fishery species, support marine food webs thus important in nutrient cycling and carbon sequestration, serve as a primary food source for threatened and endangered species such as sea turtles and the dugong (IUCN, 2010). In addition, seagrasses buffer wave action reducing coastal erosion, while the structure of their leaves act as traps for suspended sediments.

The marine environment within the project area has record of coral reefs and seagrass. These ecosystems require conservation and management to enhance the goods and services they provide. The jetty facility will not be constructed within these critical marine habitats i.e., coral and seagrass

2.4 Climate

The project site lies within North Coast Kenya within Kilifi County. the climate of the local area is strongly influenced by the movement of the Inter Tropical Convergence Zone (ITCZ), which brings monsoon winds and creates a pattern of rainfall occurring in two distinct periods. The first is the long rainy season, which spans from April to July, and the second is the short rainy season, which

occurs between October and December. On average, the area receives an annual rainfall of 900mm. The temperatures remain relatively stable throughout the year, with an average monthly maximum of approximately 30°C and a monthly minimum of around 20°C. The annual average temperatures range from 24.6°C to 27.5°C. The relative humidity remains consistently high throughout the year, peaking at 90% during the wet months, specifically from March to May (Figure 6).

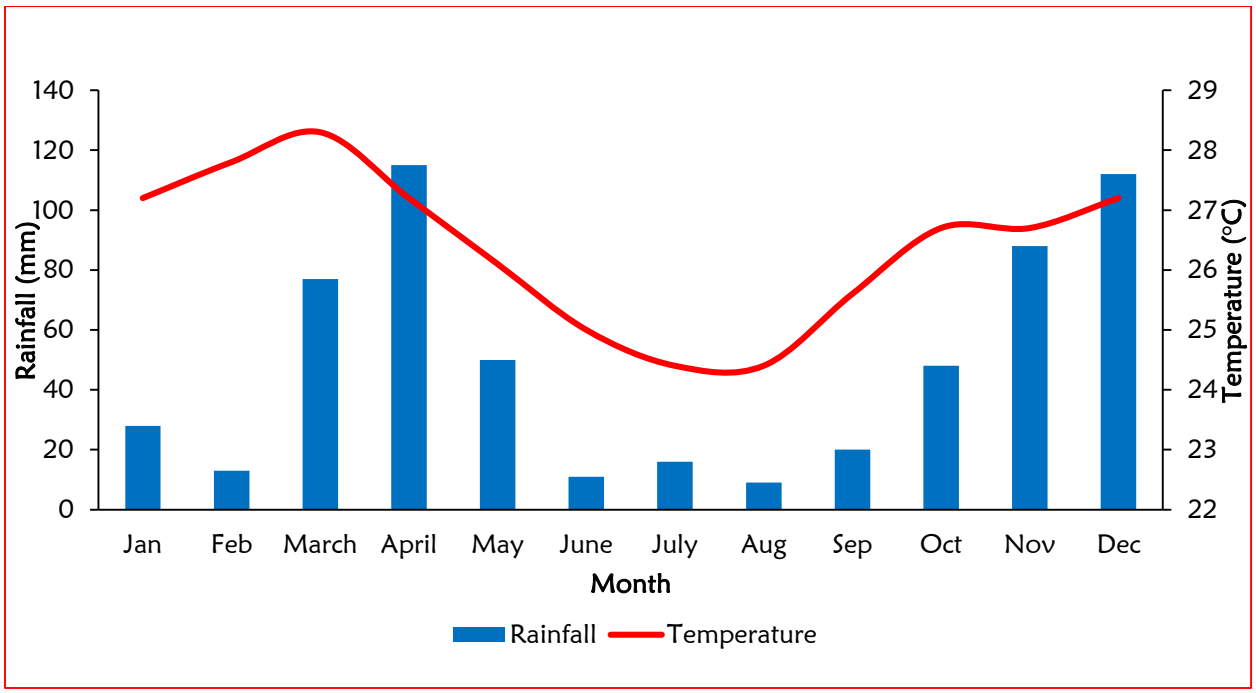


Figure 6: Average rainfall and temperature distribution for Kilifi County (Source: World Weather Online, 2023).

2.5 Population size

Kilifi county is one of the five coastal counties in Kenya and based on 2019 population census, the count has an overall population of 1,453,787 of which 704,089 are males, 749,673 females and 25 intersex persons. The project site lies in Malindi sub-county which has a total population of333,226.

2.6 Topography and soils

Kilifi County has four major topographic features i.e., Coastal Plains, Foot Plateau, Coastal Range and Nyika Plateau. The topography features and soil composition of the region indicate a coastal highland environment. The soil in the area consists mainly of exposed rocks, interspersed with patches of brown loamy soil, sand, and various combinations of these components. (Figure 7)

Figure 7: Section of coral rocks at the project site (Source: Site visit; June, 2023)

2.7 Biodiversity

Kilifi County is endowed with faunal, floral and marine biodiversity. The vegetation cover at the project site comprises of indigenous trees and exotic species. These include baobab tree, neem, *calotopis pocera*, cactus, *Algae palmeri*, *magnolia aslei*, *Casuarina equisetifolia*, *Hibiscadelphis*, Guettarda speciosa, mango tree, palm and coconut trees (Figure 8 & 9).

In addition, the survey did not record marine animal and/or wildlife sightings except for bird species.

Figure 8: Section of existing vegetation types at the project site (Source: Site visit, June 2023)

Figure 9: One of the Baobab trees (left) Mickelthwaitia (middle) and *Calotopis pocera* (right) spp at the project site (Source: Site visit, June 2023)

2.8 Oceanography

The inshore waters of Kenya experiences semi-diurnal tides with a spring tidal range not exceeding 4 m (Brakel 1982; Tychsen 2006). The coastal offshore waters experiences swell whose magnitude varies in different periods of the year. During the Northeast monsoon season, 80% of the swells originate from the Northeast with a maximum significant height of 6m. The sea is usually calm during the inter-monsoon period (March-April) and wave height drops significantly to 2.5m shifting clockwise to a southerly approach with large fluctuations. The waves are usually very large with a maximum significant height of 8m during the Southeast monsoon (May-October) approaching the coast predominantly from Southeast and Southwest direction. Calm conditions follow during the inter-monsoon period and waves tend to approach the coast from a Northeast direction.

The offshore current system off the Kenyan coast is part of the alternating cycle of the Southeast monsoon and the Northeast monsoon (Knox and Anderson 1985, Schott and McCreary 2009). The cycle is caused by alternating high and low pressure systems over central Asia and south of 20°S latitude (Okoola, 1999). The predominant monsoon-driven surface currents off the Kenyan coast are the East Africa Coastal Current, the Somali Current and the Equatorial Counter Current. The East Africa Coastal Current flows northward throughout the year. On the other hand, the Somali current is a typical seasonally reversing current with the current flowing northward during the South East monsoon at a maximum speed of about $2ms^{-1}$. During the Northeast monsoon, the Somali current flows southward at a speed of $1.5\text{-}2ms^{-1}$. The reversed Somali Current meets the East Africa Coastal Current at latitude 2.25°S to form the eastward flowing Equatorial Counter Current which flows as an undercurrent. The width of East Africa Coastal Current is 160-200km with its maximum depth at about 400m.

2.9 Water resources

The main sources of water in the area is Malindi Water and Sewerage Company (MAWASCO). Other sources especially in the rural areas include boreholes, wells, springs, rivers dams and water

pans among others. The proposed hotel development will source its water from the existing connection and supplemented by water bowsers.

2.10 Land use and socio-economic activities

The land use patterns and economic activities are shaped by its unique geography, climate, and natural resources. Generally, Kilifi county is endowed with sunny and sandy beaches, magnificent landscapes, tropical and marine forests and swamps that are home to endemic flora and fauna, rich cultural and historical heritage.

The project site is approximately 3.5 ha that abuts ocean within Malindi in the North Coast Kenya. The areas along the access roads to the site comprises of tourism and hospitality facilities that play key role in supporting the local economic activities. Apart from tourism, the neighbouring also consists of residential establishments (Figure 10), ocean view and the undeveloped parcel of lands are used by local community for livestock grazing (Figure 11).

Figure 10: Residential establishment in the project locality (Source: Site visit, June 2023)

Figure 11: Undeveloped parcel of land (left) and view of the ocean (right) adjacent the project site (Source: Site visit, June 2023)

2.11 Infrastructure

The road networks are greatly influenced by existence of important industrial, tourism and commercial centers. Malindi sub-county infrastructure includes all weather roads traversing through the region. The proposed project site is accessed via an earthed road (Figure 12) approximately 1 kilometer off the Mayungu Road.

Further, most urban areas of Malindi uses electricity from the national grid supplied by the KPLC. In rural areas charcoal, fuel wood and paraffin are main sources of energy. The proposed development will source its energy supply from the national grid and be supplemented by solar system.

Figure 12: Section of the access road to the project site (Source: Site visit; June, 2023)

2.12 Baseline environmental data

2.12.1 Ambient air quality measurements

The objective of the ambient air quality measurements was to measure concentrations of dust and gaseous emissions so that the results can be assessed in relation to the Environmental Management and Coordination (Air Quality Regulations), 2014. Table 3 summarizes the findings of ambient air quality measurements at the project areas. The findings show that the baseline values are within the limits prescribed under the Environmental Management and Coordination (Air Quality) Regulations, 2014.

Table 3: Ambient air quality measurements for the proposed project area (Source: Lahvens (K) Limited, June, 2023).

Monitoring time (hrs)	Weather conditions	Temp °C	Humidity %	CO mg/m³	NO_x ppm	SO_2 µg/m³	O_3	$PM_{2.5}$ µg/m³	PM_{10} µg/m³
1300-1900	Sunny	27	76	0.35	0.04	12.4	0.05	31.8	64.3
1900-0100	Windy	26	82	0.33	0.03	8.6	0.04	28.5	58.6
0100-0700	Windy	24	51	0.3	0.03	7.2	0.04	25.9	57.2
0700-1300	Sunny	24	83	0.36	0.04	10.1	0.05	32.4	60.7

Monitoring time (hrs)	Weather conditions	Temp °C	Humidity %	CO mg/m³	NO_x ppm	SO_2 µg/m³	O_3	$PM_{2.5}$ µg/m³	PM_{10} µg/m³
Average	-	25.25	73	0.34	0.035	9.6	0.045	29.7	60.2
Air Quality Regulations, 2014 limits	-	-	-	2	0.4	80	1.25	-	100

2.12.2 Noise level measurements

The objective of the noise level measurements was to inform measures to safeguard the health of employees and visitors during construction and operation of the proposed project and ensure compliance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009. Table 4 summarizes the findings of noise level measurements in the project area. The findings show that the baseline values are within the limits prescribed under the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.

Table 4: Baseline noise level measurements obtained from at the project area (Source: : Lahvens (K) Limited, June, 2023)

Monitoring period	Time (hrs)	Leq dBA	LAmax (dBA)	LAmin (dBA)	L5 (dBA)	L50 (dBA)	L95 (dBA)
Diurnal noise level	0600-0610	53.8	62.5	49.3	59.5	53.2	51.2
	0700-0710	53.4	69.3	53.3	62.2	54.3	23.1
	0800-0810	56.1	57.8	51.4	52.3	51.9	50.4
	0900-0910	56.6	58.5	55.3	56.6	55.4	54.4
	1000-1010	58.0	66.5	53.3	62.6	57.3	54.6
	1100-1110	50.3	59.7	40.4	52.2	48.6	43.0
	1200-1210	60.2	75.9	51.4	67.4	56.6	53.8
	1300-1310	55.0	64.3	53.0	57.9	54.3	54.2
	1400-1410	54.5	61.9	50.1	67.8	51.8	50.7
	1500-1510	56.7	71.5	49.5	59.7	55.8	51.4
	1600-1610	56.8	63.5	50.7	61.4	50.8	50.3
	1700-1710	62.6	71.0	58.1	59.7	59.5	60.2
Averages	-	56.2	65.2	51.3	59.9	54.1	52.3
Noise Regulations, 2009 limits		60.0					
Nocturnal Noise level	1800-1810	57.6	71.5	53.4	60.6	54.8	54.5

2.12.3 Baseline water quality results

The objective of the water quality sampling and analysis is to provide a baseline for assessing the effectiveness of environmental and social management plans designed to minimize water contamination during the construction of the proposed Jetty. The water quality sampled within the monitoring stations within the project area (Lahvens, 2023) conformed to the standards prescribed under the Third Schedule of the Environmental Management and Coordination (Water Quality), Regulations, 2006 (Figures 13 and 2).

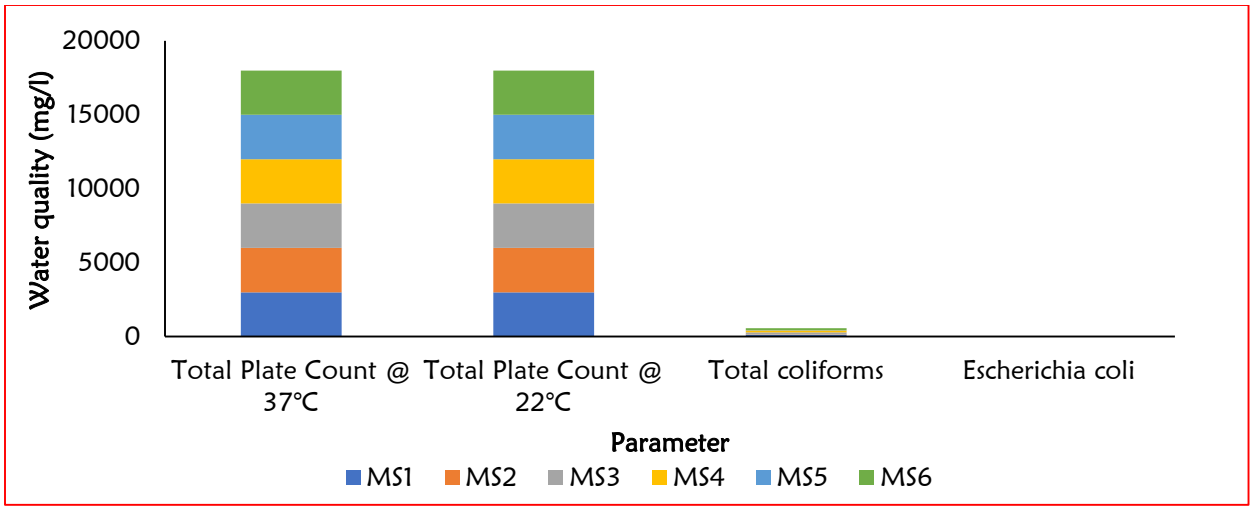


Figure 13: Microbial results within the project area (Source: Lahvens Limited, June 2023).

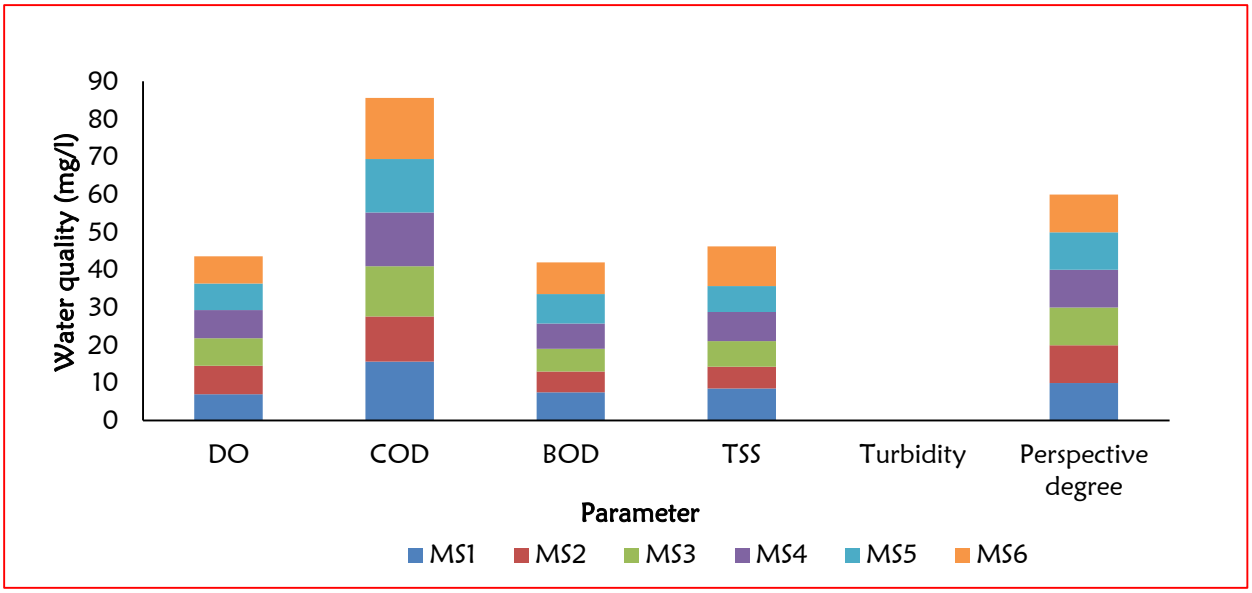


Figure 14: Physio-chemical water quality parameters within the project site (Source: Lahvens Limited, June 2023).

3 IDENTIFICATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This chapter presents the identification and analysis of the anticipated positive and negative environmental impacts of the construction works, operation and possible decommissioning phases of the proposed project. The impacts are presented in regards to their likelihood of occurrence in the physical, biological, occupational and socio-economic environments.

3.1 Anticipated positive impacts

1. The proposed project will improve hotel infrastructure for the area as it is anticipated that the tourism industry will gain as visitor's will be attracted to the improved accommodation services.
2. The proposed project will create employment opportunities to both skilled and non-skilled personnel throughout its life cycle
3. Direct and indirect business opportunities in form of goods and services provided by supply of materials and maintenance services
4. The Jetty facility will provide recreational opportunities to the proponent and a safe infrastructure for anchoring of boats and access to reliable sea transport.
5. The proposed project will improve aesthetic value through maintenance and landscaping of the facility.
6. The proposed project will maximize generation of income to the proponent.
7. The proposed project will generate revenue to Government in form of taxes generated during the acquisition of licenses and taxes. The material to be used during constructions work will also be taxable (16% VAT)

3.2 Anticipated negative impacts

3.2.1 Negative impacts during the construction phase

Prior to commencement of the construction works, the proponent should ensure the architectural and structural plans are approved by the County Government of Kilifi and obtain a demolition permit of the existing residential and swimming pool.

3.2.1.1 Loss of vegetation

The proposed site is characterized by various vegetation cover such as baobab trees, mango trees, palm trees among other species where some will be cleared to pave a way for construction works. However, the proponent and project design will retain the mature trees. To enhance the vegetation cover, this report suggests below outlined mitigation measures.

Recommended mitigation measures

1. Plant trees to compensate of the loss during the construction works
2. Implement the landscaping programme

3.2.1.2 Destruction of the physical environment

Site preparation will involve clearing of vegetation cover to pave way for construction activities of the proposed development. Notably, part of the proposed project is 100% covered with vegetation cover as opposed to the other section of the site which is covered by coral rocks. Vegetation cover provides significant environmental goods and services such as preventing soil erosion, carbon sequestration and climate regulation and is a habitat for birds and other fauna. Therefore, clearance of the vegetation would lead to the loss of these benefits. In addition, construction activities which will involve civil works such as excavations, grading and leveling will create loose soils that are susceptible to erosion. Eroded soils will lead to sediment load and water quality degradation at the channel.

Recommended mitigation measures

1. Obtain authorization permits from Kenya Forest Service (KFS) and County Government of Kilifi prior to felling the mature trees at the site
2. Compact loose soils resulting from civil works to prevent erosion and sedimentation of channel
3. Landscape after completion of project

3.2.1.3 High demand for raw materials

During the construction phase of this nature of infrastructure raw materials in form of sand, ballast, aggregates, soil might be required. Extraction of such materials requires quarrying which alters the natural landscape and poses risks to the residents and locals at the quarries.

Recommended mitigation measures

1. Source raw materials from sites that are licensed as per the Environmental Management and Coordination Act Cap. 387 of the Laws of Kenya
2. Procure quantities of materials in line with the Bill of Quantities
3. Re-use construction wastes such as wood which can be salvaged.

3.2.1.4 Water use

During construction works, water will be required for concrete mixing, casting and curing works, general cleaning, drinking and sanitation purposes and will be sourced from reticulated supply supplemented by water bowsers. Therefore, it is important to note that without sustainable use of the water resources there is a possibility of adverse impacts on the environment.

Recommended mitigation measures

1. Sensitize the workforce at the site on the need to conserve the available water resources
2. Record and monitor the amount of water being consumed
3. Comply with the provisions of the Environmental Management and Coordination (Water Quality) Regulations, 2006

3.2.1.5 Solid waste generation and management

During the constructions phase, the project is expected to generate large amounts of solid waste that will include concrete, tiles, sanitary ware, rubble, e-waste, furniture and other fabric materials. Some of these wastes are not biodegradable and if poorly disposed can be of great risks to the environment and general public.

Recommended mitigation measures

1. Adopt an Integrated Solid Waste Management System
2. Strategically place adequate and well-labelled solid waste collection bins with a capacity for segregation within the project site
3. Re-use the construction works wastes that can be salvaged such as wood
4. Use of materials containing recycled content when possible and in accordance with accepted standards.
5. Sensitize construction workers on the process of solid waste collection, segregation and proper disposal
6. Sell or donate the recyclable /re-usable materials such as cabinets, doors, plumbing and lighting fixtures to other institutions, local community and home owners

7. Contract a NEMA licensed waste handler to dispose-off the solid wastes
8. Ensure E- waste is disposed in line with the Guidelines for E-Waste Management in Kenya
9. Comply with the provisions of the Environmental Management and Coordination (Waste Management) Regulations, 2006
10. Comply with the provisions of the Sustainable Waste Management Act, 2022

3.2.1.6 Air pollution

During the construction works, the air pollution will be in form of dust generated from the demolition works and particulate matters from mortar mixing and exhaust fumes such as carbon monoxides and hydrocarbons from machinery used and Heavy Commercial Vehicles (HCV) delivering materials to the site. The particulate matter might cause respiratory diseases, cause eye irritation and visual intrusion to workers, neighbors and visitors to the project site if it exceeds the limits as per the First Schedule of the Environmental Management and Coordination (Air Quality) Regulations, 2014.

Recommended mitigation measures

1. Sprinkle water at all active demolished areas as and when necessary, to suppress dust.
2. Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.
3. Install dust screens and dust arresters around the project site during the construction works
4. Procure and enforce the use of dust masks to workers and visitors to the project site
5. Ensure proper maintenance and servicing of machinery and equipment.
6. Comply with the provisions of the Environmental Management and Coordination (Air Quality) Regulations, 2014

3.2.1.7 Noise pollution and excessive vibrations

Sources of excessive vibrations and noise pollution include tiles cutting works, delivery of materials by heavy trucks, steel works and any other constructions related activities. The levels of noise produced might exceed the limits as stipulated in the Second Schedule of Environmental and Management Co-ordination (Noise and Excessive vibration pollution) (Control) Regulations, 2009. The noise emitting activities will be restricted to daytime to ensure minimal disturbance to the neighboring residential units.

Recommended mitigation measures

1. Delivery of construction related works materials should be limited to day time hours only between 8am to 5pm
2. Locate machinery that are likely to produce noise as far as practical from neighboring properties
3. Limit pickup trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use,
4. Sensitize truck drivers to switch off vehicle engines whenever possible.
5. Install portable barriers to shield compressors and other small stationary equipment where necessary
6. Comply with the provisions of the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009

3.2.1.8 Occupational safety and health risks

Workers and neighbors to the project site will be susceptible to health and safety hazards during the constructions and demolition works of the project. The inherent occupational risks include muscular skeletal injuries, cuts and bruises, dusts and excessive vibrations. It is also expected that there will be accumulation of various streams of waste especially construction works debris that may cause injuries to workers and people accessing the site thus resulting to financial losses and even death.

Recommended mitigation measures

1. Register the site as a workplace with the Directorate of Occupational Safety and Health Services (DOSHS)
2. Obtain insurance cover for the workers at the site
3. Procure and provide adequate and appropriate Personal Protective Equipment to workers and visitors to the site and enforce their use
4. Provide employees with correct tools and equipment for the jobs assigned and trained on their use
5. Ensure moving parts of machines and sharp surfaces are securely protected with guards to avoid unnecessary contacts and injuries
6. Provide a fully equipped first aid box and trained personnel on site at all times
7. Comply with the provisions of the Occupational Safety and Health Act, 2007
8. Comply with guidelines provided under the National Construction Authority Act, 2014

3.2.2 Negative impacts during the operation phase

3.2.2.1 Increased water demand

During the operation phase, water will be required for general cleaning, laundry, sanitation, swimming pool, fire emergencies and landscaping purposes. The proposed project sources its water from MAWASCO and supplemented by water bowsers and the quantity of effluent discharged depends on the operation and intensity of cleaning and sanitation activities at the facility. The proponent will put in place appropriate measures to ensure conservation of available water resources.

Recommended mitigation measures

1. Install water saving systems such as self-closing taps and low flush water closets
2. Promptly detect and repair of water pipe and tank leakages
3. Install a discharge meter at water outlets to determine and monitor total water usage
4. Undertake domestic water quality analysis of samples from the borehole to ensure conformity with natural potable water standards pursuant to the Environmental Management and Coordination (Water Quality) Regulations, 2006.
5. Ensure timely renewal of the abstraction permits from the Water Resources Authority

3.2.2.2 Wastewater generation and management

Water will be required for general cleaning, drinking and sanitation purposes. Approximately seventy percent (70%) of the domestic water use is generated as effluent from sanitation facilities and cleaning activities. The proposed project design has incorporated the setting up of wastewater treatment system to manage effluent. Improper wastewater disposal might cause nuisance to the public health and environment.

Recommended mitigation measures

1. Construct a bio-digester for waste water treatment
2. Monitor the quality of effluent discharged from the bio-digester in compliance with the Third Schedule of Environmental Management and Coordination (Water Quality) Regulations, 2006
3. Ensure timely renewal of the Effluent Discharge License (EDL) from NEMA
4. Comply with the provisions of the Environmental Management and Coordination (Water Quality) Regulations, 2006

3.2.2.3 Solid waste generation and management

The bulk of the solid waste will be generated during the operation phase and will consist of papers, plastics, glass, textiles and organic wastes. Some of these wastes might cause blockage of drainage systems id poorly disposed. In addition, the organic wastes can cause effect to the environment because as they decompose they produce methane gas and carbon-dioxide, powerful greenhouse gases known to contribute to global warming.

Recommended mitigation measures

1. Procure and provide adequate color coded solid waste collection bins with a capacity for segregation
2. Adopt and Sensitize on the Integrated Solid Waste Management System
3. Contract a NEMA licensed waste handler for disposal of solid waste
4. Comply with the provisions of the Environmental Management and Coordination (Waste Management) Regulations, 2006
5. Comply with provisions of the Sustainable Waste Management Act, 2022

3.2.2.4 Health and safety risks

Guests and workers at the facility will be exposed to health and safety hazards if appropriate measures are not put in place. These hazards could include fire, slips, trips and falls, musculoskeletal injuries and drowning in the swimming pool. However, due to the policies in place, it is expected that control measures will be in place to prevent these hazards.

Recommended mitigation measures

1. Procure and install adequate firefighting equipment at appropriate locations within the site
2. Designate and clearly mark a fire assembly point
3. Clearly display emergency exit points at strategic locations within the facility
4. Provide fully stocked first aid kit and a standby trained lifeguard
5. Implement a fire and emergency response/ evacuation plan
6. Ensure regular servicing of the fire safety equipment by accredited fire service providers
7. Undertake regular inspections and maintenance of electrical installations
8. Comply with the provisions of the Occupational Safety and Health Act (OSHA), 2007

3.2.2.5 Increased energy demand

During operations, energy will be required for lighting, heating water and powering electrical appliances resulting to increased demand. However, the project design has incorporated the installations of solar energy, use of energy saving bulbs and large sized windows to maximize the use of natural light in order to reduce the costs of energy use. The additional measures to ensure energy efficiency are as outlined below.

Recommended mitigation measures

1. Maximize use of motion detectors lighting in places that are occasionally used
2. Use Light Emitting Diodes (LEDs) that have Light Dependent Resistance (LDR) for security and street lighting
3. Upgrade the solar water heating systems
4. Promote the use of energy automatic cards for switching on and off the lights in the units
5. Conduct energy audit once every three years

3.2.3 Negative impacts during the possible decommissioning phase

3.2.3.1 Solid waste generation

Demolition of the project buildings and related infrastructure will result in large quantities of solid waste that will contain materials such as concrete waste, metal, wood, glass, paints, adhesives, sealants and fasteners. Although demolition waste is generally considered as less harmful to the environment since they are composed of inert materials, there is growing evidence that large quantities of such waste may lead to the release of certain hazardous chemicals into the environment. In addition, even the generally non-toxic chemicals such as chloride, sodium, sulfates and ammonia which may be released as a result of leaching of demolition waste, are known to lead to degradation of groundwater quality.

Recommended mitigation measures

1. Obtain demolition permits from the County Government of Kilifi and NEMA
2. Recover re-usable materials for sale or use in other project sites
3. Contract a NEMA licensed waste personnel to handle and dispose waste from the demolition activities
4. Comply with the provisions of the Environmental Management and Coordination (Waste Management) Regulations, 2006 and the Environmental Management and Coordination (Water Quality) Regulations, 2006

3.2.3.2 Air pollution

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

Recommended mitigation measures

1. Water all active decommissioning areas as and when necessary, to suppress dust.
2. Install dust screens around the project site during decommissioning
3. Procure and enforce the use of dust masks to workers at the project site

3.2.3.3 Occupational Safety and Health risks

Demolition workers and the local community will be susceptible to health and safety hazards during the decommissioning phase of the project. Injuries might result from cuts, falls and trips, uncovered trenches and communicable diseases.

Recommended mitigation measures

1. Erect signage to forewarn people on ongoing demolition activities
2. Provide and enforce the use of PPE throughout the demolition works
3. Avail first aid kits on site throughout the entire period
4. Ensure the process of demolition is supervised by competent personnel
5. Comply with the provisions of the Occupational Safety and Health Act, 2007

3.3 Public Consultations and findings

Public participation is a legislative requirement in the EIA process. For the proposed project, the consultant used various strategy i.e., administered questionnaires to the neighborhood on June 2023 and will organize public meetings as stipulated under Regulation 17 of the Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003. It should be noted that the questionnaires were administered for scoping purposes only to obtain the issues and concerns anticipated from the proposed project.

Brief details of the comment obtained from the questionnaires are provided below. The filled questionnaires are annexed to this report (Annex xx).

No.	Respondents Profile			Comments
	Name	Telephone No.	ID No.	
1.	Haji Ismael	-	-	– No objection to the proposal – Enhance security – Allow accessibility to the ocean
2.	Manana Muthoni	0745651387		– Creation of employment – Provide public access along the beach to enhance local tourism
3.	Furaha Kizito	-	-	– No objection to the proposal – No positive or negative impacts
4.	Yusuf Khalis	0796454312	-	– Creation of employment – Promote businesses by sourcing material from the local community – Air pollution in form of dust – Use efficient machinery to minimize noise
5.	Emmanuel Chengo	0114256309	-	– No objection to the proposal – Creation of employment
6.	Kahindi Kazungu	-	-	– No objection – Creation of employment
7.	Halima Njeri	0718293779	-	– No objection to the proposal – No positive or negative impacts

3.4 Grievances Redress Mechanism

3.4.1 Introduction

The project affected persons may raise their grievances and dissatisfactions about actual or perceived impacts in order to find a satisfactory solution. These grievances, influenced by their physical, situational and/or social losses, can emerge at the different stages of the project cycle. Not only should the affected persons be able to raise their grievances and be given an adequate hearing, but also satisfactory solutions should be found that mutually benefit both the affected persons and the project. It is equally important that the affected persons have access to legitimate, reliable, transparent and efficient institutional mechanisms that are responsive to their complaints.

3.4.2 Grievances prevention

Grievances cannot be avoided entirely, but much can be done to reduce them to manageable numbers and reduce their impacts. This will be achieved by;

1. Providing sufficient and timely information to communities. Many grievances arise because of misunderstandings; lack of information; or delayed, inconsistent or insufficient information. Accurate and adequate information about a project and its activities, plus an approximate implementation schedule, should be communicated to the communities, especially affected parties, regularly.
2. Conduct meaningful community consultations. The project proponent should continue the process of consultation and dialogue throughout the implementation of the project. Sharing information, reporting on project progress, providing community members with an opportunity to express their concerns, clarifying and responding to their issues, eliciting communities' views, and receiving feedback on interventions will benefit the communities and the project management.
3. Overall good management of the facility will ensure a reduction in potential conflicts with the local community and other stakeholders.

3.4.3 Grievances Redress Mechanism Tool

The hotel development will provide feedback on any grievances and dissatisfaction from stakeholders during operations. The flow chart below (Figure 13) shows a complaint and proposal consideration mechanism for the plant that provides an accessible channel for submission of complaints and feedback to stakeholders.

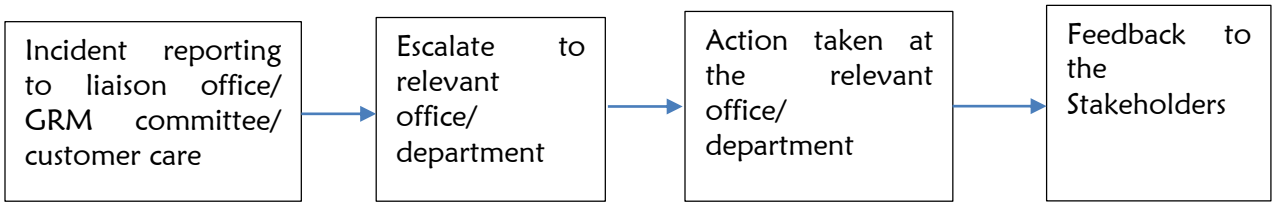


Figure 15: Grievances Redress Mechanism Tool flow chart (Source: World-Bank, 2020).

3.5 Analysis of alternatives

Analyzing project alternatives is important as it allows the proponent to evaluate possible project options that could mitigate the environmental risks identified during the EIA process through prevention, elimination of the risks all together or reduction of the severity of an impact. The analysis will also assist NEMA and lead agencies in decision making by either approving the project as proposed or advising the proponent on the need for a particular alternative. In the current proposal, the alternatives identified are discussed in detail below.

3.5.1 The 'No Project' alternative

The 'No Project' alternative in respect to the proposed project implies the status quo is maintained, meaning that the predicted environmental impacts will not occur and is ideally a best-case scenario for mitigation. However, this option is least preferred from the socio-economic perspective due to the greatest implications on the socio-economic setting of the area and surrounding communities. This mean no jobs will be available, the land will remain unutilized despite tax paid by the owner and no revenue will the government generated. The "No project" alternative is therefore not considered viable in the light of the benefits and deprivations of the project.

3.5.2 The 'Yes Project' alternative

Under the 'Yes Project alternative' it's considered as the most viable option and that the proposed project would be issued with an EIA License. In issuing the license, NEMA would approve the

proponent's proposed constructions provided all environmental measures are complied with during the constructions and operational phases. This alternative consists of the applicant's final proposal with the incorporation of the EIA license conditions and procedures pursuant to the Environmental Management and Coordination Act Cap 387 of the Laws of Kenya.

3.5.3 Alternative site

The alternative site for proposed project is currently not available. The existing location is the best site because the proposed mitigation measures are considered adequate to minimize the impacts to levels that do not warrant significant environmental damage. Furthermore, it's not guaranteed that the site will be in a prime location as is the case for the current site. Thus, the alternative site option is not considered viable.

3.5.4 Alternative Materials and Technology

The proposed project will use modern, locally and internationally accepted standards of materials to achieve environmental aesthetic, safety, security and public health requirements. Equipment that saves energy and water will be given first priority without compromising on cost or availability factors. Heavy use of timber during the construction works is discouraged because of destruction of forests. The exotic species would be preferred to indigenous species where need will arise.

3.5.5 Solid waste management alternatives

A lot of solid wastes will be generated from the proposed project. An Integrated Waste Management System is recommended. First, the proponent will give priority to Reduction at Source of the materials. This option will demand a solid waste management awareness programme in the management and the workers. Secondly, Recycling, Reuse and compositing of the waste will be the second alternative in priority. This will call for a source separation programme to be put in place. The recyclables will be sold to authorized waste buyers as well as re-use whenever possible. The third priority in the hierarchy of options is combustion of the waste that is not recyclable. Finally, sanitary landfilling will be the last option for the proponent to consider.

4 ENVIRONMENTAL MANAGEMENT PLAN

4.1 Introduction

An Environmental and Management Plan (EMP) has been developed to assist the proponent in mitigating and managing environmental impacts associated with the life cycle of the project. The EMP has been developed to provide a basis for an Environmental Management System (EMS; ISO 14001 principles) for the project and ensure the proponent has a predetermined set of compliance guidelines to ensure that the project is carried out safely and; environmental concerns and laid down guidelines are observed.

It is noteworthy that key factors and processes may change through the life of the project and considerable provisions have been made for dynamism and flexibility of the ESMP. As such, the EMSP will be subject to a regular regime of periodic review. In general, this chapter tabulates the anticipated environmental and social issues, recommended necessary mitigation measures, the estimated financial costs, as well as the persons responsible for their implementation and monitoring. The EMP will be used as a checklist in future environmental audits implementation and monitoring.

4.2 Environmental Management Plan for the construction phase

The EMP in table xxx below specifies the mitigation and management measures to which the proponent is committed and shows how the project will mobilize organizational capacity and resources to implement these measures during the construction works phase of the proposed project.

Table 5: Environmental Management Plan during the construction phase

Environmental and Social concerns	Recommended mitigation measures	Implementing party	Timeframe	Estimated cost (KES)
Loss of vegetation cover	Landscaping after completion of the project	Proponent/Contractor	After constructions	In project costs
	Plant trees to compensate of the loss during the constructions	Proponent/Contractor	Throughout construction	TBD
Destruction of physical environment	Obtain authorization permits from KFS and County Government of Kilifi prior to felling the trees at the site	Proponent/Contractor	Prior to construction	As per invoice
	Compact loose soils resulting from civil works to prevent erosion and sedimentation of channel	Proponent/Contractor	Throughout construction	Nil
	Landscape after completion of project	Proponent/Contractor	Throughout construction	In Project costs
Solid waste generation and management	Adopt an Integrated Solid Waste Management System	Proponent/Contractor	Throughout construction	Nil
	Strategically place adequate solid waste collection bins with a capacity for segregation within the site	Proponent/Contractor	Throughout construction	Nil
	Use of construction materials containing recycled content when possible	Proponent/Contractor	Throughout construction	Nil
	Sensitize construction workers on the process of solid waste collection, segregation and proper disposal	Proponent/Contractor	Throughout construction	Nil
	Sell or donate the recyclable /re-usable materials to other institutions, local community and home owners.	Proponent/Contractor	Throughout construction	Nil
	Contract a NEMA licensed waste handler to dispose-off the solid wastes	Proponent/Contractor	Throughout construction	TBD
	Ensure E- waste is disposed in line with the Guidelines for E-Waste Management in Kenya	Proponent/Contractor	Throughout construction	Nil
	Comply with the provisions of EMC Waste Management Regulations, 2006	Proponent/Contractor	Throughout construction	Nil
	Comply with the provisions of the Sustainable Waste Management Act, 2022	Proponent/Contractor	Throughout construction	Nil
High demand of raw materials	Source raw materials from sites that are licensed as per the EMCA Cap. 387 of the Laws of Kenya	Proponent/Contractor	Throughout construction	Nil

Environmental and Social concerns	Recommended mitigation measures	Implementing party	Timeframe	Estimated cost (KES)
	Procure quantities of constructions materials in line with the Bill of Quantities.	Proponent/Contractor	Throughout construction	Nil
	Re-use constructions wastes such as wood and metals which can be salvaged	Proponent/Contractor	Throughout construction	Nil
Air pollution	Sprinkle water at all active demolished areas as and when necessary, to suppress dust.	Proponent/Contractor	Throughout construction	Nil
	Cover all trucks hauling soil, sand and other loose materials.	Proponent/Contractor	Throughout construction	Nil
	Install dust arresters around the project site during constructions	Proponent/Contractor	Throughout construction	TBD
	Procure and enforce the use of dust masks to workers and visitors to the project site	Proponent/Contractor	Throughout construction	50,000
	Ensure proper maintenance and servicing of machinery and equipment.	Proponent/Contractor	Throughout construction	Nil
	Comply with the provisions of EMC Air Quality Regulations, 2014	Proponent/Contractor	Throughout construction	Nil
Water use demand	Sensitize the workforce at the site on the need to conserve the available water resources	Proponent/Contractor	Throughout construction	Nil
	Record and monitor the amount of water being abstracted from the borehole	Proponent/Contractor	Throughout construction	Nil
	Comply with the provisions of EMC (Water Quality) Regulations, 2006	Proponent/Contractor	Throughout construction	Nil
Noise pollution and excessive vibrations	Delivery of raw materials of constructions related works should be limited to 8am to 5pm	Proponent/Contractor	Throughout construction	Nil
	Locate machinery that are likely to produce noise as far as practical from neighboring properties	Proponent/Contractor	Throughout construction	Nil
	Limit pickup trucks and other small equipment to a minimum idling time.	Proponent/Contractor	Throughout construction	Nil
	Sensitize truck drivers to switch off vehicle engines whenever possible	Proponent/Contractor	Throughout construction	Nil
	Comply with provisions of EMC Noise and Excessive Vibration Pollution (Control) Regulations, 2009	Proponent/Contractor	Throughout construction	Nil

Environmental and Social concerns	Recommended mitigation measures	Implementing party	Timeframe	Estimated cost (KES)
Health and safety risks	Register the site as a workplace with DOSHS	Proponent/Contractor	Throughout construction	5,000
	Obtain insurance cover for the workers at the site	Proponent/Contractor	Throughout construction	TBD
	Provide adequate and appropriate PPEs and enforce their use	Proponent/Contractor	Throughout construction	50,000
	Provide employees with correct tools and equipment for the jobs assigned and trained on their use	Proponent/Contractor	Throughout construction	Nil
	Provide a fully equipped first aid box and trained personnel on site at all times during construction works	Proponent/Contractor	Throughout construction	15,000
	Comply with the provisions of the Occupational Safety and Health Act, 2007	Proponent/Contractor	Throughout construction	Nil

4.3 Environmental Management Plan for the Operation Phase

At the operation phase of the hotel facility, major environmental concerns will include increased water and energy demand, wastewater generation and management, solid waste generation and management and health and safety risks. The recommended mitigation measures, allocation of responsibilities and costs pertaining to prevention, minimization of the negative impacts associated with the operational phase of the project are outlined in the table 4 below.

Table 6: Environmental Management Plan during operational phase

Environmental and Social concerns	Recommended mitigation measures	Implementing party	Timeframe	Estimated cost (KES)
Increased water demand	Install water saving systems such as self-closing taps and low flush water closets	Proponent	Throughout operations	In project costs
	Promptly detect and repair of water pipe and tank leakages	Proponent	Throughout operations	Nil
	Install a discharge meter at water outlets to determine and monitor total water usage	Proponent	Throughout operations	Nil
	Undertake domestic water quality analysis of samples from the borehole	Proponent	Quarterly	Internal costs
	Ensure timely renewal of the abstraction permits from the Water Resources Authority	Proponent	Annually	As per invoice
Wastewater generation and management	Construct a bio-digester for waste water treatment	Proponent	Throughout operations	Tender
	Monitor the quality of effluent discharged from the bio-digester in compliance with EMC Water Quality Regulations, 2006	Proponent	Quarterly	10,000 per sample
	Ensure timely renewal of the Effluent Discharge License from NEMA	Proponent	Throughout operations	Nil
	Comply with the provisions of the EMC Water Quality Regulations, 2006	Proponent	Throughout operations	Nil
Solid waste generation and management	Procure and provide adequate color coded solid waste collection bins with a capacity for segregation	Proponent	Throughout operations	Tender
	Adopt and Sensitize on the Integrated Solid Waste Management System	Proponent	Throughout operations	Nil
	Contract a NEMA licensed waste handler for disposal of solid wastes	Proponent	Throughout operations	Internal costs
	Comply with the provisions of the EMC Waste Management Regulations, 2006	Proponent	Throughout operations	Nil

Environmental and Social concerns	Recommended mitigation measures	Implementing party	Timeframe	Estimated cost (KES)
	Comply with provisions of the Sustainable Waste Management Act, 2022.	Proponent	Throughout operations	Nil
Health and safety risks	Procure and install adequate firefighting equipment at appropriate locations within the site	Proponent	Throughout operations	TBD
	Designate and clearly mark a fire assembly point	Proponent	Throughout operations	Nil
	Clearly display emergency exit points at strategic locations within the facility	Proponent	Throughout operations	Nil
	Provide fully stocked first aid kit and a standby trained lifeguard	Proponent	Throughout operations	5,000
	Implement a fire and emergency response/ evacuation plan	Proponent	Throughout operations	Nil
	Ensure regular servicing of the fire safety equipment by accredited fire service providers	Proponent	Throughout operations	Nil
	Undertake regular inspections and maintenance of electrical installations	Proponent	Throughout operations	Internal costs
	Comply with the provisions of the Occupational Safety and Health Act, 2007	Proponent	Throughout operations	Nil
Increased energy demand	Maximize use of motion detectors lighting in places that are occasionally used	Proponent	Throughout operations	Internal costs
	Use Light Emitting Diodes that have Light Dependent Resistance for security	Proponent	Throughout operations	TBD
	Upgrade the solar water heating systems	Proponent	Throughout operations	In project costs
	Promote the use of energy automatic cards for switching on and off the lights in the units	Proponent	Throughout operations	Internal costs

4.4 Environmental Management Plan for the Decommissioning Phase

The possible decommissioning of the hotel development is dependent on the withdrawal of licenses issued by the government or closure of by court order. The key concerns will be solid waste generation and management, air pollution and occupational health and safety risks (Table 5).

Table 7: Environmental Management Plan during possible decommissioning phase

Environmental and Social concerns	Recommended mitigation measures	Implementing party	Timeframe	Estimated cost (KES)
Solid waste generation and management	Obtain demolition permits from the County Government of Kilifi and NEMA	Proponent/ Contractor	Prior to decommissioning	Nil
	Recover re-usable materials for sale or use in other project sites	Proponent/ Contractor	During decommissioning	Nil
	Contract a NEMA licensed waste personnel to handle and dispose waste from the demolition activities	Proponent/ Contractor	Throughout decommissioning	Tender
	Comply with the provisions of EMC Waste Management Regulations, 2006.	Proponent/ Contractor	Throughout decommissioning	Nil
	Comply with the provisions of EMC Water Quality Regulations, 2006	Proponent/ Contractor	Throughout decommissioning	Nil
Air pollution	Water all active decommissioning areas as and when necessary, to suppress dust.	Proponent/ Contractor	Throughout decommissioning	Nil
	Install dust screens around the project site	Proponent/ Contractor	During decommissioning	Nil
	Procure and enforce the use of dust masks to workers at the project site	Proponent/ Contractor	Throughout decommissioning	TBD
Occupational safety and Health risks	Erect signage to forewarn people on ongoing demolition activities	Proponent/ Contractor	Throughout decommissioning	10,000
	Provide and enforce the use of Personal Protective Equipment	Proponent/ Contractor	Throughout decommissioning	TBD
	Avail first aid kits on site	Proponent/ Contractor	Throughout decommissioning	15,000
	Ensure the process of demolition is supervised by competent personnel	Proponent/ Contractor	During decommissioning	Nil
	Comply with the provisions of the Occupational Safety and Health Act, 2007	Proponent/ Contractor	Throughout decommissioning	Nil

5 ENVIRONMENTAL MONITORING PLAN

5.1 Introduction

An Environmental Monitoring Plan (EMP) is proposed to assist the proponent in mitigating possible adverse impacts and enhance the positive benefits arising from the proposed project through implementation of the proposed mitigation measures. The purpose of the monitoring plan is to ensure that the impacts do not exceed legal standards specified under the different legislations and ensure that the negative impacts of the project are mitigated throughout the project cycle by informing timely actions. For the proposed project, four monitoring plans are proposed as follows;

1. Water quality monitoring plan
2. Air quality monitoring plan
3. Sediment budget monitoring plan
4. Noise monitoring plan
5. Solid waste monitoring plan
6. Structural monitoring plan

5.1.1 Water quality monitoring plan

5.1.1.1 Introduction

Water is required for purposes of general cleaning, drinking and sanitation. Seventy percent (70%) of the domestic water use is generated as effluent from sanitation facilities and cleaning activities. The purpose of this monitoring plan is to provide data and information to improve water quality and management of effluent and to comply with the standards prescribed under the Third Schedule of the Environmental Management and Coordination (Water Quality) Regulations, 2006.

5.1.1.2 Monitoring parameters

Effluent from the waste water treatment system and proposed bio-digester will be monitored pursuant to the Third Schedule of Environmental Management and Coordination (Water Quality) Regulations, 2006. The parameters are indicated in table xxx below.

Table 8: Water Quality Monitoring Parameters and the standards prescribed under the Third Schedule of the Environmental Management and Coordination (Water Quality) Regulations, 2006.

Parameter	EMC (Water Quality) Regulations, 2006 Standards
PH Value	6.5-8.5
BOD; mg/L	30max
COD; mg/L	50 max
Total Suspended Solids; mg/L	30 max
Ammonia-NH+; mg/L	100 Max
Total Dissolved Solids; mg/L	1200 Max
E. Coli Colonies; count/100ml	Nil
Total coliform; count/100ml	1000/100ml

5.1.1.3 Monitoring location

Effluent sampling will target the last discharge point of the waste water treatment system and proposed bio-digester at the facility.

5.1.1.4 Monitoring frequency

Effluent sampling and analysis will be undertaken quarterly in collaboration with a NEMA designated laboratory.

5.1.1.5 Indicator of success

Apart from implementing measures to meet the legal standards, ensuring timely renewal of EDL from NEMA will also form part of the indicators of success of the wastewater quality monitoring plan.

5.1.2 Air quality monitoring plan

5.1.2.1 Introduction

Air pollution during the construction phase is in form of dust and gaseous emissions. Air pollution above acceptable limits are toxic to human health and environment. The purpose of the air quality monitoring plan is to ensure that the concentrations of air pollutants during the construction phase are within the standards prescribed under the Environmental Management and Coordination (Air Quality) Regulations, 2014. In addition, the results will be used to evaluate if the adopted air pollution controls and management are effective.

5.1.2.2 Monitoring parameters

Under the Fifth Schedule of the Environmental Management and Coordination (Air Quality) Regulations, 2014, construction sites are listed as sources of fugitive emissions. Therefore, the proponent should monitor fugitive emissions as per the First Schedule of the Environmental Management and Coordination (Air Quality) Regulations, 2014 (Table xxx).

Table 9: Ambient air quality tolerance limits as per the First Schedule of the Environmental Management and Coordination (Air Quality) Regulations, 2014.

Pollutant	Time weighted average	Residential area, Rural & other areas
Sulphur Oxides (SO_X)	Annual Average*	60 $\mu g/m^3$
	24 hours**	80 $\mu g/m^3$
Oxides of Nitrogen (NO_x)	Annual Average*	60 $\mu g/m^3$
	24 hours**	80 $\mu g/m^3$
Nitrogen Dioxide	Annual Average	0.05 ppm
	24 hours	0.1 ppm
Suspended Particulate Matter (SPM)	Annual Average*	140 $\mu g/m^3$
	24 hours**	200 $\mu g/m^3$
Respirable particulate matter (< 10μm) (RPM)	Annual Average*	50 $\mu g/m^3$
	24 hours**	100 $\mu g/Nm^3$
Carbon monoxide/ Carbon dioxide	Annual Average*	2.0 mg/m^3
	24 hours**	4.0 mg/m^3
Non methane hydrocarbons	Instant Peak	700ppb
Ozone	One hour	0.12 ppm
	8 hour (instant peak)	pm

5.1.2.3 Monitoring location

Air quality monitoring should be carried out within the project site during construction phase.

5.1.2.4 Monitoring frequency

Air quality monitoring should be done on a quarterly basis in collaboration with a NEMA designated laboratory during the constructions phase.

5.1.3 Sediment budget monitoring plan

5.1.3.1 Introduction

The construction of a jetty and a podium may result to sediment accretion along the beach corridor. The sediments deposited may change from coarse and medium sand to more refined sediments. Further, the adjacent beach area may benefit from sediment deposition. Thus the proponent should put in place a consistent sediment budget monitoring plan to determine the type, source and net deposition of sediment along the beach corridor to assess the impacts and inform on mitigation measures.

5.1.3.2 Monitoring location

Sediment budget monitoring should be conducted along the property's beach corridor.

5.1.3.3 Monitoring parameters

The monitoring parameters should include the type, nature, source and net amount of sediments deposited.

5.1.3.4 Monitoring method

The monitoring method will involve data collection on erosion and sediment deposition/accretion along the property's beach corridor. A purposive sampling approach will be used to select the sampling sites followed by site visits and key informant interviews with beach users. During these surveys, onsite information using GPS points will be taken and topographic maps developed from both LIDAR data and Google Earth Pro® data using ArCGIS software. The GPS points will be used to define current shorelines following the High Water Line (HWL) shoreline indicator, comprising of a debris line, wet/dry line and change from low to high along the shorelines to delineate shoreline change. Beach profiles will be monitored using the transect method from which the levelling profiles will be recorded and analyzed.

5.1.3.5 Monitoring frequency

The monitoring frequency should be monthly in collaboration with a team of marine scientists.

5.1.4 Noise monitoring plan

5.1.4.1 Introduction

Potential sources of noise pollution will emanate during the construction related activities. Noise may lead to nuisance to the neighbours. The purpose of noise monitoring plan is to therefore ascertain the extent of the impact due to the construction works in compliance with the Second Schedule of the Environmental Management and Coordination (Noise and Excessive Vibrations pollution) (Control) Regulations, 2009. Permissible levels for construction sites are tabulated below (Table xxx).

Table 10: Maximum permissible levels for construction sites as stipulated under the Second Schedule of Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.

Zone		Maximum Noise Level Permitted (Leq) in db(A)	
		Day	Night
(i)	Health facilities, educational institutions, homes for disabled etc.	60	35
(ii)	Residential	60	35
(iii)	Areas other than those prescribed in (i) and (ii)	75	65

5.1.4.2 Monitoring location
Noise monitoring should be carried out within the project site during constructions works.

5.1.4.3 Monitoring frequency
Noise monitoring should be done on a quarterly basis in collaboration with a NEMA designated laboratory. Noise levels will be measured in dB (A).

5.1.5 Solid waste monitoring plan
5.1.5.1 Introduction
During construction, bulk of solid waste will be generated and will include demolition wastes such as concrete, tiles, sanitary ware, rubble, e-waste, furniture and other fabric materials. Poor disposal of these wastes might cause environmental pollution and therefore poses a health risk to the workers, neighbors and visitors. The purpose of this monitoring plan is to therefore ensure solid waste is managed in such a way that it protects both the public health and the environment.

5.1.5.2 Monitoring frequency
The frequency of solid waste monitoring will differ from the collection to the disposal stage in order to ensure reduced accumulated heaps of waste. Table xxx describes the outline for which the activity will be monitored but can be adjusted depending on the amount generated.

Table 11: Sample outline for solid waste monitoring plan

Activity	Frequency	Critical levels (Tons)	Target	Responsibility
Collection	Daily			
Storage	Daily			
Management	Daily			
Disposal	Weekly			

5.1.5.3 Monitoring strategy
The solid waste monitoring plan will document the collection, storage and disposal of solid waste from the proposed project. There is need to code each of the collection points, note the capacity and critical levels, frequency of disposal and the personnel and contractor responsible. In addition, it will be important to characterize the waste streams at the collection points to inform investments in segregation infrastructure.

5.1.5.4 Indicator of success
Indicators of success will include timely collection and disposal of waste by the contractors and waste disposal tracking documents.

5.1.6 Structural health monitoring plan
5.1.6.1 Introduction
The jetty might not withstand high wave energy thus the structural health monitoring plan will provide information of the stability to enhance the property safety as well as the users. The monitoring plan will involve the observation of the jetty over time to pinpoint the damaged sensitive features thereby providing information on the integrity of the structure.

6 GOVERNANCE FRAMEWORKS

6.1 Introduction

The Third Schedule of the Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003 requires that environmental guidelines and standards which include the Kenyan government policies and strategies, National legislation and the Institutional arrangements to render them, should be incorporated in an EIA report. The legal and institutional frameworks provide important precautions for protection and conservation of the environment and ensuring community health and safety. Under this section, the EIA will therefore review the applicable sets of laws and institutions which are tasked with the protection and conservation of the environment at the proposed project site.

6.2 Policy Frameworks

6.2.1 National Environment Policy, 2013

Kenya has a National Environment Policy prepared and approved in 2013 by the Ministry of Environment, Water and Natural Resources. Its overall goal is to provide better quality of life in Kenya for present and future generations through sustainable management and use of the environment and natural resources. This policy promotes capacity building in the field of health and impact analysis from ongoing projects. It ensures the development and implementation of a harmonized Integrated Coastal Zone Management Policy, improves policy implementation and strictly enforce environmental regulation in order to improve environmental quality and health.

6.2.2 The National Tourism Blueprint 2030

It is the transformational framework for the tourism sector. It departs from the traditional tourism approaches to vibrant, innovative and inclusive propositions that seek to provide unforgettable experiences to visitors and ensures that the tourism resources benefit the Kenyan communities. It aims at ensuring that the sector continues to thrive within the requisite enabling environment. Furthermore, it seeks to ensure that efforts by all tourism players in Kenya are well coordinated so that the necessary synergies are developed and enhanced at all levels, both within the private and public sectors. The framework sets the pace towards making tourism a key catalyst of the country's economy.

6.2.3 The Kenya National Climate Change Response Strategy of 2010

The Government of Kenya has strategies it's taking to address issues related to the impact of climate change on various sectors of the economy. The proposed project design has taken into consideration the renewable source of energy and will apply climate change mitigation measures in its operations.

6.2.4 Integrated Coastal Zone Management Policy

The policy was developed to guide the management and utilisation of the coastal and marine environment and its resources to ensure sustainable livelihoods and development through seven strategic areas which have been prioritised for action. The policy highlights the status, trends, threats and impacts to Kenya's coastal and marine environment; and the institutional arrangements for the management of coastal and marine resources.

6.2.5 The Shoreline Management Strategy, 2010

NEMA developed a shoreline management plan consistent with the Environment and ICZM policies. The Strategy firstly identifies the key shoreline management issues in Kenya on a systematic

basis using sediment cells, recommends shoreline management policies and objectives in response to these observed issues and finally outlines strategies to achieve these policies and objectives.

6.3 Legal Frameworks

6.3.1 The Kenya Constitution, 2010

The Constitution of Kenya, 2010 is the supreme law of the land. Under Chapter IV, Article 42 provides for the right to a clean and healthy environment for all. Further, Chapter V of the Constitution deals with Land and Environment. Specifically, Part 2 elaborates on the obligations of the proponent in respect to protection of the environment and enforcement of environmental rights.

Relevance to the proposed project

- The proponent is entitled to a fair administrative decision-making process from NEMA and other State organs.
- The proponent must ensure that the development is carried out in an ecologically, economically and socially sustainable manner

6.3.2 The Environmental Management and Co-ordination Act (EMCA) Cap. 387 of the Laws of Kenya

The EMCA Cap 387 is the principal law that governs the use, management and regulation of environmental resources in Kenya. Under the second schedule, amended vide legal notice number 31 of 2019, the proposed project is categorized as a High Risk Project. The assessment was conducted following recommendation under sub regulation 3 (i) stating "where Authority considers that the proposed project will have a significant adverse environmental impact, it shall recommend that the proponent should prepare and submit a full scale Environmental Impact Assessment." This EIA study Report has been prepared for submission pursuant to Regulation 7 (4) of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019. Below is a highlight of key regulations under EMCA, Cap 387;

1. **Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003**
   It describes how experts should conduct the EIA process including guidelines and standards to be met by the reports. The Regulations were reviewed in 2016 to align them to the Kenya Constitution 2010. They were also recently amended (2019) to address challenges that have been reported since they were gazetted. This report complies with the provisions of these Regulations.

2. **Environmental Management and Coordination (Waste Management) Regulations, 2006**
   The Regulations focuses on management of solid wastes, industrial wastes, hazardous wastes, toxic substances and radioactive substances. It is aimed at addressing the impact of solid waste pollution on the environment which becomes important sources of disease-causing pathogens. In compliance with these Regulations, the proponent should ensure proper solid waste management throughout the project cycle.

3. **Environmental Management and Coordination (Water Quality) Regulations, 2006**
   These Regulations address the challenges of pollution of water resources and conservation. It consists of VI parts and eleven schedules dealing with protection of sources of water for domestic use to miscellaneous provisions. For the proposed project, the proponent should monitor the quality of the effluent before discharge into the environment to ensure

compliance with the Third Schedule of Environmental Management and Coordination (Water Quality) Regulations, 2006.

4. **Environmental Management and Coordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009**
   These Regulations were enacted pursuant to the provisions of Section 42 (3) of EMCA. The objective is to facilitate the sustainable utilization and conservation of resources on river banks, lake shores, and on the seashore by and for the benefit of the people and community living in the area. Further, it makes provision for any person carrying out such activities must obtain a permit from the relevant lead agency in this case the Kenya Maritime Authority. Special measures must be taken to prevent Pollution of the Sea from both construction and use of the jetty facility.

6.3.3 The Tourism Act, 2011

The purpose of the Tourism Act is to provide for the development, management, marketing and regulation of sustainable tourism and tourism-related activities and services, and for connected purposes. The Act regulates tourism-related activities in Kenya, with a view to mitigating tourism related pressure on ecosystems, preserving community structure, sustaining productivity and conserving biodiversity. Because of its high economic value to the country's GDP, legal, institutional and policy instruments in Kenya encourage the development and expansion of tourism in Kenya's coastal and marine areas. However, there is no legislation as yet which addresses or regulates the aesthetic and social aspects of tourism developments and the impact these might have on the coastal and marine environment.

Relevance to the proposed project

- The proponent should promote responsible tourism, obtain all licenses under the Act and ensure compliance with the licensing conditions

6.3.4 The Hotels and Restaurant Act, 2009

This Act in part states that; a) No premises shall be used or kept as a hotel unless there is in force a valid hotel license in respect of such hotel; b) No person shall exercise overall control over the day-to-day operation of a hotel, whether he is the owner or the manager of such hotel, unless he is the holder of a hotel manager's license; c) No premises shall be used or kept as a restaurant unless there in force a valid restaurant license in respect of such premises.

Relevance to the proposed project

- The facility is licensed as per the Hotel and Restaurants Act and keeps copies of the licenses available for inspection.

6.3.5 The Sustainable Waste Management Act, 2022

This Act establish the legal and institutional framework for the sustainable management of waste and ensure the realization of the constitutional provision of the right to clean and health environment. The Act further make provisions for adoption of cleaner production principles, enable the recovery and re-use of products where possible, separate hazardous and non-hazardous waste and ensure disposal at the facility provided by county government.

Relevance to the proposed project

- Proponent should ensure compliance with this Act by;

i). Providing waste segregation receptacles at the premise,

ii). Re-using and recycling wastes as much as possibly practicable
iii). Procuring services of licensed waste personnel to transport and dispose off the wastes

6.3.6 The Fisheries Act, 2016

This Act was established to provide for the development, management, exploitation, utilization and conservation of fisheries and for connected purposes. Section 44 of the Fisheries Act, 2016 which states thus "No person shall dump gear, moorings or other objects in the sea or leave unnecessarily or abandon such objects in the sea or on the seabed if they may adversely affect fish or other marine organisms including by continuing to enmesh, trap or otherwise catch fish, impede harvesting operations, damage harvesting gear or endanger vessels".

Further, Section 49 of the Act states that "No person shall prepare for the introduction of, attempt to introduce or introduce into the Kenya fishery waters, directly, indirectly, deliberately, any deleterious article or substance, including articles or substances which may have toxic, hazardous or other harmful properties or effects in relation to fish or the marine environment, and which may adversely affect the habitat or health of the fish".

Relevance to the proposed project

– The proponent should ensure compliance with this Act

Kenya Maritime Authority Act, 2012

This Act makes provisions for attaining international standards in safety and security and the preservation of the marine environment. The KMA Act domesticates the ability of the Kenya government to implement International Maritime Organization (IMO) Conventions related to shipping and maritime safety that it has ratified.

Relevance to the proposed project

– The jetty facility will need to adhere to the KMA and Merchant Shipping Acts by ensuring the safety of other sea users during construction and operational phase of the jetty.

6.3.7 Occupational Safety and Health Act, 2007

It is an Act of Parliament to provide for the safety, health and welfare of workers and all persons lawfully present at workplaces. Although the OSHA, 2007 repealed the Factories and Other Places of Work Act Cap. 514 of the Laws of Kenya, it inherited all the subsidiary legislation issued under Cap. 514. Examples of subsidiary legislation inherited include:

- Docks Rules L.N. 306 of 1962
- Eyes Protection Rules L.N. 44 of 1978
- Building Operations and Works of Engineering Construction Rules L.N. 40 of 1984
- Electric Power Special Rules L.N. 340 of 1979
- First Aid Rules L.N. 87 0f 1964
- Cellulose Solutions Rule L.N. 87 of 1964
- Health and Safety Committee Rules L.N. 31 of 2004
- Medical Examination Rules L.N. 24 of 2005
- Noise Prevention and Control Rules L.N. 25 0f 2005
- Fire Risk Reduction Rules L.N. 59 0f 2007
- Hazardous Substances Rules L.N. 60 of 2007

Relevance to the proposed project

- The proponent should register the site as a workplace with the Directorate of Occupational Safety and Health Services (DOSHS).
- The proponent should provide the workers with adequate and appropriate PPE.

6.3.8 The County Government Act, 2012

The new constitution grants County Governments the powers to grant or to renew business licenses or to refuse the same. To ensure implementation of the provisions of the new constitution, the County Governments are empowered to make by-laws in respect of all such matters as are necessary or desirable for the maintenance of health, safety and well-being of the general public.

Relevance to the proposed project

- The Act gives right to access private property at all times by the County Government officers and servants for inspection purposes.

6.4 Institutional arrangements

To implement the above legal framework, the government has established a number of institutions with varying mandates of implementation. These include;

1. The National Environment Management Authority to implement the Environmental Management and Coordination Act and associated Regulations.
2. The Directorate of Occupational Safety and Health Services to implement the Occupational Safety and Health Act, 2007
3. The Kenya Maritime Authority to Implement the Kenya Maritime Authority Act, 2012
4. The County Government of Kilifi to implement the County Government Act, its by-laws, the Public Health Act and the Physical Planning Act.

7 CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

The proposed hotel development is considered to be beneficial as it will improve hotel infrastructure for the area, create employment opportunities, promote businesses, improve aesthetic value, provide income to the proponent, and will be source of revenue to the government. Besides the benefits, there will be negative environmental and social impacts at all phases of the project cycle. The main environmental concerns include loss of vegetation cover, solid waste generation and management, increased water and energy demand, wastewater generation and management, occupational safety and health risks, noise pollution and excessive vibrations and air pollution. The EIA Study Report proposes a suite of Environmental Management and Monitoring Plans to address the anticipated issues during the entire project cycle and enhance the environmental performance of the proposed project.

7.2 Recommendations

The main recommendation of the EIA is the need for concerted implementation of the EMP and Monitoring Plans by the proponent. These include;

1. Landscaping after completion of the project
2. Adopt an Integrated Solid Waste Management System
3. Comply with the provisions of Environmental Management and Co-ordination (Waste Management) Regulations, 2006
4. Comply with the provisions of the Sustainable Waste Management Act, 2022
5. Install dust arresters around the project site during construction
6. Comply with the provisions of Environmental Management and Co-ordination (Air Quality) Regulations, 2014
7. Comply with the provisions of Environmental Management and Co-ordination (Water Quality) Regulations, 2006
8. Register the site as a workplace with DOSHS
9. Provide adequate and appropriate PPEs and enforce their use
10. Provide a fully equipped first aid box and trained personnel on site at all times
11. Comply with the provisions of the Occupational Safety and Health Act, 2007
12. Install automatic water saving faucets during operation phase
13. Ensure timely renewal of the abstraction permits from the Water Resources Authority
14. Ensure timely renewal of the Effluent Discharge License from NEMA
15. Procure and install adequate firefighting equipment at appropriate locations within the site
16. Clearly display emergency exit points at strategic locations within the facility
17. Ensure regular servicing of the fire safety equipment by accredited fire service providers
18. Maximize use of motion detectors lighting in places that are occasionally used
19. Upgrade the solar water heating systems
20. Promote the use of energy automatic cards for switching on and off the lights in the units
21. Comply with the Shoreline Management Strategy, 2010.

On the basis of a commitment by the proponent to implement the proposed mitigation measures and the Environmental Management Plan to the latter, we recommend issuance of an EIA License as per the Environmental Management and Coordination Act Cap. 387 of the Law of Kenya and Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003.

8 REFERENCES

1. Constitution of Kenya, 2010. Government Printers, Nairobi, Kenya.
2. *Kenya gazette supplement Acts* Environmental Management and Coordination (Air Quality) Regulations. 2014. Government Printers, Nairobi, Kenya.
3. *Kenya gazette supplement Acts* Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009. Government printer, Nairobi, Kenya.
4. Kenya gazette supplement Acts Public Health Act (Cap. 242), 2012. Government printer, Nairobi, Kenya.
5. *Kenya gazette supplement Acts* Sustainable Waste Management Act, 2022 Government Printers, Nairobi, Kenya.
6. *Kenya gazette supplement Acts*, Environmental Management and Coordination Act Number 8 of 1999 (Amended 2015) Government printer, Nairobi, Kenya.
7. *Kenya gazette supplement number 56*. Environmental Impact Assessment and Audit Regulations, 2003. Government Printers, Nairobi, Kenya.
8. *Kenya gazette supplement number 68*, Environmental Management and Coordination (Water Quality) Regulations, 2006 Government printer, Nairobi
9. *Kenya gazette supplement number 69,* Environmental Management and Coordination (Waste management) Regulations, 2006. Government printer, Nairobi, Kenya.
10. Kenya National Bureau of Statistics, 2019
11. Kilifi County Integrated Development Plan, 2018-2022
12. The Occupational Safety and Health Act, 2007. Government Printers, Nairobi, Kenya.

9 APPENDICES

1. Copy of Certificate of Incorporation for Kango Enterprises Limited
2. Copy of PIN Certificate for Kango Enterprises Limited
3. Copy of Land ownership for the proposed project site
4. Copy of the drawings and site layout plans
5. Copies of public consultation questionnaires
6. Copy of NEMA practicing license for the Firm, Envasses Environmental Consultants Limited
7. Copy of NEMA practicing license for the Lead Expert, Mr. Simon Nzuki

KENYA REVENUE AUTHORITY

www.kra.go.ke

PIN Certificate

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

Certificate Date : 15/09/2015

Personal Identification Number

P051350355V

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

Taxpayer Information

Taxpayer Name	Kango Enterprises Limited
Email Address	biko_o@yahoo.com

Registered Address

L.R. Number :	**Building :** KILELESHWA
Street/Road : TABERE ROAD	**City/Town :** NAIROBI CITY (WEST)
County : Nairobi	**District :** Westlands District
Tax Area : Westlands	**Station :** West of Nairobi
P. O. Box : 78080	**Postal Code :** 00507

Tax Obligation(s) Registration Details

Sr. No.	Tax Obligation(s)	Effective Date
1	Income Tax - Company	21/02/2011

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

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

(4)

REPUBLIC OF KENYA

THE REGISTERED LAND ACT
(Chapter 300)

Title Deed

Title Number CHEMBE/KIRAPANSHE/327

Approximate Area 3.4 Ha

Registry Map Sheet No. 22

This is to certify that KANGO ENTERPRISES LIMITED

BOX 78080 NAIROBI.

is now registered as the absolute proprietor(s) of the land comprised in the above-mentioned title, subject to the entries in the register relating to the land and to such of the overriding interests set out in section 30 of the Registered Land Act as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the

KILIFI District Land Registry

this SIXTH day of MAY, 1999

Land Registrar

Affidavit / Declaration ... in the annexed matter ... referred ... at Nairobi ... this ... 19 ... before me ... Commissioner for Oaths / Notary Public

(To be completed only when the applicant has paid the fee of Sh. 50)

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

PART A—PROPERTY SECTION

...ITION: II		
...PENED: 22.12.86		
REGISTRATION SECTION	EASEMENTS, ETC.	NATURE OF TITLE
CHEMBE/KIRABAMSHE		
PARCEL NUMBER		
327		ABSOLUTE
APPROXIMATE AREA		
3.4 —HA.		
REGISTRY MAP SHEET No.		
22		

PART B—PROPRIETORSHIP SECTION

ENTRY NO.	DATE	NAME OF REGISTERED PROPRIETOR	ADDRESS AND DESCRIPTION OF REGISTERED PROPRIETOR	CONSIDERATION AND REMARKS	SIGNATURE OF REGISTRAR
4	6.5.99	KANGO ENTERPRISES LIMITED	BOX 78080 NRB		
5	6.5.99	TITLE	DEED	ISSUED	

PART C—ENCUMBRANCES SECTION

DATE	NATURE OF ENCUMBRANCE	FURTHER PARTICULARS	SIGNATURE OF REGISTRAR

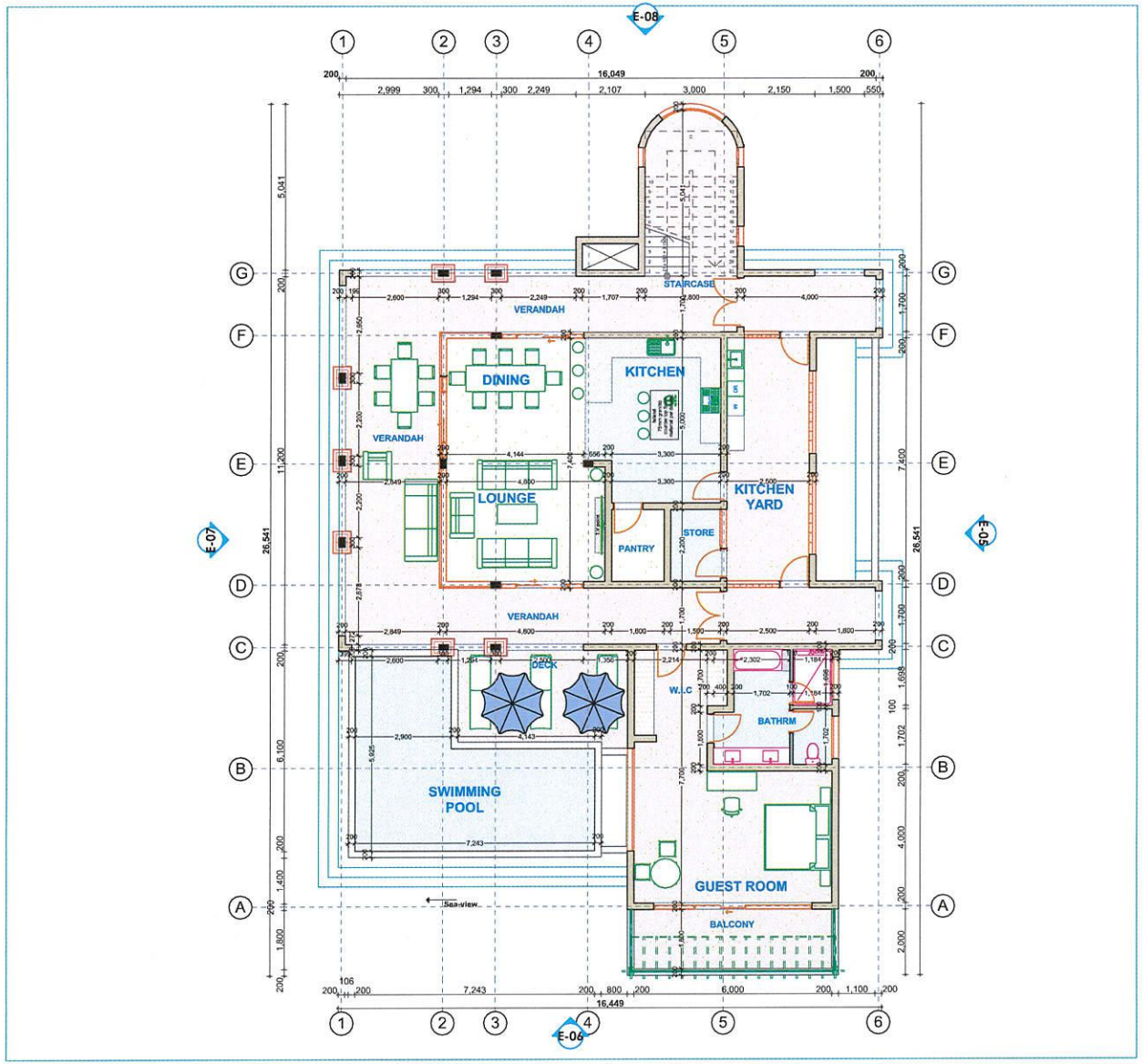
Land Registrar

L1124-200m-11/90

SCHEDULE OF ACCOMMODATION

1.) Hotel & Conference Hall
Ground Floor = 3,125sqm
1st Floor = 2,996sqm
2nd Floor = 2,751sqm
Total Area = 8,872sqm
2.) Presidential Villa
Ground Floor = 500sqm
1st Floor = 432sqm
Total Area = 932sqm
3.) Apartment Block @ 6 blocks
Ground Floor = 300sqm
1st Floor = 270sqm
2nd Floor = 270sqm
Total Area = 840sqm x 6 blocks = 5,040sqm
4.) 3 Bedroom Villa @ 4 blocks
Ground Floor = 255sqm
1st Floor = 178sqm
Roof Level = 154sqm
Total Area = 587sqm x 4 blocks = 2,348sqm
GRAND TOTAL = 8,872 + 932 + 5,040 + 2,348 sqm = 17,192SQM

Project Title	Architect's sign.	Notes	Scale		Drawing Title
PROPOSED HOTEL DEVELOPMENT ON PLOT NO CHEMBE KIBABA MUCHE			1:50		SITE PLAN
			Date		Drawing No.
Client	Client's sign.		16/05/2023		L[--]00
			Drawn by	Checked	Revision No.
			B.K	K.A	01

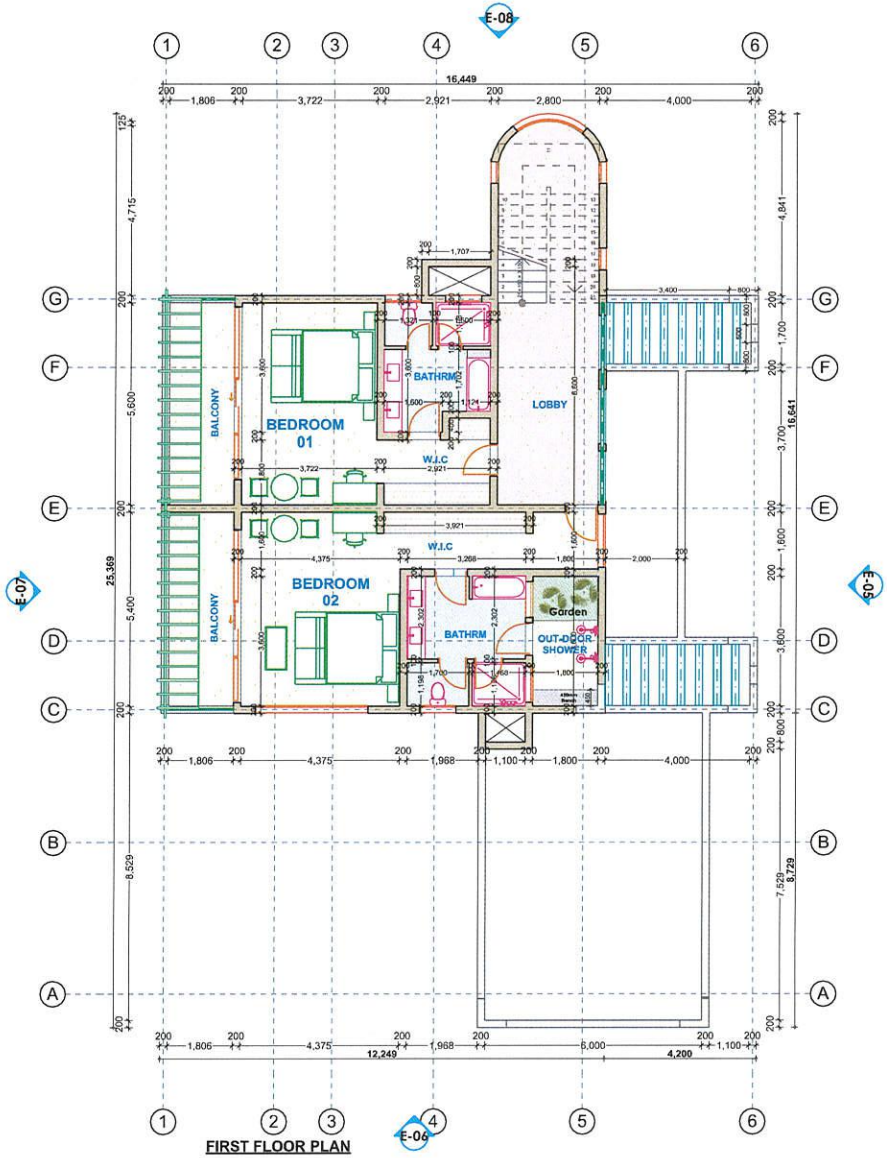


GROUND FLOOR PLAN

AREA = 255 + 178 + 145 = **578msq**

3 Bedroom Villa

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE			1:20	FLOOR PLAN
			Date	Drawing No.
Client	Client's sign.		16/05/2023	L[--]01
			Drawn by / Checked	Revision No.
			B.K / K.A	01



FIRST FLOOR PLAN

AREA = 178msq

3 Bedroom Villa

Project Title	Architect's sign.	Notes	Scale	Drawing Title
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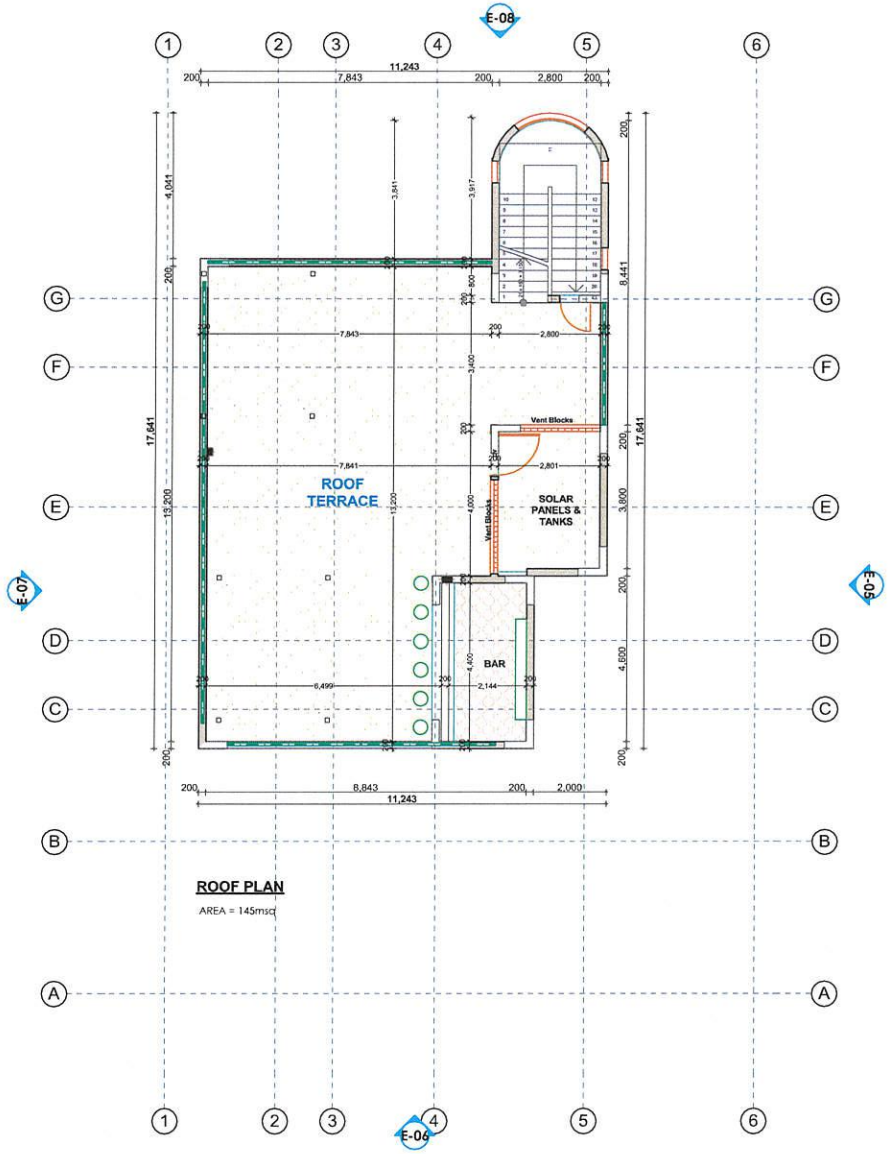

ROOF PLAN

AREA = 145msq

3 Bedroom Villa

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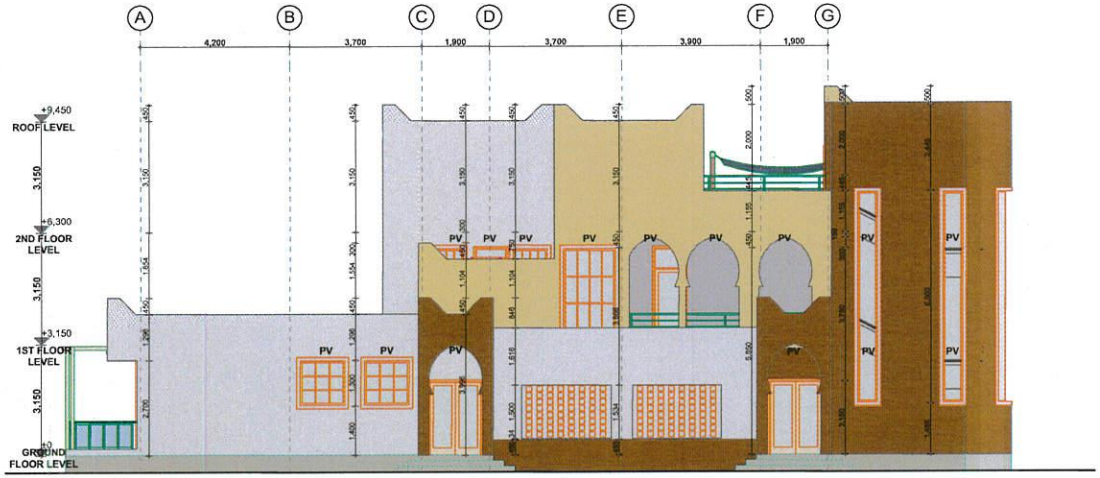
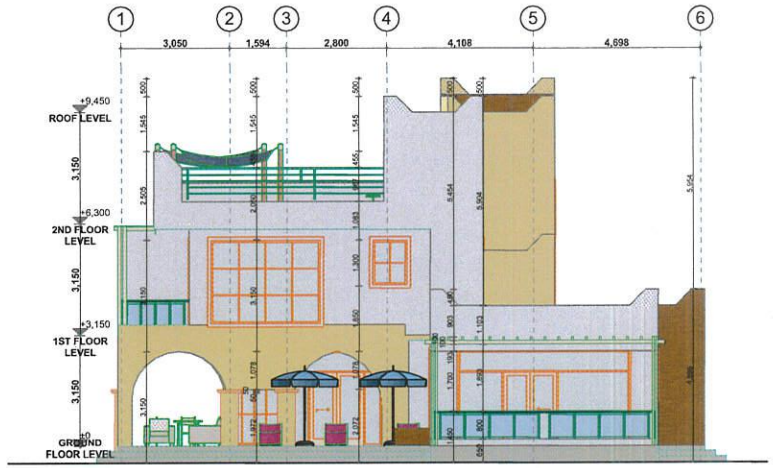


ELEVATION - 05



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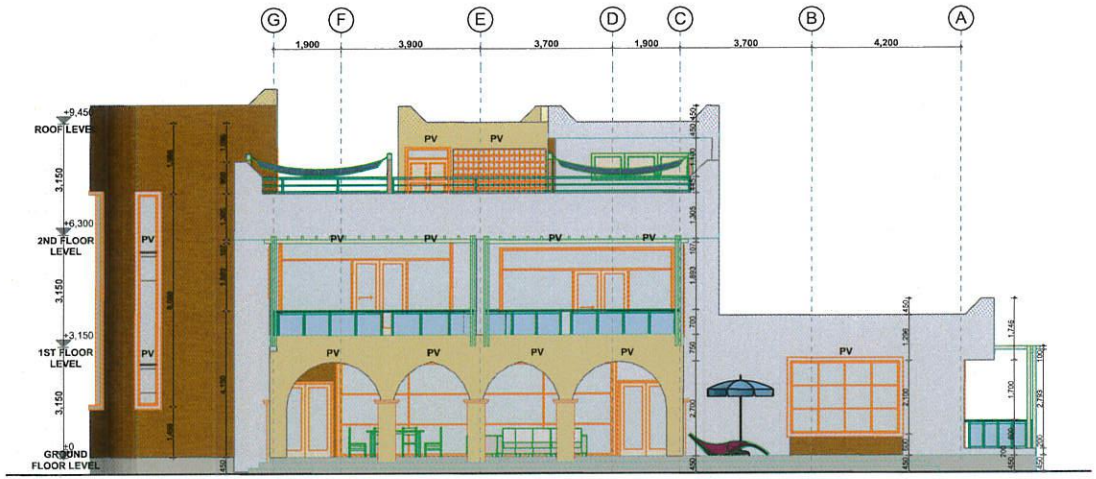

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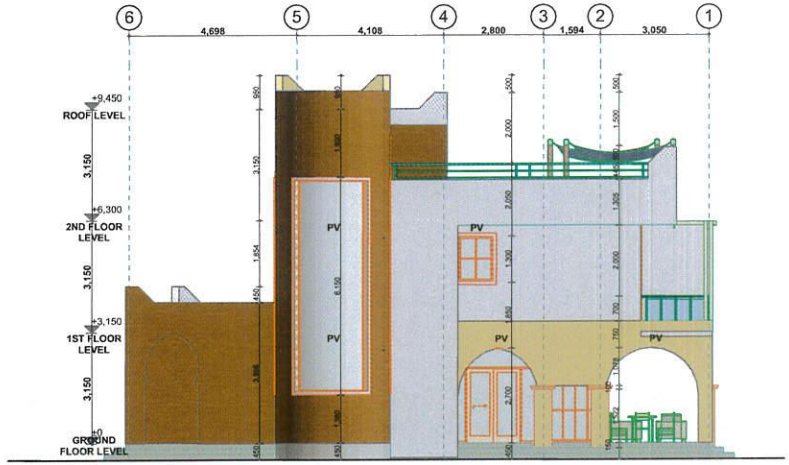

ELEVATION - 08

3 Bedroom Villa

Project Title	Architect's sign.	Notes	Scale		Drawing Title
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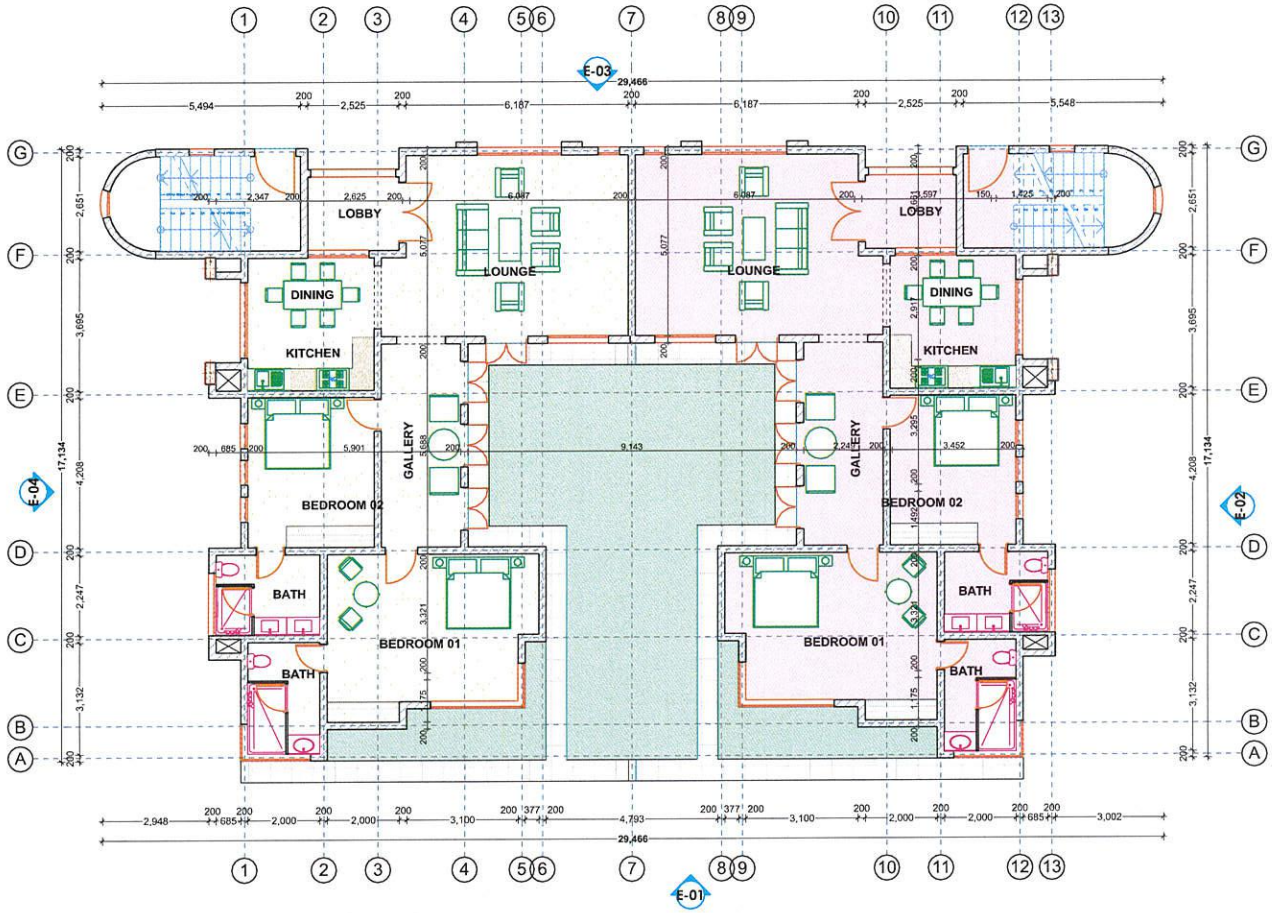

GROUND FLOOR PLAN

1No. 2 Bedroom Unit

1No. 3 Bedroom Unit (duplex)

Floor Area = 270M²

Apartment Typology A

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE		Summary = Ground Floor Area = 300M² 1st Floor Area = 270M² 2nd Floor Area = 270M² **Gross floor Area = 840M²**	1:20	FLOOR PLAN
			Date	Drawing No.
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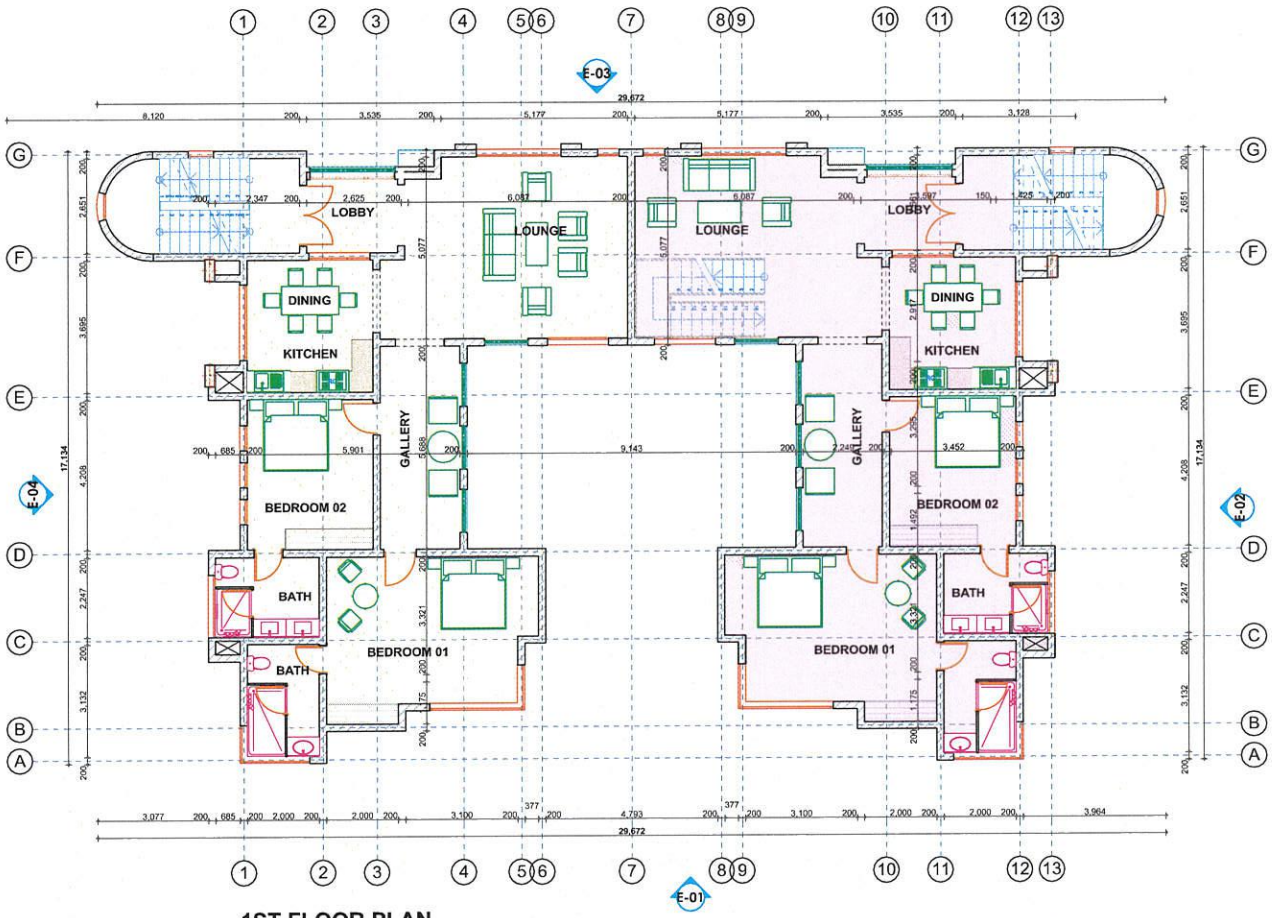
			B.K / K.A	01



1ST FLOOR PLAN

1No. 2 Bedroom Unit

1No. 3 Bedroom Unit (duplex)

Floor Area = 270M²

Apartment Typology A

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE		Summary = Ground Floor Area = 300M² 1st Floor Area = 270M² 2nd Floor Area = 270M² **Gross floor Area = 840M²**	1:20	FLOOR PLAN
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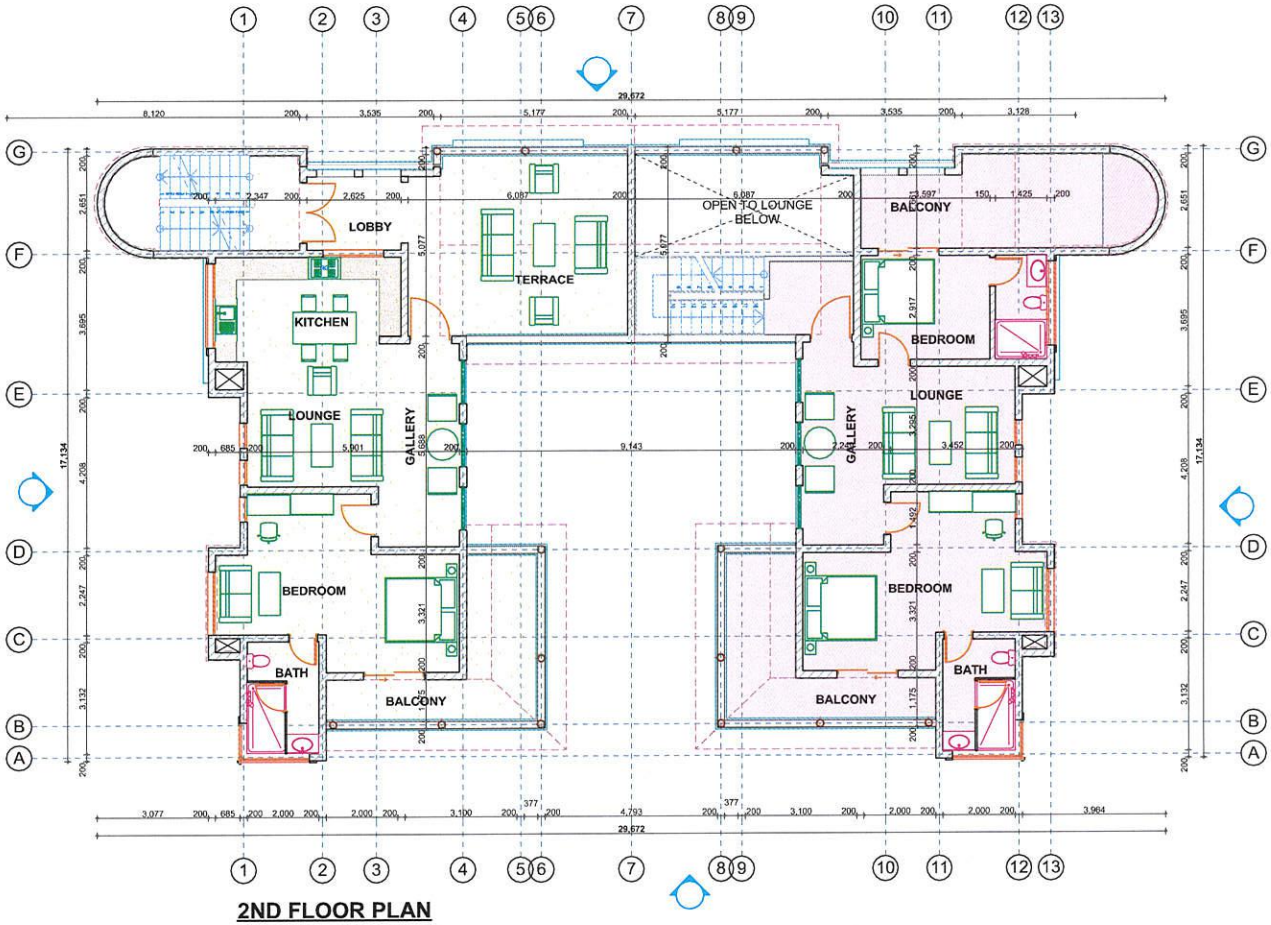

2ND FLOOR PLAN

1No. 1 Bedroom Unit

Floor Area = 270M²

Apartment Typology A

Project Title	Architect's sign.	Notes	Scale		Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE		Summary = Ground Floor Area = 300M² 1st Floor Area = 270M² 2nd Floor Area = 270M² **Gross floor Area = 840M²**	1:20		FLOOR PLAN
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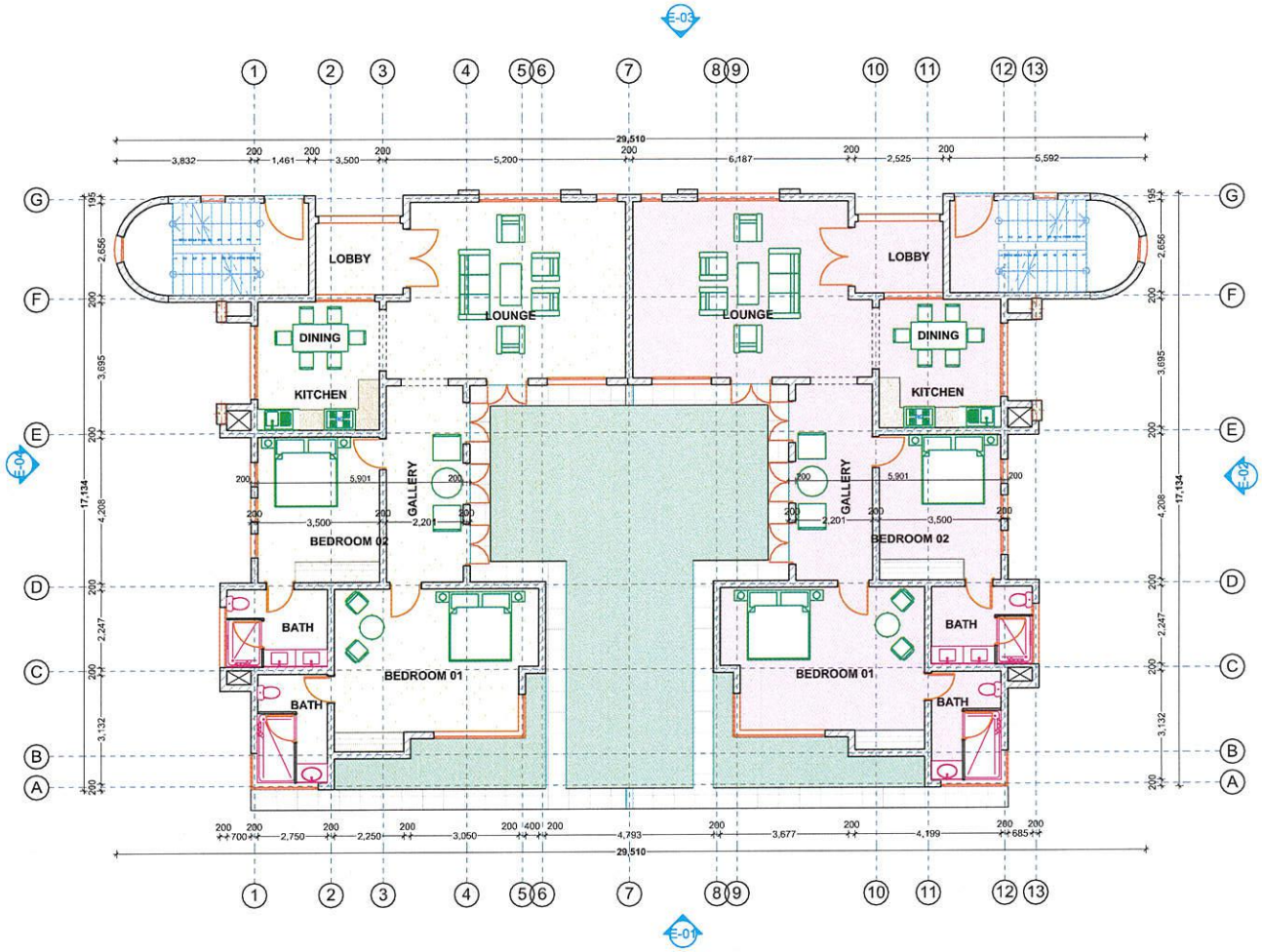

GROUND FLOOR PLAN

2No. 2 Bedroom Units

Floor Area = 270M²

Apartment Typology B

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE		Summary = Ground Floor Area = 300M² 1st Floor Area = 270M² 2nd Floor Area = 270M² **Gross floor Area = 840M²**	1:20	FLOOR PLAN
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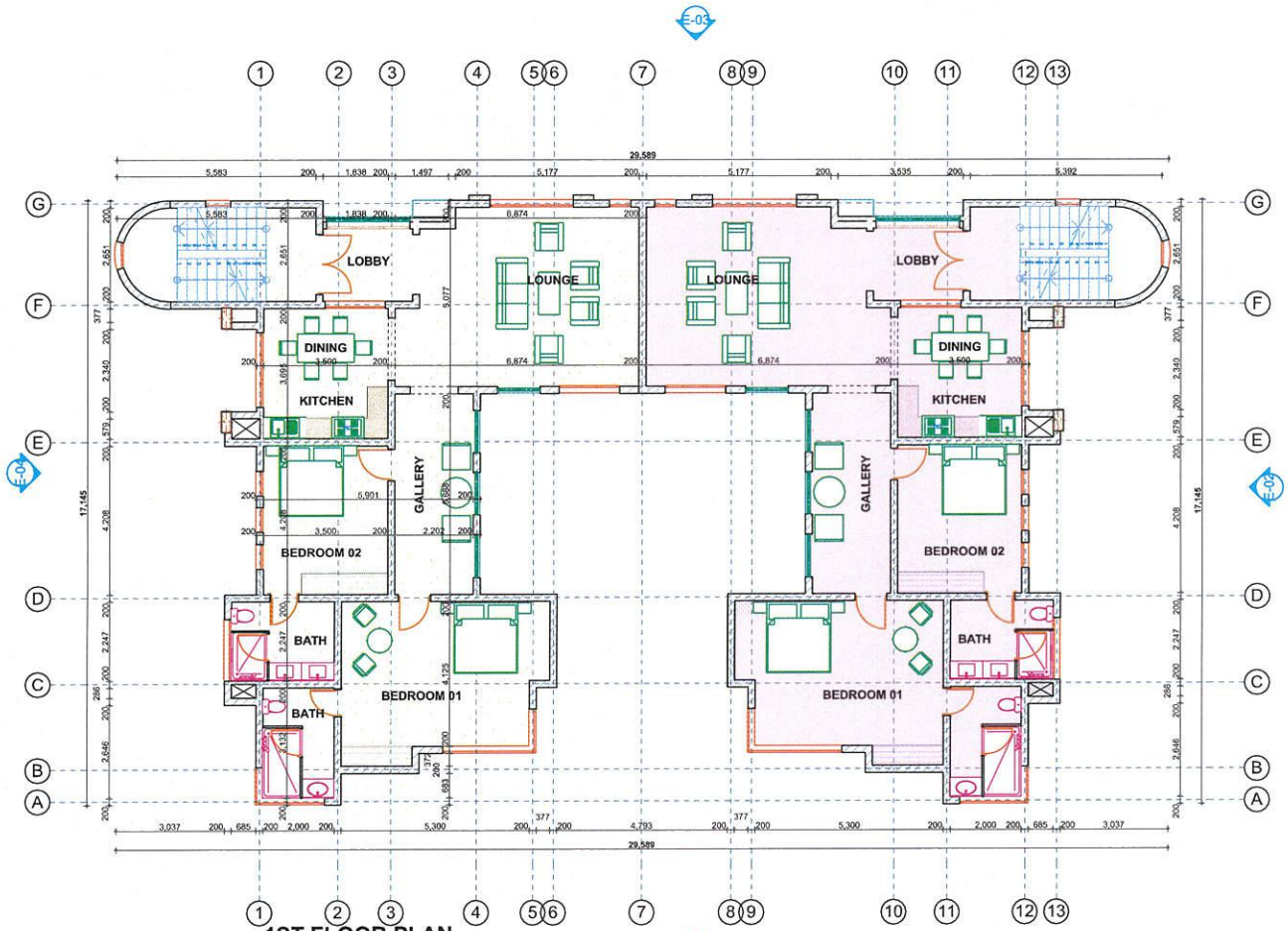

1ST FLOOR PLAN

2No. 2 Bedroom Units

Floor Area = 270M^2

Apartment Typology B

Project Title	Architect's sign.	Notes	Scale		Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE		Summary = Ground Floor Area = 300M^2 1st Floor Area = 270M^2 2nd Floor Area = 270M^2 **Gross floor Area = 840M^2**	1:20		FLOOR PLAN
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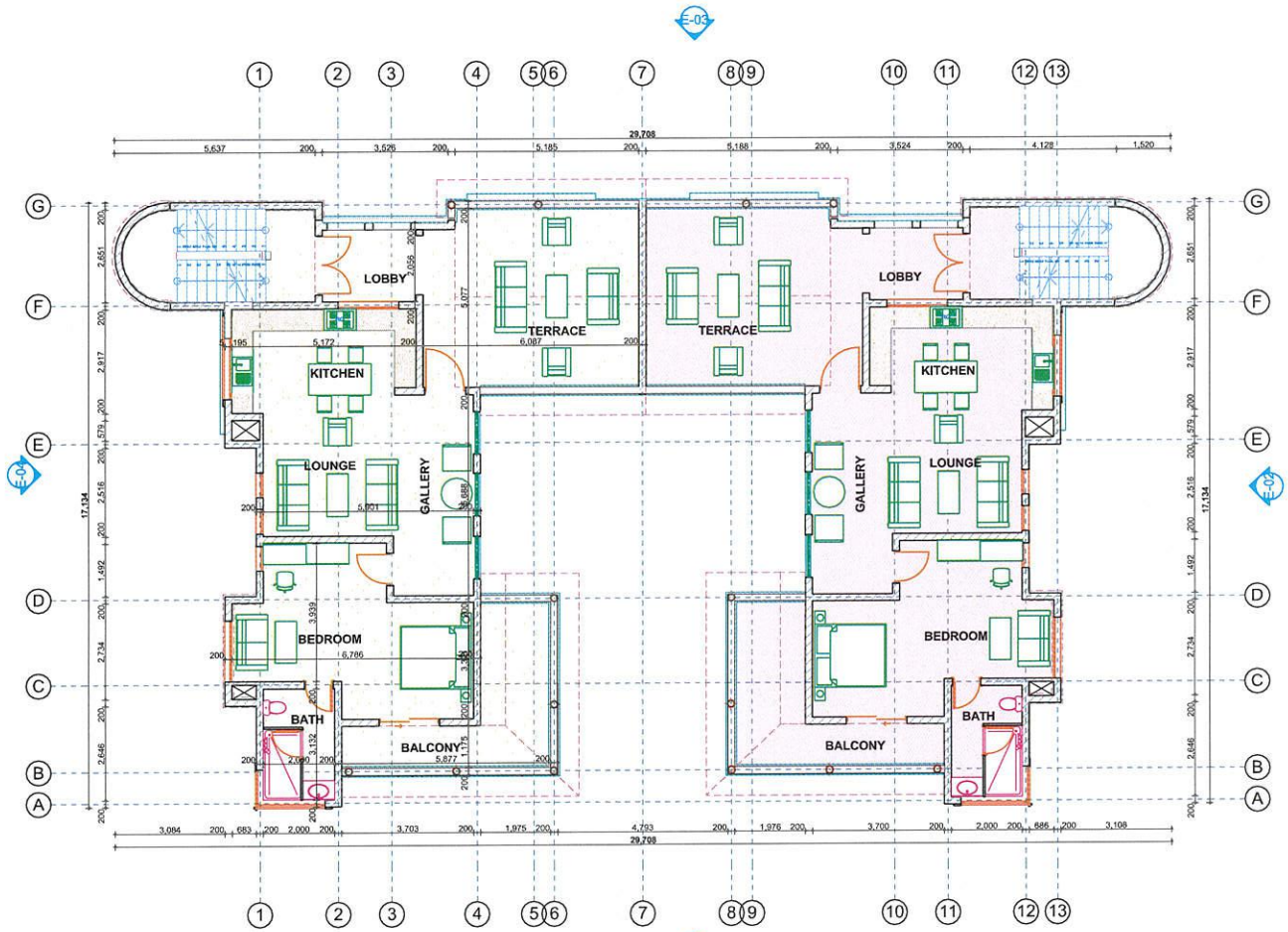

2ND FLOOR PLAN

2No. 1 Bedroom Unit

Floor Area = 270M²

Apartment Typology B

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE		Summary = Ground Floor Area = 300M² 1st Floor Area = 270M² 2nd Floor Area = 270M² **Gross floor Area = 840M²**	1:20	FLOOR PLAN
			Date	Drawing No.
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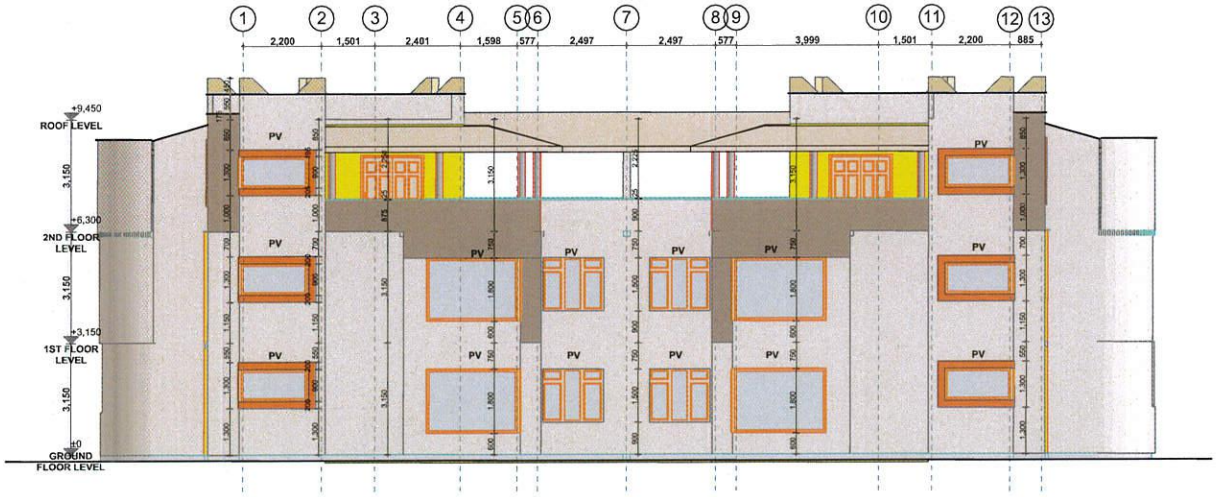
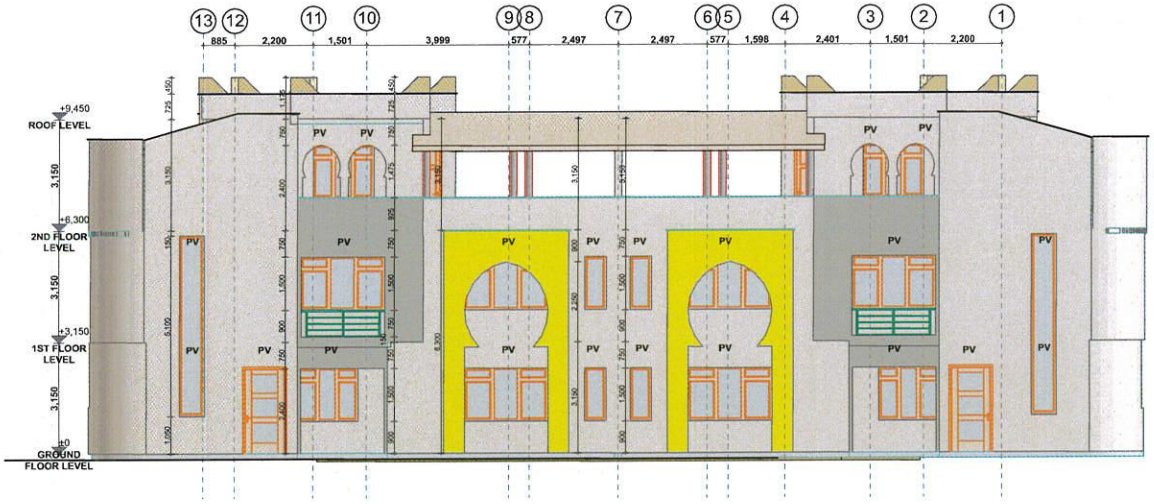
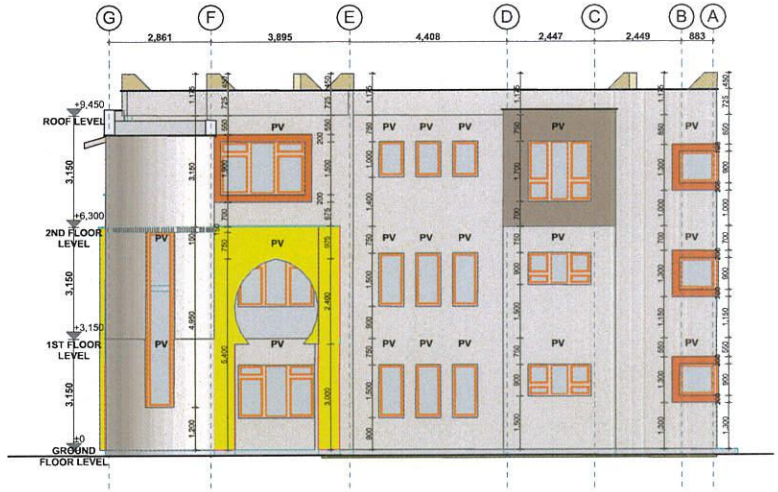


ELEVATION - 01

ELEVATION - 02



ELEVATION - 03



ELEVATION - 04

TYPICAL ELEVATIONS
Apartment Typology A & B

Project Title	Architect's sign.	Notes	Scale	Drawing Title
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			Date	Drawing No.
Client	Client's sign.		16/05/2023	**L[--]04**
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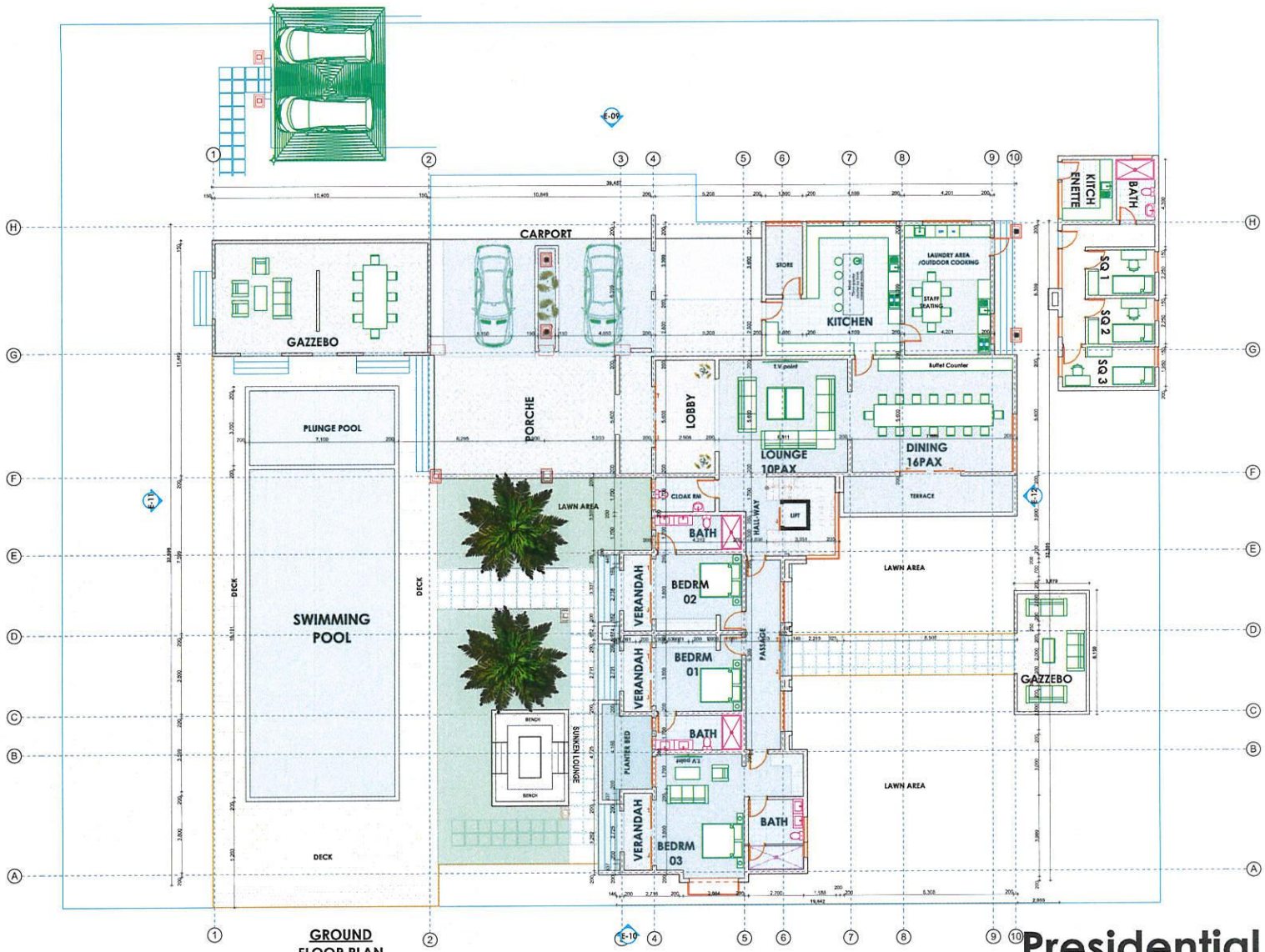
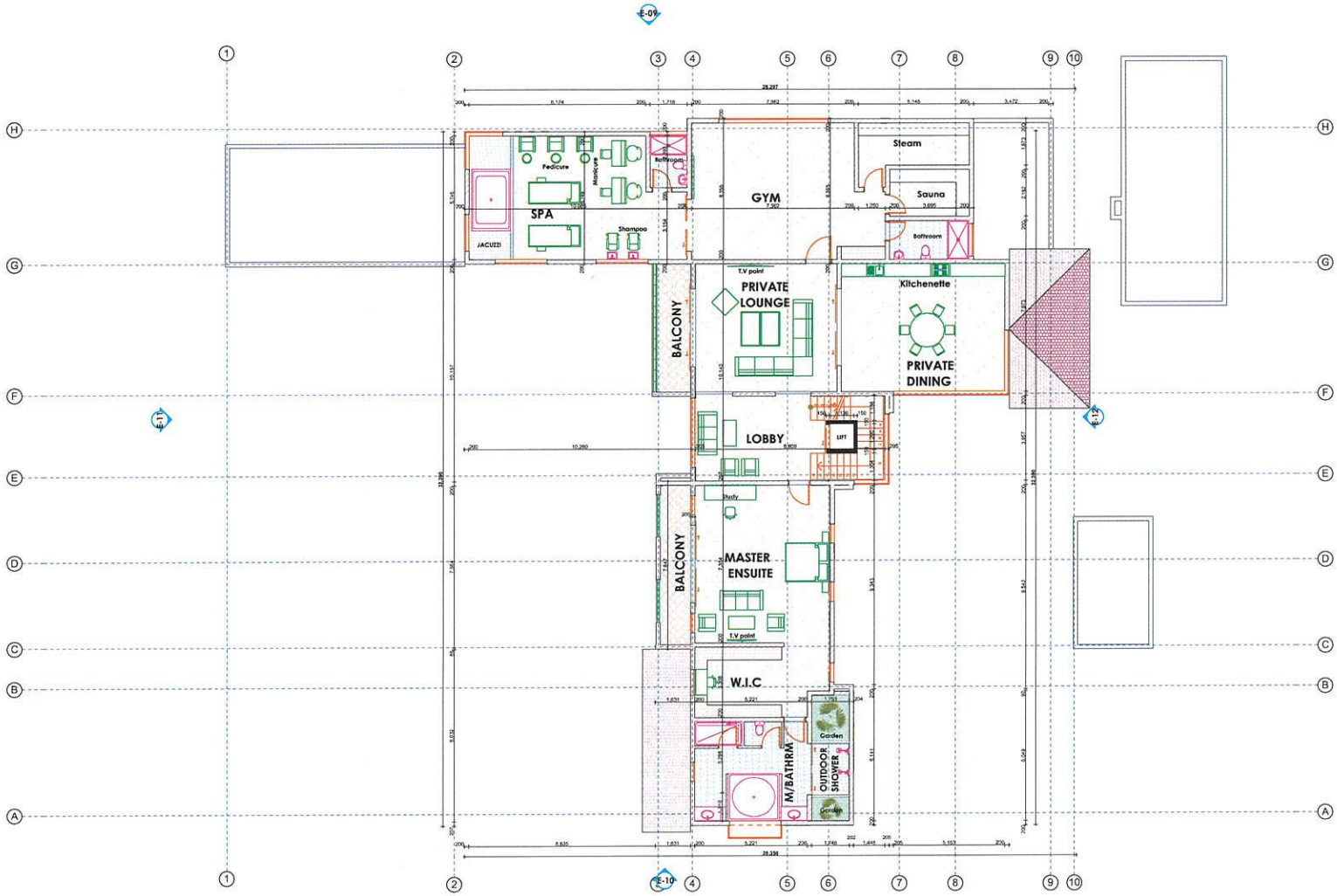


GROUND FLOOR PLAN

AREA = 500 + 432 = **932msq**

Presidential Villa

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE			1:20	FLOOR PLAN
			Date	Drawing No.
Client	Client's sign.		03/05/2023	L[--]07
			Drawn by / Checked	Revision No.
			B.K / K.A	01



FIRST FLOOR PLAN

AREA = 432mmsq

Presidential Villa

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE			1:20	FLOOR PLAN
			Date	Drawing No.
Client	Client's sign.		03/05/2023	**L[--]08**
			Drawn by / Checked	Revision No.
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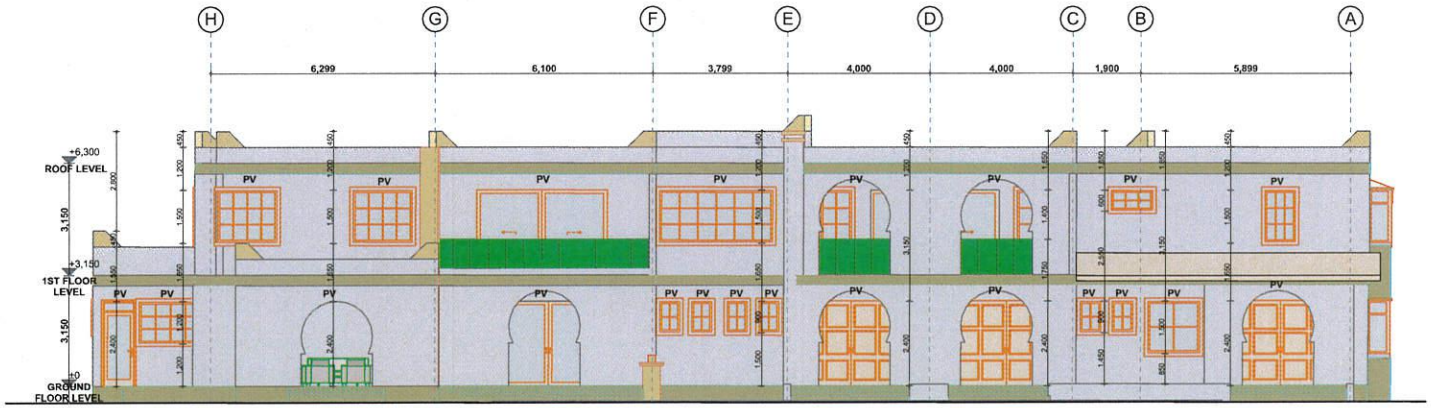
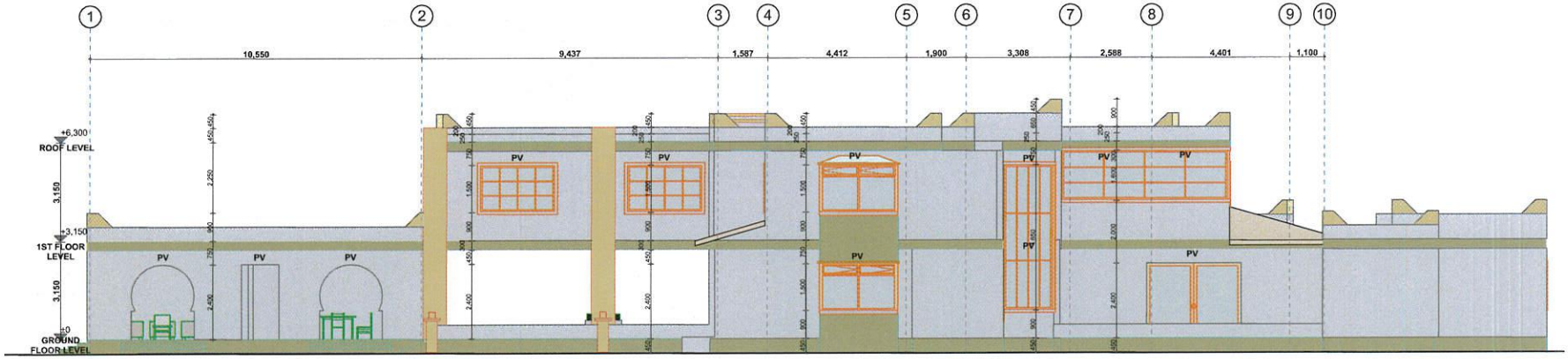


ELEVATION - 09



ELEVATION - 10

Presidential Villa

Project Title	Architect's sign.	Notes	Scale		Drawing Title
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			Date		Drawing No.
Client	Client's sign.		16/05/2023		L[--]07
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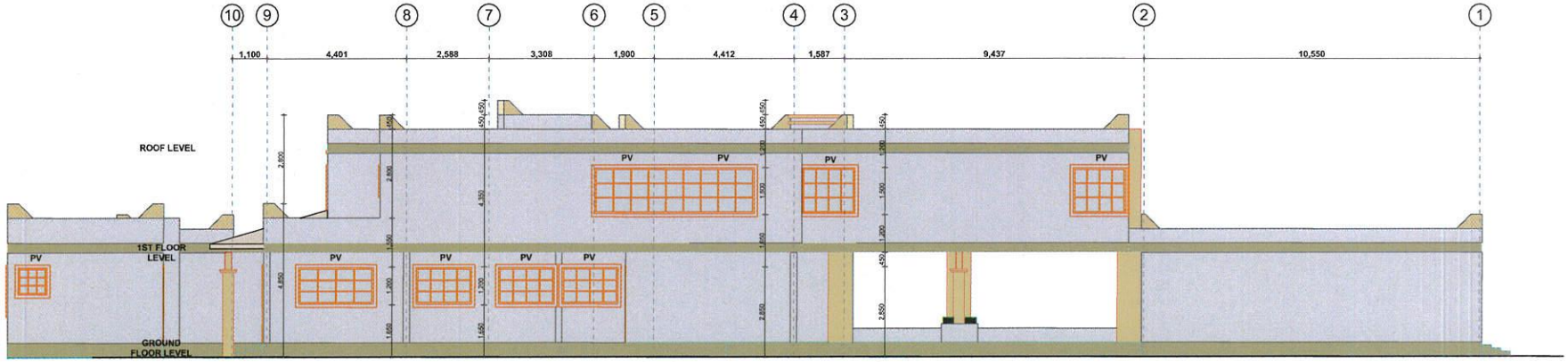
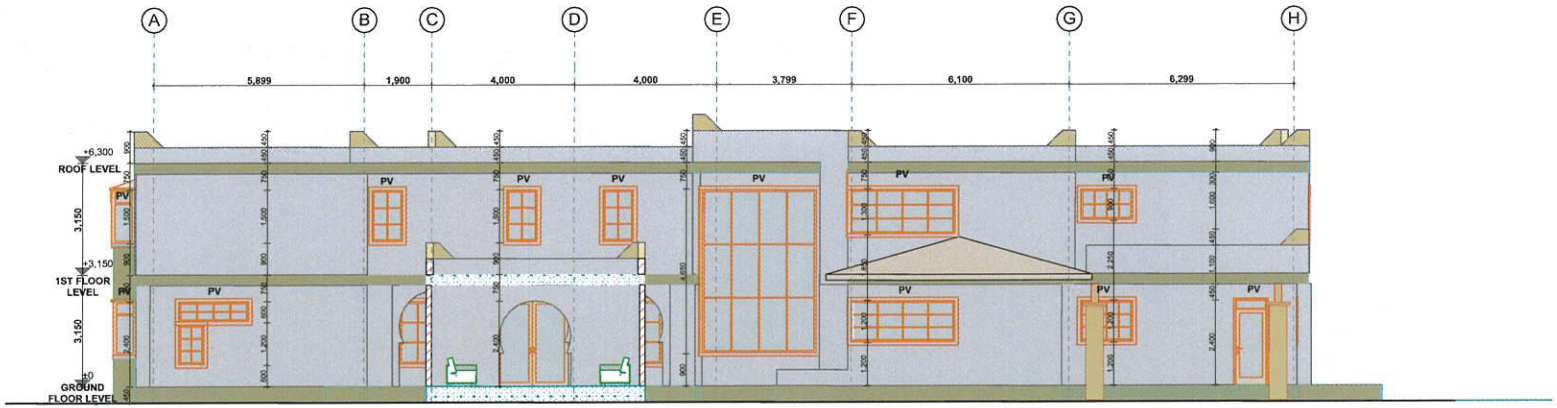


ELEVATION - 11



ELEVATION - 12

Presidential Villa

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE			1:20	FLOOR PLAN
			Date	Drawing No.
Client	Client's sign.		16/05/2023	L[--]07
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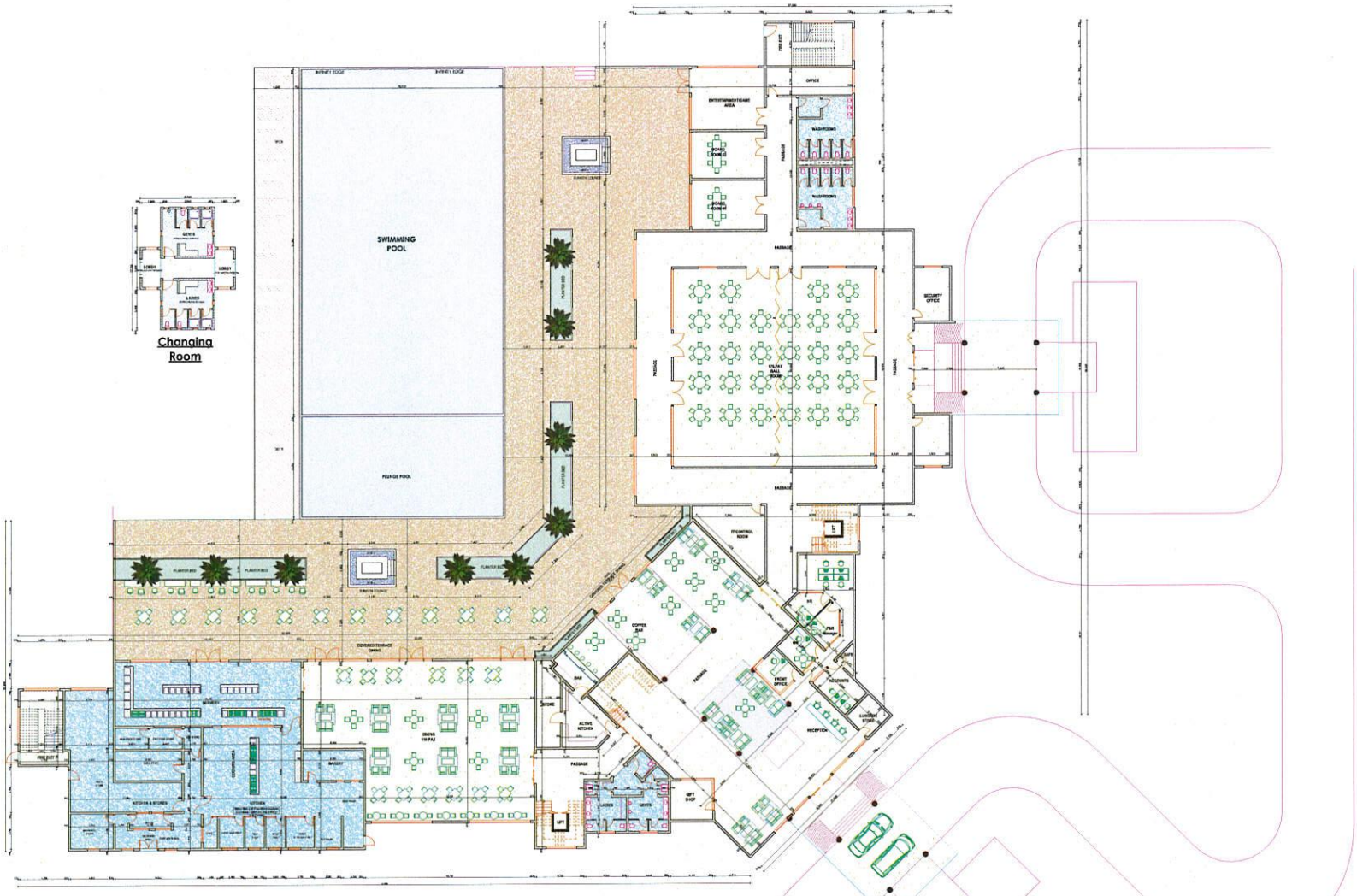

GROUND FLOOR PLAN
AREA = 3,125 + 2,996 + 2,751 = 8,872sqm

Hotel & Conference Hall

Project Title	Architect's sign.	Notes	Scale		Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE			1:20		FLOOR PLAN
			Date		Drawing No.
Client	Client's sign.		03/05/2023		L[--]09
			Drawn by	Checked	Revision No.
			B.K	K.A	01

FIRST FLOOR PLAN
AREA = 2.996sqm

Hotel & Conference Hall

Project Title	Architect's sign.	Notes	Scale	Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE			1:20	FLOOR PLAN
			Date	Drawing No.
Client	Client's sign.		03/05/2023	L[--]10
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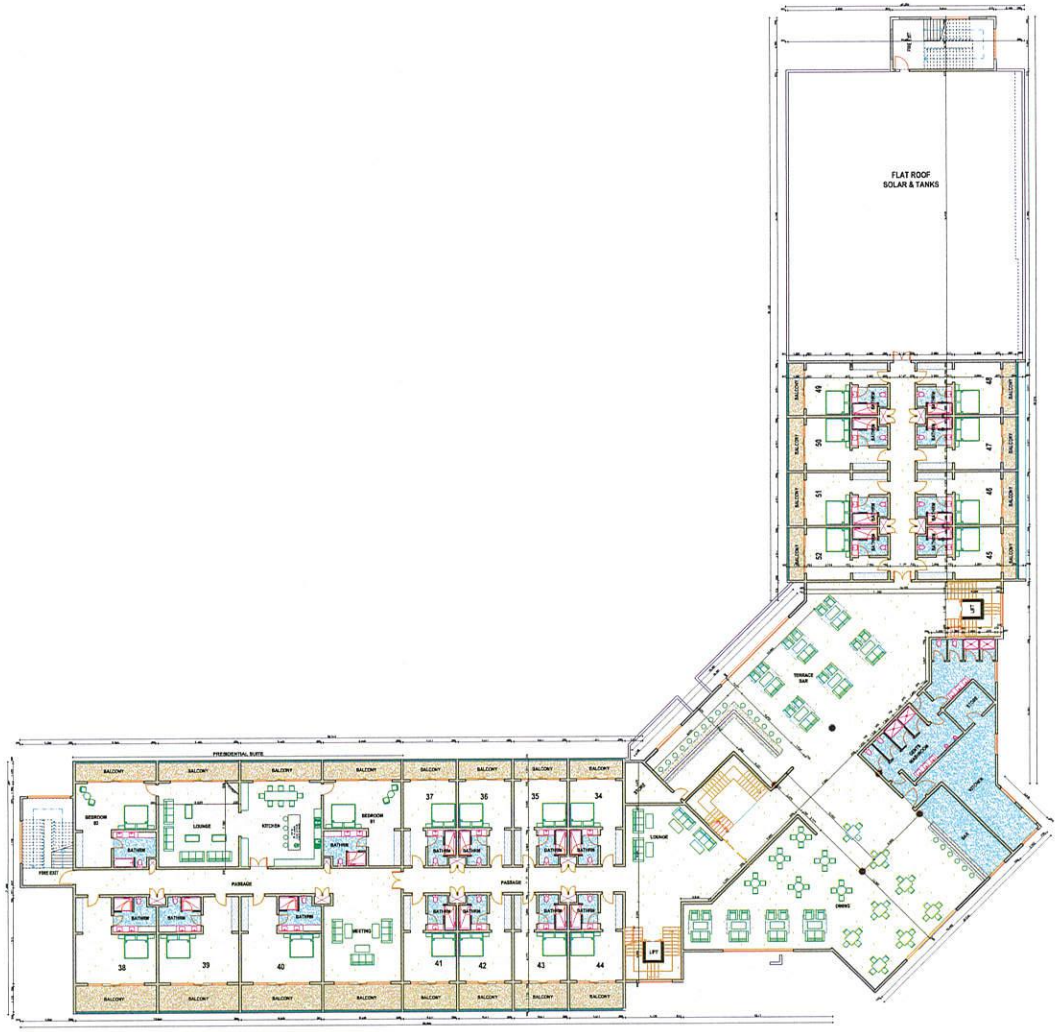

SECOND FLOOR PLAN
AREA = 2,751sqm

Hotel & Conference Hall

Project Title	Architect's sign.	Notes	Scale		Drawing Title
PROPOSED HOTEL DEVELOPMENT IN CHEMBE			1:20		FLOOR PLAN
			Date		Drawing No.
Client	Client's sign.		03/05/2023		L[--]11
			Drawn by	Checked	Revision No.
			B.K	K.A	01

ENVASSES
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CONSULTANTS
LIMITED

Ralli House Building, Nyerere Avenue, P.O. Box 2013-80100, Mombasa
Tel: +254722347155; Email: info@envasses.org; website www.envasses.org

23rd June 2023

Our Ref: EIA/KEL/06/2023

PUBLIC CONSULTATIONS QUESTIONNAIRE

Dear Neighbor,

RE: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) STUDY REPORT FOR THE PROPOSED HOTEL DEVELOPMENT ON PLOT L.R. NO. CHEMBE/KIBABAMSHE/327 IN MAYUNGU, KILIFI COUNTY.

We have been contracted by Kango Enterprises Limited to prepare an Environmental Impact Assessment (EIA) Study Report for the Proposed Hotel Development on Plot L.R. No. Chembe/Kibabamshe/327 in Mayungu, Kilifi County. The project scope will involve the construction of two-storey hotel and conference block, 6 blocks that will comprise of 1-bedroom units, 2-bedroom units and 3-bedrooms unit apartments, one presidential villa and 6 blocks of 3-bedroom villas occupying a total of 17,192m^2. Other social amenities will include, jetty, swimming pools, gym, steam and sauna, jaccuzi, service yard and guest parking space.

The EIA study process is carried out pursuant to Section 58 of the Environmental Management and Coordination Act Cap. 387 of the Laws of Kenya and the Environmental Management and Coordination (Impact Assessment and Audit) Regulations, 2003. As part of data and information collection tools during the assessment, we have prepared a questionnaire targeting neighbors and key stakeholders of the proposed project. The purpose of this letter is therefore to request for your participation in the assessment process by completing the attached questionnaire.

Please note that your response to the questionnaire is expected within 7 days after receipt.

Yours sincerely,

ENVASSES ENVIRONMENTAL CONSULTANTS LTD
Tel:0722 347 155
23 JUN 2023
Email: info@envasses.org
P.O. Box 2013 MOMBASA

Mr. Simon Nzuki
Chief Executive Officer and Lead Consultant

This letter is to be acknowledged to confirm that the neighbor has received it and the questionnaire

About the questionnaire

This questionnaire has four parts. Part I and II provide details of the interviewer and the respondent's profile. Part III –IV seeks baseline information from the stakeholders who are likely to be affected by the proposed project. Kindly fill part II-IV and seek clarifications where necessary from the interviewer or from the lead consultant on 0722 347 155 or email: info@envasses.org

Part I: Interviewer Profile	
Name of interviewer	Faidah Khamalishi
Position/Title	Environmental Assistant
Date	28/06/2023
Signature	

Part II: Respondent's Profile	
Name of the respondent	Haji Ismael
Gender (Male, Female, N/A for companies)	Male
Position of respondent for business	
Occupation/type of business	Fisherman
Approximate distance from site	
Period of residency in the area (<5, >5years)	>10 years
Telephone contact	—
ID No. or Registration No. for businesses	—
Signature	

Part III: Knowledge of the proposed site and existing environmental concerns	
a) Do you know the proposed project site?	Yes ☑ NO ☐ (If No, the interviewer to show the respondent the proposed project site)
b) If yes, do you have any specific environmental and social concerns regarding the project site historically?	(List them)

Part IV: Objections and impact of the proposed project on the stakeholder	
a) Do you have any objection to the proposed Villas development?	**YES** ☐ **NO** ☑ If Yes, give reason(s)
b) Are there any positive environmental and social impacts that you anticipate from the proposed hotel development? Enhance security	**YES** ☑ **NO** ☐ If Yes, list them

c) Are there any negative environmental and social impacts that you anticipate from the proposed hotel development?	YES ☐ NO ☑ If Yes, list them and the corresponding mitigation measures in the column below
List of negative environmental and social impacts of the proposed project?	**Proposed mitigation measures**
	The Passage to the ocean should not be closed

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23 JUN 2023
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Part I: Interviewer Profile	
Name of interviewer	Muriuki Willy
Position/Title	Environmental Ass.
Date	23/06/23
Signature	

Part II: Respondent's Profile	
Name of the respondent	Mariana Muthoni
Gender (Male, Female, N/A for companies)	F
Position of respondent for business	
Occupation/type of business	
Approximate distance from site	100 m
Period of residency in the area (<5, >5years)	>5 yrs
Telephone contact	0745651387
ID No. or Registration No. for businesses	
Signature	Mmuturi

Part III: Knowledge of the proposed site and existing environmental concerns	
a) Do you know the proposed project site?	Yes ☑ NO ☐ (If No, the interviewer to show the respondent the proposed project site)
b) If yes, do you have any specific environmental and social concerns regarding the project site historically?	(List them)

Part IV: Objections and impact of the proposed project on the stakeholder	
a) Do you have any objection to the proposed Villas development?	**YES** ☐ **NO** ☑ If Yes, give reason(s)
b) Are there any positive environmental and social impacts that you anticipate from the proposed hotel development?	**YES** ☑ **NO** ☐ If Yes, list them - Source of employment - Work on crops

c) Are there any negative environmental and social impacts that you anticipate from the proposed hotel development?	YES ✓ NO ☐ If Yes, list them and the corresponding mitigation measures in the column below
List of negative environmental and social impacts of the proposed project?	**Proposed mitigation measures**
Check on the boundaries of the construction. The Premises construction ~~ties~~ invades public access towards accessing the beach	

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23rd June 2023

Our Ref: EIA/KEL/06/2023

PUBLIC CONSULTATIONS QUESTIONNAIRE

Dear Neighbor,

RE: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) STUDY REPORT FOR THE PROPOSED HOTEL DEVELOPMENT ON PLOT L.R. NO. CHEMBE/KIBABAMSHE/327 IN MAYUNGU, KILIFI COUNTY.

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ENVASSES ENVIRONMENTAL CONSULTANTS LTD
Tel:0722 347 155
23 JUN 2023
Email: info@envasses.org
P.O. Box 2013-80100, MOMBASA

Mr. Simon Nzuki
Chief Executive Officer and Lead Consultant

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Part I: Interviewer Profile	
Name of interviewer	Faidah Khamalichi
Position/Title	Environmental Assistant
Date	23/06/2023
Signature	

Part II: Respondent's Profile	
Name of the respondent	Furaha Kizito
Gender (Male, Female, N/A for companies)	Female
Position of respondent for business	
Occupation/type of business	
Approximate distance from site	>50m
Period of residency in the area (<5, >5years)	>10 years
Telephone contact	—
ID No. or Registration No. for businesses	—
Signature	

Part III: Knowledge of the proposed site and existing environmental concerns	
a) Do you know the proposed project site?	Yes ☑ NO ☐ (If No, the interviewer to show the respondent the proposed project site)
b) If yes, do you have any specific environmental and social concerns regarding the project site historically?	(List them)

Part IV: Objections and impact of the proposed project on the stakeholder	
a) Do you have any objection to the proposed Villas development?	**YES** ☐ **NO** ☑ If Yes, give reason(s)
b) Are there any positive environmental and social impacts that you anticipate from the proposed hotel development?	**YES** ☐ **NO** ☑ If Yes, list them

c) Are there any negative environmental and social impacts that you anticipate from the proposed hotel development?	YES ☐ NO ☑ If Yes, list them and the corresponding mitigation measures in the column below
List of negative environmental and social impacts of the proposed project?	**Proposed mitigation measures**

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23rd June 2023

Our Ref: EIA/KEL/06/2023

PUBLIC CONSULTATIONS QUESTIONNAIRE

Dear Neighbor,

RE: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) STUDY REPORT FOR THE PROPOSED HOTEL DEVELOPMENT ON PLOT L.R. NO. CHEMBE/KIBABAMSHE/327 IN MAYUNGU, KILIFI COUNTY.

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Yours sincerely,

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Tel:0722 347 155
23 JUN 2023
Email: info@envasses.org
P.O. Box 2013-80100, MOMBASA

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Part I: Interviewer Profile	
Name of interviewer	
Position/Title	
Date	
Signature	

Part II: Respondent's Profile	
Name of the respondent	Yusuf Khalid
Gender (Male, Female, N/A for companies)	M
Position of respondent for business	
Occupation/type of business	
Approximate distance from site	
Period of residency in the area (<5, >5years)	
Telephone contact	0796454312
ID No. or Registration No. for businesses	
Signature	

Part III: Knowledge of the proposed site and existing environmental concerns	
a) Do you know the proposed project site?	Yes ☑ NO ☐ (If No, the interviewer to show the respondent the proposed project site)
b) If yes, do you have any specific environmental and social concerns regarding the project site historically?	(List them)

Part IV: Objections and impact of the proposed project on the stakeholder	
a) Do you have any objection to the proposed Villas development?	YES ☐ NO ☑ If Yes, give reason(s)
b) Are there any positive environmental and social impacts that you anticipate from the proposed hotel development?	YES ☑ NO ☐ If Yes, list them - Source of employment. Source labour within the community. - Source material for construction from locals.

c) Are there any negative environmental and social impacts that you anticipate from the proposed hotel development?	YES ✓ NO ☐ If Yes, list them and the corresponding mitigation measures in the column below
List of negative environmental and social impacts of the proposed project?	**Proposed mitigation measures**
Dust emanating from the facility from excavation. Noise pollution from machinery in the facility - Check on machinery that is to be used on site. - Check on the wages provided to the workers.	

ENVASSES ENVIRONMENTAL CONSULTANTS LIMITED

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23rd June 2023

Our Ref: EIA/KEL/06/2023

PUBLIC CONSULTATIONS QUESTIONNAIRE

Dear Neighbor,

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23 JUN 2023
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Part I: Interviewer Profile	
Name of interviewer	JOY ALLE NYAGIA
Position/Title	ENVIRONMENTAL ASSISTANT
Date	23RD JUNE 2023
Signature	

Part II: Respondent's Profile	
Name of the respondent	Emmanuel Chengo
Gender (Male, Female, N/A for companies)	Male
Position of respondent for business	—
Occupation/type of business	—
Approximate distance from site	200 meters
Period of residency in the area (<5, >5years)	>5 years
Telephone contact	0114256309
ID No. or Registration No. for businesses	—
Signature	

Part III: Knowledge of the proposed site and existing environmental concerns	
a) Do you know the proposed project site?	Yes ☑ NO ☐ (If No, the interviewer to show the respondent the proposed project site)
b) If yes, do you have any specific environmental and social concerns regarding the project site historically?	(List them)

Part IV: Objections and impact of the proposed project on the stakeholder	
a) Do you have any objection to the proposed Villas development?	**YES** ☐ **NO** ☑ If Yes, give reason(s)
b) Are there any positive environmental and social impacts that you anticipate from the proposed hotel development? Provision of employment opportunities to youths during construction and operational phase	**YES** ☑ **NO** ☐ If Yes, list them

c) Are there any negative environmental and social impacts that you anticipate from the proposed hotel development?	YES ☐ NO ☑ If Yes, list them and the corresponding mitigation measures in the column below
List of negative environmental and social impacts of the proposed project?	**Proposed mitigation measures**

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Part I: Interviewer Profile	
Name of interviewer	Faidah Khamalishi
Position/Title	Environmental Assistant
Date	23/06/2023
Signature	

Part II: Respondent's Profile	
Name of the respondent	Kahindi Kazungu
Gender (Male, Female, N/A for companies)	Female
Position of respondent for business	Owner
Occupation/type of business	
Approximate distance from site	>50m
Period of residency in the area (<5, >5years)	10 years
Telephone contact	07
ID No. or Registration No. for businesses	—
Signature	

Part III: Knowledge of the proposed site and existing environmental concerns	
a) Do you know the proposed project site?	Yes ☑ NO ☐ (If No, the interviewer to show the respondent the proposed project site)
b) If yes, do you have any specific environmental and social concerns regarding the project site historically?	(List them) N/A

Part IV: Objections and impact of the proposed project on the stakeholder	
a) Do you have any objection to the proposed Villas development?	**YES** ☐ **NO** ☑ If Yes, give reason(s)
b) Are there any positive environmental and social impacts that you anticipate from the proposed hotel development? Employment	**YES** ☑ **NO** ☐ If Yes, list them

c) Are there any negative environmental and social impacts that you anticipate from the proposed hotel development?	YES ☐ NO ☑ If Yes, list them and the corresponding mitigation measures in the column below
List of negative environmental and social impacts of the proposed project?	**Proposed mitigation measures**

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Part I: Interviewer Profile	
Name of interviewer	Muriuki Willy
Position/Title	Environmental Ass
Date	23/06/23
Signature	

Part II: Respondent's Profile	
Name of the respondent	Halima Njeri
Gender (Male, Female, N/A for companies)	F
Position of respondent for business	
Occupation/type of business	
Approximate distance from site	100m
Period of residency in the area (<5, >5years)	75yrs
Telephone contact	0718293779
ID No. or Registration No. for businesses	
Signature	

Part III: Knowledge of the proposed site and existing environmental concerns	
a) Do you know the proposed project site?	Yes ☑ NO ☐ (If No, the interviewer to show the respondent the proposed project site)
b) If yes, do you have any specific environmental and social concerns regarding the project site historically?	(List them)

Part IV: Objections and impact of the proposed project on the stakeholder	
a) Do you have any objection to the proposed Villas development?	**YES** ☐ **NO** ☑ If Yes, give reason(s)
b) Are there any positive environmental and social impacts that you anticipate from the proposed hotel development?	**YES** ☐ **NO** ☑ If Yes, list them

c) Are there any negative environmental and social impacts that you anticipate from the proposed hotel development?	YES ✓ NO ☐ If Yes, list them and the corresponding mitigation measures in the column below
List of negative environmental and social impacts of the proposed project?	**Proposed mitigation measures**

FORM 7

nema

mazingira yetu | uhai wetu | wajibu wetu

(r.15(2))

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

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

License No : NEMA/EIA/ERPL/18513

Application Reference No: NEMA/EIA/EL/24308

M/S **Envasses Environmental Consultants Ltd**
(individual or firm) of address
P.O. Box 2013 - 80100 Mombasa

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts** registration number **6175**

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

Issued Date: 1/12/2023 Expiry Date: 12/31/2023

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001:2015 Certified

FORM 7

nema

mazingira yetu | uhai wetu | wajibu wetu

(r.15(2))

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

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

License No : NEMA/EIA/ERPL/18514

Application Reference No: NEMA/EIA/EL/24309

M/S **Simon Kioko Nzuki**
(individual or firm) of address
P.O. Box 2013 - 80100 Mombasa

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

registration number **1350**

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

Issued Date: 1/12/2023

Expiry Date: 12/31/2023

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001:2015 Certified