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**PROJECT TITLE: PROPOSED HOTEL DEVELOPMENT OF EIGHT STOREYS CARRYING THREE RESTAURANTS, 14 3-BEDROOM APARTMENTS AND 14 2-BEDROOM APARTMENTS AND OTHER HOTEL FACILITIES OF THABITI CAPITAL LIMITED OF P.O. BOX 2237-00200 NAIROBI**

**LOCATION: PLOT LR No. MN/1/5708 IN NYALI EASTATE IN MOMBASA COUNTY**

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT PROJECT STUDY REPORT**

**DECEMBER 2021**

**CONSULTANCY FIRM: LING INTERNATIONAL:**

**REG. NO.2233**

**LEAD EXPERT: KANDAU MANG'URIO:**

**REG. NO. 1780**



**PROPOSED HOTEL DEVELOPMENT OF FOURTEEN STOREYS  
CARRYING THREE RESTAURANTS, 14 3-BEDROOM  
APARTMENTS AND 14 2-BEDROOM APARTMENTS AND OTHER  
HOTEL FACILITIES**

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT PROJECT  
STUDY REPORT**

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### ACRONYMS AND ABBREVIATIONS

GoK	Government of Kenya
TCL	Thabiti Capital Limited
NEMA	National Environmental Management Authority
MoPH	Ministry of Public Health
NSSF	National social security fund
Covid-19	Corona virus disease
EMCA	Environmental Management coordination Act
NCA	National Construction Authority
EMP	Environmental Management Plan
DOSHS	Directorate of occupational safety and health services
PPE	Personal Protective Equipment
OHS	Occupational Health & Safety
SHE	Safety, Health & Environment
ESIA	Environmental and Social Impact Assessment
EIA	Environmental Impact Assessment
EA	Environmental Audit
CPP	Consultation and Public Participation
ID	Identity Card
GRM	Grievances Redress Mechanism
ICZM	Integrated Coastal Zone Management
KFS	Kenya Forest Service
TOR	Terms of reference
WRA	Water Resource Authority
ISUD	Integrated Strategic Urban Development
MITCZ	Migratory Inter-Tropical Convergence Zone
mm	millimeters

Km	Kilometer
KWS	Kenya wildlife services
ASL	Above Sea Level

## **EXECUTIVE SUMMARY**

Thabiti Capital Limited is a registered limited company by the registrar of societies of the republic of Kenya. It was registered in January 2017. The proponent does businesses across the country mainly in real estate among other investments. The proponent owns a plot land reference number MN/1/5708 Mombasa that measures 0.4008 hectares in the prestigious Nyali area along the Indian ocean shoreline. The proponent intends to invest in a modern and coastal hotel mainly targeting the tourists who frequent the coastal region. The Mombasa County ISUD plan 2035 indicates that tourism in Kenya is one of the leading economic sectors and one of the major employment source accounting to about 4-11% of the total employment in Kenya. The proponent intends to build a modern hotel carrying a conference hall, a lobby, two meeting rooms, laundry, a restaurant, administration offices, a jetty, 14 2-bedroom apartments and 14 3-bedroom apartments, 3 social amenities for communal living as per the architectural drawings provided. Other beach hotels and apartments in Nyali includes Ocean view Nyali Boutique hotel, Ayodya suites, Plus 2 bedroom Shree apartment, Nyali Oceanic view apartment, Nyali beach holiday resort among others. The proposed project site is located about 15 Km from Mombasa central business district. It will be among other beach hotels along the shoreline. During the site visit it was noticed that there are many offshore apartments in the area and others coming up as can be seen from the attached photos.

Since the enactment of Environmental Management Coordination Act, No 8 of 1999, (which was amended in 2015) it is a legal requirement that such a project be subjected to Environmental and social Impact Assessment (ESIA) study to identify and mitigate the anticipated environmental impacts in order to protect and conserve the environment. It is due to the desire and respect for the rule of the law that that the proponent has invited Ling International under Kandau Mang'urio who is a Lead Expert to carry out the ESIA for compliance. The ESIA process has been carried out and all the environmental concerns addressed as will be seen in the Environmental and Social Management Plan (ESMP). The area is already inhabited and moderately populated and there no major natural resources that would be affected by the development as can be seen from the photos taken and the few ones which have been identified have been addressed adequately and appropriate recommendations made in this study report.

The steps which were followed during the ESIA process includes environmental screening to see whether the project needed to be subjected to ESIA, environmental scoping and developing TOR which provides key environmental concerns, Consultation and public participation (CPP) through interviewing the neighbours and other stakeholders.

The assessment covered all the phases of the development namely site preparation, construction phase, operational phase and decommissioning phase of the project. The project, on completion and subsequent occupation, will generate waste (both liquid and solid) and it has been addressed adequately under waste management later in the report. The proponent is fully committed to sound environmental management and full compliance for the relevant statutory and regulatory requirements as well as the wishes of the public as was witnessed during discussions with him

### **1.0 BASELINE INFORMATION MOMBASA COUNTY THAT CARRIES NYALI ESTATE WHERE THE PROPOSED PROJECT SITE IS LOCATED**

Nyali estate is located about 15km from the Mombasa city center. The area is a mixed development area as can be seen from the photos attached. The area has rapidly grown as the demand for more beach hotels and apartments for tourists increases in the coastal region and other areas in the country. The people who live here are middle class and high class who are mainly investors and business people. They employ workers from other areas such as Mtwapa, Bamburi, Mshomoroni and Lights among other areas. There are also big and small businesses like supermarkets, car wash, groceries, small hotels, poultry keeping to some extent, construction, medical centres, bars, wines and spirits shops, ordinary shops, salons among others. It is located on the following coordinates: Latitude-4<sup>0</sup> 01' 19.7472''S and Longitude-39<sup>0</sup> 43' 40.6704''E (Degrees Minutes, Seconds) and -4.0221525 and 39.7279634 (Decimal Degrees) and it approximately 50m (160 feet) above the sea level

### **TOPOGRAPHY AND CLIMATE OF MOMBASA**

Situated at a very altitude, Mombasa has a warm climate. It is coastal lowland that is generally flat rising from the sea level in the East to about 132m above sea level in the mainland. The temperatures in Mombasa are fairly constant ranging from 23 to 28 degrees centigrade. November and April are the warmest months having recorded temperatures of 27 degrees centigrade on average while May to October are the cooler months recording an average temperature of about 24 degrees centigrade. The climate is influenced majorly by the Migratory Inter-Tropical Convergence Zone characterized by monsoon winds that create a bimodal rainfall pattern.



## **AVERAGE RAINFALL**

The long rains occur in the months April to July while the short rains are in the months of October to December and the average annual rainfall is 1196mm.

## **GEOLOGY OF MOMBASA AND NEIGHBOURING KWALE COUNTY**

The rocks of this area are largely of sedimentary origin and range in age from Permian (or possibly Upper Carboniferous) to Recent. Three well-marked divisions can be recognized: The Cainozoic rocks, The Upper Mesozoic rocks and The Duruma Sandstone Series. The Duruma Sandstone Series, which is the Kenya correlative of the Karroo System of South and central Africa, consists of grits, sandstones and shales that have yielded Permian and Triassic fossils, although it is possible that the series ranges downwards to the Upper Carboniferous and upwards to the Lower Jurassic. The series is readily divisible into three broad lithological units with coarse sandstones and grits at the top and bottom of the succession, and finer sandstones and shales in the middle. For the most part the beds were deposited under lacustrine or sub-aerial conditions, the material having been derived from the Basement System rocks further to the west. A marine intercalation in the lower part of the succession is known from evidence obtained in a deep borehole drilled near Maji-ya-Chumvi (Miller, 1952). The upper Mesozoic rocks consist of limestones and shales with occasional thin sandstones that range apparently without a break from the Bajocian to the Middle Kimmeridgian. Rocks of Neocomian age that appear to be down-faulted against the Kimmeridgian are also present. The upper Mesozoic rocks are all of marine origin. The Cainozoic rocks include a Pleistocene coral reef with its associated lagoonal deposits of coral breccia, calcareous sands and beach sands, and a thick series of terrestrial sands and gravels that are probably of Upper Pliocene age. The Duruma Sandstones and the Upper Mesozoic rocks have a regional dip of 5° to 10° to the east-south-east, whilst the Cainozoic rocks are generally flat-lying. The Upper Mesozoic rocks are stratigraphically unconformable upon the Duruma Sandstones but their contact is faulted throughout much of its length. The Cainozoic rocks rest unconformably upon an eroded surface of Mesozoic rocks with occasional overlap on to the Duruma Sandstones. An alkaline intrusion at Jombo Hill, where nepheline-syenites, ijolites and melteigites outcrop, and associated vent agglomerates and dykes are the only eruptive rocks of the area. The intrusions and volcanic activity associated with them have been referred to the Cretaceous or Tertiary (Gregory, 1921, p. 192).

### **THE DURUMA SANDSTONE SERIES**

The Duruma Sandstone Series was named by Stromer von Reichenbach (1896, p. 22). It covers the greater portion of the present area and is comprised of grits, sandstones and shales that seem, for the most part, to have been deposited under lacustrine, deltaic, and possibly neritic

conditions. Three broad lithological divisions are recognizable, with coarse sandstones and grits at the top and bottom of the succession and finer sandstones and shales in the middle:— (3) Upper—Mazeras Sandstone and Shimba Grit. (2) Middle—Mariakani Sandstones. Maji-ya-Chumvi Beds. (1) Lower—Tarn Grits. (1) The Lower Duruma Series (Taru Grits) The Taru grits outcrop in the north-western corner of the area and are best seen along the Kinango-Samburu road to the north of Vigurangani. They consist of massive grey or bluish-grey quartzo-felspathic grits with subordinate bands of hard black shale and attain a thickness of at least 450 ft. The grits are of coarse, variable texture, poorly sorted, and generally currentbedded. They are traversed by two sets of widely-spaced joints which cause them to weather into massive rectangular blocks, whose corners are then rounded by exfoliation. In some localities, such as to the west of Vigurangani, the weathering out of the jointplanes forms natural reservoirs that may be as much as a hundred feet long, six feet wide and several feet deep (Plate 2 (b)). The constituent grains are of variable size and are generally sub-angular. They consist primarily of quartz and microcline, with small proportions of sodic plagioclase, mica, hornblende and garnet, that are cemented together by calcite or, in some cases, quartz. With extensive weathering, the felspar breaks down and the rocks disintegrate to form a superficial covering of quartz sand. Specks of carbonaceous material are common throughout the succession and a block of coal was reported several years ago from a railway cutting near Tarn (Gregory, 1921, p. 53; Miller, 1952, p. 1). These have suggested the possible existence of coal seams within the series but none have as yet been found. The shale bands are rarely seen in surface exposures but their presence is known from borehole records (see Samburu borehole log—Maufe, 1908, p. 14). They have yielded indeterminable plant remains, and from similar beds along the Sabaki river Gregory (1921, p. 54) obtained fish scales and the fresh-water bivalve *Palaeonodonta fischeri* Amal. The genus *Palaeonodonta* ranges from the Devonian to the Permian but the species *P. fischeri* is known only from beds of upper Permian age, thus providing conclusive evidence on the age of the Lower Duruma Series, or at least a part of it. ' Exposures are generally poor but the regional dip appears to be in an east-southeasterly direction at about 5°. The base of the series is not seen and its relationship to older rocks cannot be determined, but the recording by Parsons (1928, p. 66) of occasional well-rounded pebbles of Basement System gneiss in the grits suggests an unconformity. More recent work by Miller in the Mackinnon Road area, however, points to the boundary being faulted. It is clear that the materials comprising the grits were derived from the gneisses, and the angular nature and poor sorting of the grains indicates that they were deposited rapidly at a place not far distant from their source. Since the only fossils so far obtained are plant remains and fresh-water shells, it is concluded that sedimentation took place under lacustrine conditions. (2) The Middle Duruma Series (a) The Maji-ya-Chumvi Beds.—These beds, the most shaly of the Duruma Sandstone Series, overlie the Taru Grits, possibly with slight unconformity in parts although exposures are not sufficiently good to make this point certain. They consist of bluishblack, grey and greenish-

grey, gritty, often micaceous, shales with inter-bedded yellowish- white silty sandstones. The shales often weather to a brownish colour and, being more easily eroded than the sandstones, they allow the formation of broad valleys along their strike. The drainage pattern generally well illustrates the lithological variations of the 10 succession. The base of one fairly prominent escarpment, along the top of which runs the Mariakani-Kinango—Tanga road throughout much of its length, was taken as the boundary between the upper and lower divisions of the beds. It was an arbitrary arrangement but it seemed to be more consistent and more easily followed than the threefold division proposed by Parsons (1928, p. 68). It is evident from Miller's work on the core samples from a borehole near Maji—ya-Chumvi that subdivision based on the included fauna will ultimately be possible and already a threefold faunal sequence has been established:— — 3. Yellowsh-white calcareous siltstones and blue micaceous shales with *Estheria* (c. 2,600 ft.). 2. Blue shales containing marine fish remains (c. 70 ft.), 1. Bluish-black gritty shales and muddy sandstones with plant remains (0. 1,900 ft.). Stratigraphically, the *Estheria* beds correspond closely with the upper division referred to above. Shales of the lowermost division can be seen in roadside gullies near Banga, on the Kinango-Samburu road. They are bluish—black in colour, weathering to grey, and are very thinly bedded so that they can be readily split into slabs. Plant remains are to be found in these shales; they are generally poorly preserved and rarely identifiable but the writer has obtained 'a recognizable leaf impression of the conifer, *Voltzia*. The frequent occurrence of rain-prints and sun-cracks shows that these beds were periodically exposed above water-level, and other impressions, more rarely found, are possibly gas pits caused by the ascent of bubbles of gas during the compaction of the sediments. The various features indicate a continuation of the lacustral environment. The water had become shallower since Lower Duruma times and occasionally retreated to expose the freshly deposited muds that were then sun-dried and cracked. These retreats were probably caused by evaporation for the rocks often contain an appreciable percentage of precipitated salts, as is shown by the salinity of the water obtained from the beds, and in more obvious form by the thin film of salt covering the dry beds of the rivers following a heavy spell of rain. It is apparent that the Lower Maji-ya-Chumvi beds accumulated slowly in a semi-arid climate. The upper two divisions are characterized by sediments of a somewhat coarser grade. The advent of a new fauna containing marine fish indicates that a connection with another environment was established at this stage and it is of interest, to note that the fish furnish the only evidence, so far recorded, that marine horizons exist in the Duruma Sandstone Series. The rocks of the group are typically ripple-marked, current-bedded and well-jointed. Two sets of joints are always present and a third is often seen, their directions being: —E.N.E.-W.S.W., N.W.-S.E., and N.-S. They are regular, clean-cut and closely spaced, and aided by the laminar nature of the strata cause the beds to break down into rectangular, platy fragments that litter the surface. Differential weathering of these fragments occasionally causes them to assume a discoidal shape. Near the top of the series there occurs a pebble horizon that can be seen on

the Tanga road near Kinango. The pebbles are quartz and are well-rounded, attaining diameters of up to 30 mm. They are apparently of limited extent and probably represent the site of a former playa. The age of the uppermost division is shown to be Triassic by the presence of the branchiopod *Estherid mangaliensis* Jones, a specimen of which was obtained from near the Kinango-Mariakani road. This species is known from the Triassic rocks of India and also from the Série du Kwango (U. Trias) of the Belgian Congo (Furon, p. 273). Another species found by Maufe (1908, p. 12) was identified by Newton (Geol. Mag. 1915, p. 276) as allied to *E. grayi* Jones of Permian age. Maufe (op. cit., p. 12) also found plant remains at mile 38/10—11\* along the railway-line that were identified by Newell Arber as *Thuyites* and *Carpolites*. *Estheria* is characteristic of fresh, or more rarely brackish, water so that a return to a lacustrine environment is indicated. \*The figures 10—11 refer to the number of telegraph poles reading from the last mile post. At the time of Muff's survey there were eighteen telegraph poles to the mile. 11 The outcrop Can be traced with little difficulty from the northern boundary of the area to the neighbourhood of Kinango but further south it becomes less easy to distinguish owing to the degree of weathering, the paucity of exposures, and the frequent covering of superficial sand. A well-developed horizon of pale grey quartzite, dipping 10° to 18° to N.N.W. is exposed in the Ramisi River to the north of Jombo Hill. It has not been possible to trace this horizon away from the river so that its stratigraphical position cannot be ascertained. It has been provisionally referred to the Upper Maji-ya- Chumvi Beds although it might belong to the Mariakani Sandstones. Fragments of a similar rock, impregnated with finely disseminated galena, occur near the Lungalunga- Kikoneni road south of Jombo. (b) The Mariakani Sandstones,—The Mariakani Sandstones represent another series of fine-grained, flaggy sandstones and silty shales that follows conformably upon the Maji-ya-Chumvi Beds. They are more sandy than their predecessors and often more massive. In colour they are grey, greenish-grey or yellowish but attain a brownish tinge on weathering. Many of the horizons exhibit a blotched or mottled appearance and, since this is distinctive, the lowermost blotched band has been taken to represent the base of the series. They are well-jointed, ripple-marked and current-bedded but, unlike the Maji-ya-Chumvi beds, yield no traces of desiccation. Some exposures show small scale contortions of the bedding planes such as is commonly associated with slumping during compaction of sediments. Mineralogically the rocks are composed largely of poorly sorted, inequigranular, sub-angular quartz and felspar grains, the latter generally being considerably weathered. Mica, usually muscovite, is a common constituent of the shale horizons and it is also present in the sandstones, especially those higher in the succession. It is finely divided and occurs interstitially between the quartz and felspar grains where it makes a poor cementing material so that the rock crumbles easily to a fine sand. At some horizons the concentration of mica flakes along the bedding planes causes the rock to split readily into slabs. Grains of carbonaceous material, tourmaline, hornblende and zircon are sometimes found in the sandstones, and apatite has also been recorded. Iron and manganese staining is commonly

present along the bedding planes. There appears to be no mineralogical reason for the blotches found in many of the beds. They are more or less spheroidal but somewhat flattened on the upper and lower surfaces, suggesting that they originated as spheres during sedimentation but were subsequently compressed when the material underwent compaction. It is possible that they were caused by the initiation of local centres of leaching from which the iron or manganese oxides were partly removed leaving spheres deficient in those constituents. The only fossils so far obtained from these beds are poorly preserved plant remains that are unidentifiable and of no stratigraphical value. The outcrop can easily be followed in the northern part of the area but, like the Maji-ya—Chumvi beds, it becomes increasingly difficult to trace further south. The blotched sandstones, which are considered to be diagnostic of the Mariakani Sandstones, were not recognized in the southern part of the area and it is probable that the series is absent altogether. Such evidence as there is seems to show that the Upper Maji-ya- Chumvi beds lie in juxtaposition with the Mazeras Sandstone, suggesting that the Mariakani Sandstones are cut out by faulting. It may also be mentioned that the sedimentary material associated with the Nguluku agglomerate (p. 43) is composed mainly of fine-grained black shale which more closely resembles the Maji-ya-Chumvi beds than the Mariakani Sandstone. (3) The Upper Duruma Sandstone Series The Mazeras Sandstone and Shim'ba Grit.—Rocks of the Upper Duruma Sandstone Series give rise to the dominant topographical feature of the area—the Shimba Hills. They consist of massive, cross-bedded, quartzo-felspathic sandstones and grits with interbedded shales in the lower horizons, and attain a total thickness of at least 1,000 ft. 12 Their relationship to the underlying Mariakani Sandstone is not fully understood. In the north of the area they seem to be conformable with a gradation from one to the other but, further south, exposures near the Mombasa Pipe Line“ and in the Manolo River show rocks of widely diverse types in such close proximity that a conformable sequence is questionable. The junction is frequently marked by an increase in the angle of dip so that the possibility of local faulting cannot be overlooked. The lowermost beds seen, on the M.P.L. road, are coarse, dull white, felspathic sandstones that are cross-laminated and massive, and weather into huge blocks that may be as much as 20 to 30 ft. across. Overlying these are finer-grained, false-bedded sandstones with thin interbedded shales (Plate 2 (0)). Exposures of the succeeding horizons are scarce but it is suspected that they are dominantly shaly. Sections in the Manolo River show a series of coarse, massively jointed sandstones that continue upwards for several hundreds of feet and which, near their base, include a horizon, some fifty feet in thickness, that contains abundant fragments of silicified fossil wood. Outcrops showing this wood have been observed in many localities, but whether there is one horizon or several has not yet been determined. If there is only one, and it seems probable that this is so, then it will form an excellent marker horizon. for more detailed stratigraphical surveys, although the possibility that the band is diachronous must not be overlooked. Localities where the silicified wood has been found are as follows:— (1) Manolo valley near the Kwale-Kinango road. (c. 600 ft.) (2) Kwale-

Kinango road, one mile south of the Manolo River. (c. 600 ft.) (3) Manolo valley, one and a half miles north-north-west of the Shimba beacon. (580 ft.) (4) Near the confluence of the Manolo and Kitanzi rivers. (200 ft.) (5) M.P.L. mile 12. (c. 500 ft.) (6) Half a mile south of the Engineer's hut along the M.P.L. (480 ft.) (7) Duruma valley near the head of Port Reitz. . (8) Eastern flank of the Shimba hills near Giriama beacon. (c. 1,000 ft.) (9) Eastern slopes of Kivumoni hill near the summit. (c. 900 ft.) One of the significant points about these localities is that the two recorded from the eastern flank occur at a considerably greater altitude than those on the western flank; hence if only one horizon is represented, the regional dip of the Mazeras Sandstone is westerly. The drainage supports this. The wood is usually found as rolled fragments a few inches in diameter, but stems, and more rarely trunks, have been recorded. Maufe found several along the railway line and noted that in every case they were aligned north—south, indicating that the trees had been drifted into place and had not originally grown there. One of Maufe's specimens was referred by Newell Arber to the genus *Cedroxylon* (Maufe, 1908, p. 9). More recently found specimens have been identified with the genus *Dadoxylon* which ranges from the Trias to the Tertiary and which is represented in the Liassic rocks of Madagascar. The poor state of preservation has prevented specific identification, but one specimen shows close affinities to *D. sclerosum* (McKinnon Wood, 1930, p. 214) the type specimen of which is described from the Molteno Beds (Upper Trias) of South Africa. The main point of difference, and indeed a feature that is common to nearly all the Kenya specimens, is the absence of growth rings. This may perhaps indicate that the climate when the trees grew was equable. 4 \*

Frequent reference will be made to the Mombasa Pipe Line in future pages so, for the sake of brevity, it will be referred to as the "M.P.L." and the road that runs alongside as the ".P.L. road".

13 Overlying the wood horizon in the Kitanzi River is a series of pale greenish sandstones of from 120 to 150 ft. in thickness, overlain by a similar thickness of pale buff- coloured sandstone. The green colouration is due to finely divided chlorite that occupies the interstices between the quartz and felspar grains. Immediately below the wood horizon at this locality is a bed of marly sandstone, pale greenish in colour, that contains pellets of clay. Near Mrere, the horizons containing the wood and those immediately above and below are not exposed, the wood horizon being inferred from float. Other float in the neighbourhood is mainly, grit and there are several exposures of White quartzo-felspathic grit and quartzitic sandstone to be seen at Mrere itself. Borehole records from Mrere show that sandy clays and shales account for a large proportion of the succession passed through, yet no exposures of such rocks are to be seen at the surface. A typical borehole record (No. C. 319) illustrates this:—

Far From , To 0 12 Sand.  
 12 20 Sand and sandstone. 20 25 Clay and sand. 25 45 Sandstone and clay. 45 66 Clay with some sandstone. 66 77 Sandstone and clay. 77 79 Sand containing a six-inch band of coal. 79 220 Sandstone and clay. 220 280 Sandstone and clay (harder). 280 287 Grey clay. 287 298 Red clay. 298 300 Sandstone and clay. As will be seen, this particular borehole revealed a six-inch "band" of coal but, as no trace of coal has been found in any of the other boreholes nor on the

surface, the occurrence must be regarded as being of localized extent and due to the humification of one of the Dadoxylon trees. Doubtless there are several other similar occurrences Within the fossil wood horizon but the possibility that a coal seam exists is extremely remote. At the northern end of the Shimba Hills the sandstones are succeeded by coarse grits that show little trace of bedding. They are felspathic, the felspar being highly weathered and frequently kaolinized. From this level upwards to near the top of the series exposures are scarce, but boulders indicate that coarse sandstones and grits are represented. The uppermost exposures are of coarse, poorly-bedded grits, a hundred or so feet thick, containing wind-polished quartz pebbles of up to half an inch diameter. They are usually yellowish-white in colour but are sometimes reddish or purplish due to the surface concentration of iron hydroxide. These rocks are the Shimba grits and they form a resistant layer that caps the Shimba Hills and preserves them as a prominent feature. The rocks of the Upper Duruma Series are composed largely of quartz and felspar grains, the latter generally weathered and often kaolinized, cemented together by mica, felspar, silica or calcite. Of these cementing materials, mica and felspar are the most common but since neither forms a good cement the rocks readily disintegrate to sand. The mode of preservation of the fossil wood indicates that silicification was prevalent during Upper Duruma times, a feature that has been noted elsewhere in beds of the same age by Stockley (1936, p. 27) and Lightfoot (1914, p. 17). Stockley suggests that silicification has occurred in two phases, the first contemporaneously with the formation of the Karroo sandstones, and the second at a later date. This would appear to be the case in the present area for some of the fault planes are silicified. Stockley (op. cit., p. 28) goes on to give an interesting account of the possible mode of silicification of the Dadoxylon trees. In the lower horizons the grains are generally sub-angular indicating that the sediments were laid down under water, but the grains of the higher horizons show evidence of having been wind-polished. No true dreikanter were recognized although they have been recorded by earlier workers (Gregory, 1921, p. 46).

## **FLORA**

The area is already inhabited with no major flora and therefore the project won't really have significant impacts in terms of Flora except the bushes that will be cleared for site preparation

## **FAUNA**

Since the area is already inhabited there are no significant negative impacts on the Fauna but there are some ordinary lizards and insects. There are crabs that were seen on the cliff which live in water. Care to be taken not to destroy them during construction of the jetty. From what we gathered from a marine scientist who lives around the cliff is not a breeding place for creatures like turtles which would otherwise be of major consideration. Please note that should

there be any major concern from the lead agencies during the project review and approval process it shall be addressed adequately

## **INFRASTRUCTURE**

The area is served by a feeder road that branches from Links road which in turn branches from the busy Mombasa-Malindi road which connects it to Mombasa city centre and other areas and all these roads are well maintained by the Ministry of Public Works and the smaller ones by the Mombasa county.

## **POPULATION**

Nyali is one of the constituencies in Mombasa County. It has a population of 216,577 which forms part of Mombasa population of about 1,296,000 which forms part of Kenya's population which is estimated at about 47 million people according to the 2019 National census.

## **ECONOMIC ACTIVITIES**

This includes hospitals, medical centres, colleges and school, shops, small hotels, food kiosks/butcheries and meat joints, bars, salons, cooking gas selling, water vending, wine and spirit shops, hardwares, construction, transportation business and temporary structures where locals sell green groceries and do other small businesses to earn their daily bread.

## **2.0 OBJECTIVES OF THE PROJECT**

The main objectives of the project are:

- To generate income for the proponent mainly through tourism.
- To make use of the parcel of land optimally
- To protect the land from land grabbing
- To provide a hotel for the growing tourism demand
- To eliminate illegal dumping of waste as can be seen in of the photos
- To provide employment that is in line with the government development agenda



### **3.0 POSITIVE IMPACTS OF THE PROJECT**

The project will have the following benefits

- (i) It will create jobs particularly to the youths in the construction and operational phases
- (ii) It will enhance security since the proponent will install security light to light up the area around the hotel. Secondly there will be guards to man the hotel. This was cited by residents during the CPP exercise. Thugs hide in such place at night and attack people
- (iii) It will provide more apartments for the rapidly growing tourism industry
- (iv) Eradicate illegal dumping of waste on open undeveloped plots
- (v) Eradicate small rodents that hides in the bushes in the plot
- (vi) When it rains the stagnant water acts as a breeding place for mosquitoes
- (vii) It will also generate income for the government through tax collection and land rates which contributes to the national growth.
- (viii) Provide market for construction materials for the businessmen in the area
- (ix) Will open up the area more in terms of business opportunities especially the fishermen
- (x) As many people continue developing the undeveloped parcels of land the value increases
- (xi) Prevent social problems from land grabbing of undeveloped land or plots
- (xii) Will address the shoreline erosion that has really eaten up the shoreline as can be seen from the attached photos
- (xiii) Will stop people from helping themselves in the bushes. This a health hazard especially during rainy seasons

### **4.0 ALTERNATIVE SITE**

#### **1. YES PROJECT ALTERNATIVE**

The 'Yes' project alternative means that the proposed project will be implemented on the proposed site meaning that the anticipated impacts will be there but they shall be adequately mitigated. Secondly it means that the community, other stake holders and the government will reap the benefits stated in 3 above making it the most viable and beneficial alternative. Thirdly relocation of the project to another site is an option that is available but at the moment the proponent doesn't have another suitable parcel of land in the area where he can undertake the project and looking for another piece of land is expensive. This is the reason why he had no other option other than to undertake the project on the plot.

## **2. NO PROJECT ALTERNATIVE.**

The No project Alternative option to the proposed project means that the status quo remains meaning that there will be no the anticipated impacts. This in turn means that the proponent won't achieve the intended objectives stated above and there will be no benefits to the community and other stakeholders.

### **Disadvantages**

- (i) No creation of employment to people who would otherwise be employed particularly during the construction phase.
- (ii) No more hotel provided to help in the shortage of tourism hotels that is rapidly growing
- (iii) Discouragement of potential developers and investors which has a negative bearing on the national economy.
- (iv) Increased urban poverty and crimes associated with poverty.
- (v) No opening up of the area as stated by some residents during the CPP
- (vi) No positive bearing on the security in the area.
- (vii) Possible health hazards as a result of mosquitos and dumping of waste on the open plots
- (viii) No prevention of shoreline erosion
- (ix) No business opportunities
- (x) No government revenue

## **ALTERNATIVE CONSTRUCTION MATERIALS AND TECHNOLOGY**

The hotel will be constructed using modern materials that are environmentally friendly and are safe and passed by the Kenya Bureau of Standards and any other relevant authority. Efficient use of equipment shall be ensured to save energy and prevent environmental pollution. Rain water will be harvested from the roof through gutters or any other modern technology to supplement ground surface water. The water will be used for cleaning the premises and watering flowers and other vegetation that may or will be planted in the hotel compound. It can also be used for washing cars which would supplement the ground water. The building will have solar energy that supports green energy. It will be designed to take advantage of natural lighting to minimize use of electrical energy

## **5.0 DESCRIPTION OF THE PROJECT**

The project will involve construction of 14-storey building with 14 3-bedroom apartments, 14 2-bedroom apartments, administration office, restaurant, lobby, jetty, conference hall,

laundry, 2 meeting rooms, pool bar/entertainment, infinity pool and parking areas (ground and basement)

## **5.1 CONSTRUCTION PHASE**

This is the main and most expensive phase of the project. It will involve the following activities:

- Clearing of the bushes
- Excavation of the site
- Construction of the 14-storey building that consists of:
  - Construction of the boundary wall
  - Construction of the jetty
  - Construction of the infinity pool
  - Construction of the restaurant
  - Construction of the bedrooms
  - Construction of the lobby
  - Construction of the pool bar/entertainment area
  - Construction of the car parks
  - Construction of the administration offices
  - Construction of the conference hall
  - Construction of the two meeting rooms
- Equipment and machines such as concrete mixers will be used and transportation Lorries for the construction materials.
- Cranes will be used for construction of higher floors
- Installation of lifts
- Shaping of stones will also be involved since the proponent will use stones from the quarry especially on the foundation.
- Construction of a boundary wall round the plot for security reasons.
- Construction of the biodigester
- Plumbing works
- Electrical power installation
- Finishing
- Wastes from construction materials and packaging materials from the construction materials will be generated but this will be mitigated as will be seen later under waste management and the ESMP.

## **5.2 OPERATIONAL PHASE**

This involves the following activities:

- Occupation of the apartments by the administration staff, workers and other people mainly tourists. This is when domestic waste (solid and liquid) will be

continuously generated but adequate measures will be put in place as recommended in this report.

- Use of swimming pool
- Entertainment
- Holding of meetings
- Docking by leisure boats at the jetty
- Regular painting of the building particularly the interior parts
- Garbage/waste generation and collection
- Flower and tree planting within the compound

### **5.3 CONSTRUCTION MATERIALS**

The construction materials that will be used are of high and acceptable standards

They include, but not limited to, the following:

Sand, cement, stones, glass, steel metals and metal products, plastic and PVC pipes and materials, ceiling materials, steel pipes, Iron sheets, timber and timber products, precast and insitu concrete products, paints and thinners, electric cables and conduits, tiles, cabros. Other materials that may be used include necessary fittings and fixtures such as electrical gadgets (switches, sockets lamps, etc.), water closet sets and other bathroom accessories, water taps, sinks and kitchen equipment and general household furniture

### **5.4 BY-PRODUCTS FROM THE CONSTRUCTION PHASE**

This phase does not produce by-products but generates wastes such as metal pieces, timber, pieces of stones, glass, paint and PVC materials, steel metal pieces and packaging materials such as cement containers, broken stones, broken tiles, cabros, plastic materials among others. They will be disposed appropriately as will be seen later under the waste management.

### **5.5 ACTIVITIES THAT WILL BE INVOLVED IN CONSTRUCTION, OPERATION AND DECOMMISSIONING PHASES.**

It will involve the following:

#### **5.5.1 CONSTRUCTION PHASE**

- Site clearing
- Site excavation
- Mixing of construction materials e.g. cement and sand
- Construction of the building
- Construction of the jetty
- Construction of the perimeter wall for security reasons
- Installation of electrical appliances and gadgets and water pipe network
- Installation of lifts

- Making of the compound
- Construction of the basement parking
- Construction of a biodigester.
- Planting of environmentally friendly vegetations

### **5.5.2 OPERATIONAL PHASE**

This involves the following activities:

- Occupation of the building by the administration, workers and visitors mainly tourists. This is when domestic waste will be continually generated but adequate mitigation measures will be put in place as recommended in this report.
- Sweeping and cleaning of the building
- Regular painting of the building particularly the interior parts
- Garbage generation and collection
- Planting and taking care of environmentally friendly vegetations
- Swimming activities
- Meetings
- Entertainment
- Docking of marine vessels at the jetty
- Business opportunities especially between proponent and the fishermen and beach guides

### **5.5.3 DECOMMISSIONING**

This will involve demolishing of the building in case the proponent decides to do so or compelled by external circumstances such road expansion as has been witnessed in other areas in the country or the government orders through the relevant authorities. The activities involved includes, but not limited to, the following:

- Construction of a temporary perimeter wall for safety and security reasons
- Demolition of the building
- Clearing of the site and disposal of the waste generated during the decommissioning.
- Restoration of the site back to its original state by replenishing the topsoil and planting of grass and environmentally friendly vegetation. This is for use for the future generation that is, sustainable development.
- Prevention of shoreline erosion

## **6.0 WASTE MANAGEMENT**

Solid and liquid wastes are expected to be generated during all the phases of the project. The solid waste that will be generated during the construction phase includes the following:

- Small stones and debris from the shaped stones especially during construction of the foundation
- Metal wastes from the steel metals (used for reinforcement of the building) and iron sheets (used for temporary perimeter wall and roofing). This will be sold to licensed scrap metal dealers or used in future projects
- Pieces of timber used during construction. This will be given or sold to the local residents who run food kiosks in the area or used by the proponent in other projects elsewhere.
- Packaging materials of the construction materials which will be sold or given to the paper waste recyclers
- Wastes from kitchen equipment such as sinks and taps
- Wastes from the electrical appliances that will be disposed appropriately
- Glass wastes from glasses used for windows. To be given or sold to glass recyclers
- From the domestic activities by the occupants. The liquid waste will be directed to the biodigester.
- Effluent generated will be directed to the biodigester for treatment before disposal as per EMCA (Water quality regulations provides). The effluent discharge licence shall be obtained as legally required
- The solid waste will be put in appropriate waste bins and collected by a licensed waste collector at planned intervals who will dispose it at the licenced waste management sites.
- Food leftovers and other wastes by workers during construction

## **7.0 NEGATIVE IMPACTS RAISED DURING PUBLIC CONSULTATION**

The following concerns were raised during the public consultation exercise by area residents.

- Put up the boundary wall for both safety and security reasons.
- Excessive noise by material transport vehicles and construction equipment and during construction and operational phases of the project
- Air pollution during construction, transport of materials and transport vehicles.
- Disposal of construction waste materials on the road side
- Poor waste/garbage management and disposal during the use phase of the project
- Failure to harvest rain water from the roof of the building which goes to the neighborhood

- Over speeding of the material or waste transport vehicles between the project site due to people safety.
- Falling objects from higher floors during construction that can cause injuries
- Noise especially at night
- Interference with the drainage system
- Obstruction of the feeder road by vehicles to and from the site
- Encroachment into the coastline/shoreline
- Shoreline erosion
- interference with the geology of the cliff and nearshore substrate in the marine reserve and adjacent areas
- disposal of plastic waste into the ocean
- Provide portable toilets for people during construction
- Waste water disposal
- Compatibility with the current set up
- View of the ocean
- Ocean pollution
- Affect the serenity of the area
- traffic interference
- Falling objects from higher floors during construction that can cause injuries/accidents

**NB:** All these concerns have been adequately addressed in the ESMP later in this report. The positive impacts were highlighted earlier in the report.

## **8.0 INSTITUTIONAL COMMITMENT FOR SOUND ENVIRONMENTAL MANAGEMENT**

The proponent, as he indicated during discussions with him, is fully committed to sound environmental protection and management. This is by installing mechanisms that reduce or eliminate environmental pollution aspects, effectively communicating to the contractor and residents in operational phase. Careful handling of all the waste generated during all the phases of the project and other measures as mentioned earlier in the executive summary (such as carrying out of ESIA/EA and implementing the ESMP in full also clearly demonstrates his commitment to environmental conservation and protection.

## **9.0 OBJECTIVES OF THE ASSESSMENT**

The assessment was conducted as per the requirements of the Environmental Management Coordination Act No. 8. Of 1999 (EMCA) and Environmental Impact Assessment /Audit regulations 2003. The main objective was to assess the current status of the area in respect to environmental management, social and economic lives of the residents in the area and

recommend the best practices to ensure high and sustainable environmental performance (protection and conservation). This was done through:

- site visits
- consultation and public participation as per the attached CPP forms
- discussions between the assessment team and proponent. Emphasis was made on implementation of the recommendations in the report.

## **10.0 ASSESSMENT SCOPE AND METHODOLOGY**

The scope of the assessment covered the actual plot and the neighborhood. It includes confirmation of compliance to the statutory and regulatory requirements as well as other necessary requirements. It also covered all the activities that will be involved in all the phases of the project.

The methodology used for collection of information was through interviewing the neighbors (CPP), proponent, document review to ascertain compliance, observation, taking of photos and site visit of the proposed project site. The following aspects were covered:

- Statutory and regulatory requirements and compliance
- All aspects of environmental pollution (negative impacts)
- Potential positive environmental and socio-economic impacts
- Potential negative impacts of the proposed project
- Occupational Health and safety of the personnel that will work at the site all the time.
- Usage of resources such as water and electrical power which have an indirect bearing on the environment
- Social/cultural and economic aspects/impacts
- Safety aspects during construction

The assessment was carried out intensively as can be seen from the attached CPP forms so as to gather as much information as possible from the people who are likely to be impacted by the project.

## **11.0 OCCUPATIONAL HEALTH AND SAFETY CONCERNS OF PERSONNEL WORKING AT THE SITE AT ANY GIVEN TIME**

### **11.1 PERSONAL PROTECTIVE EQUIPMENTS (PPE) AND COVID 19 CONTAINMENT MEASURES**

The following PPEs must be provided and appropriately used:

- (i) Safety goggles particularly the staff shaping stones to prevent eye damages
- (ii) Suitable gloves for the casual workers
- (iii) Safety shoes
- (iv) Uniforms



- (v) Helmets particularly for all workers at the site
- (vi) Safety harnesses or people working at height
- (vii) Proper reinforcements of structures for the people working at height
- (viii) Dust masks for stone shapers and the team that will do the painting of the house to prevent respiratory impacts
- (ix) Face masks, social distance and observation and strict adherence of all the Covid-19 containment measures as set out by the ministry of health

## **11.2 EMERGENCY EXITS**

The proponent will communicate the following:

- The fire exit routes that is, the doors and the gate(s) and assembly points will be effectively communicated to all the occupants at any given time

## **11.3 FIRST AID BOX/FIRST AIDERS**

The contractor and the proponent will provide First Aid Boxes to be used by his workers in case of an injury or accident which should be administered by a qualified first aider and ensure that the First Aid Boxes have all the necessary contents and is accessible all the time. During the operational phase the first aiders shall be refreshed annually as legally required and the institution shall have the right number of qualified first aiders

## **11.4 FIRE FIGHTING SYSTEM**

The proponent will install appropriate fire extinguishers which will be appropriately secured at some points in the building. Train the workers on fire-fighting techniques. Previously many proponents never used to do this. The other group that does not provide the firefighting equipment is those who do not carry out ESIA for their projects. The problem of fighting fire is left to the county and municipal councils who sometimes do not have adequate equipment to fight fire all over the country and where they are available sometimes, they are faulty. The fire extinguishers will be easily accessible all the time and inspected after every six (6) months and mounted at a height 60cm from the floor.

## **12.0 POLICY, STATUTORY AND REGULATORY FRAMEWORK**

### **12.1 INTRODUCTION**

The Government of Kenya environmental policy aims at integrating environmental aspects into national development plans. The objectives of the national environmental policy include the following:

- Optimal use of natural land and water in improving the quality of human environment.
- Sustainable use of natural resources to meet the needs of the present generations while preserving their ability to meet the needs of the future generations
- Integration of the environmental conservation and economic activities into the process of sustainable development
- Meeting national goals and international obligations by conserving bio-diversity, arresting desertification, mitigating the effects of disasters and protecting the ozone layer and maintaining an ecological balance on earth.

Kenya has approximately seventy-seven (77) statutes which relate to environmental concerns. Most of these laws are specific to sectors such as public health, soil erosion, protected areas, endangered species, water rights and quality, air quality, noise and vibration, cultural, historical, scientific and archaeological sites, land use and resettlement and so on.

Previously, the environmental management activities were implemented through a variety of instruments such as policy statements, and sectoral laws and also through permits and licenses.

As environmental concern became more and more serious the GoK enacted EMCA Act in December 1999. This saw the creation of the environmental governing body called NEMA which started its operation in the year 2002 with the mandate to co-ordinate all environmental activities in the country.

## **12.2 STATUTORY AND REGULATORY FRAMEWORK**

### **12.2.0 ENVIRONMENTAL MANAGEMENT CO-ORDINATION ACT No. 8 of 1999**

EMCA CAP 387 received the presidential assent on 3<sup>rd</sup>/June/2015

- (i) It provides for each and every person entitlement and access to a clean and healthy environment and makes it mandatory for any project to be carried out in a manner that is not detrimental to the environment and/or depletes the natural resources
- (ii) Provide guidelines for the establishment of an appropriate legal and institutional framework for the management of the environment in Kenya
- (iii) Provide a framework legislation for over 77 statutes in Kenya that contain environmental provisions
- (iv) Provide guidelines for environmental impact assessment, environmental audit and monitoring, environmental quality standards and environmental protection orders

NB: EIA/EA requirements are in Legal notice 101 of 2003. According to these regulations Part V (environmental audit and monitoring) ongoing projects shall be audited and report submitted to the National Environmental Authority (NEMA). To implement EMCA 1999 No. 8 of 1999 the GoK established the following structures:

### **12.2.1 NATIONAL ENVIRONMENTAL COUNCIL (NEC) ESTABLISHED BY EMCA 1999 PART 111**

NEC was charged with the following responsibilities:

- Be responsible for policy formulations and directions for the purposes of this Act
- Set national goals and determine policies and priorities for the protection of the environment.
- Promote co-operation among public departments, local authorities, private sector, non-governmental organizations and such other organizations engaged in environmental protection programmes and
- Perform such other functions as are assigned under this act.

### **12.2.2 NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)**

NEMA was established to exercise general supervision and co-ordination over all matters relating to the environment and to be principal instrument of the government in the implementation of all policies relating to the environment

### **12.2.3 COUNTY ENVIRONMENT COMMITTEES ESTABLISHED**

#### **UNDER EMCA 1999 PART 111**

The proponent shall abide by all the recommendations made thereof on the project by the committee should need arises.

These committees are responsible for the following:

- Be responsible for the proper management of the environment within the county in respect of which they are appointed
- Develop a county strategic environmental action plan every 5 years
- Perform such additional functions as are prescribed by this Act or as may, from time to time, be assigned by the minister by notice in the Gazette

### **12.2.4 NATIONAL ENVIRONMENT COMPLAINTS COMMITTEES- ENVIRONMENTAL**

#### **MANAGEMENT CO-ORDINATION ACT 1999**

Should there be a complaint by the public that is caused by the project then the proponent will implement all the recommendations made or take the necessary action(s) to resolve the complaint

These committees are charged with the responsibility of investigating complaints against a person or the Authority on matters related to environment, prepare and submit periodic reports of its activities and perform other functions as be may be assigned by NECC.

### **12.2.5 OCCUPATIONAL HEALTH & SAFETY ACT 2007**

The proponent and the contractor undertaking the project shall ensure that the persons at the site and the neighbours or any other person is safe and his or her health is not affected by the implementation activities of the project. Occupational Health and Safety Act 2007 was established by the parliament to provide for the safety, health and welfare of workers and all persons lawfully present at work places, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes.

### **12.2.6 WATER ACT 2016**

The proponent will put all necessary measures in place to conserve the precious commodity as per the act requirements. The proponent will apply for water connection from Mombasa Water and Sewerage Company. This act was established to provide for management, conservation, use and control of water resources and for the acquisition and regulation of rights to use water, provide for the regulation and management of water supply and sewerage services, to repeal the water Act (CAP 372) and certain provisions of the local government Act and for related purposes

### **12.2.7 ENVIRONMENTAL MANAGEMENT CO-ORDINATION (ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT) REGULATIONS 2003**

Such projects require to undergo the environmental impact process which the proponent has done and all the identified impacts are identified and adequately mitigated. (See the EMP in the report)

These regulations shall apply to all policies, plans, programmes, projects and activities specified in part IV and second schedule of the Act. Environmental audit study shall be undertaken on the following development activities which are likely to have adverse environmental impacts i.e. ongoing projects commenced prior to the coming into force of these regulations. (Part V of Legal Notice 101 on EIA/EA regulations of 2003)

### **12.2.8 ENVIRONMENTAL MANAGEMENT CO-ORDINATION (WATER QUALITY) REGULATIONS**

The proponent shall ensure that water quality is not affected in any way e.g. from surface runoffs from the site. This may affect the human life as well as the fauna and aquatic life as per the act

These are provided in the legal notice 120 in the Kenya Gazette Supplement No. 68 (the Legislative Supplement number is 36) that commenced on 29<sup>th</sup>/September/2006. These regulations were established to protect and conserve water resources. The regulations shall apply to drinking water, water used for industrial purposes, water used for agricultural purposes, water used for recreational purposes, water used for fisheries and wildlife and water used for any other purpose. It outlines the following:

- a. Standards for effluent discharge into the environment
- b. Standards for effluent discharge into the public sewers
- c. Quality monitoring for sources of domestic water
- d. Monitoring for discharge of treated effluent into the environment

### **12.2.9 ENVIRONMENTAL MANAGEMENT CO-ORDINATION (WASTE MANAGEMENT)**

#### **REGULATIONS**

Waste management is a big challenge to many proponents undertaking projects especially those who do not let their projects to undergo EIA/ESIA process or don't conduct annual environmental audits. This ends up in illegal dumping of waste in undesignated areas. The proponent has been adequately informed and advised on sound waste handling during all the phases of the project

These regulations provide guidelines on waste management and are found in legal notice 121 in the Kenya Gazette Supplement No. 69 (the Legislative Supplement No. 37) that commenced on 29<sup>th</sup>/September/2006. It, among other requirements, states under Part 11 (General provisions) that:

- (i) No person shall dispose of any waste on a public highway, street, road, recreational area or in any public except in a designated waste receptacle
- (ii) A waste generator shall segregate waste by separating hazardous waste from non-hazardous waste and shall dispose of such wastes in such facility as shall be provided by the relevant local authority.

### **12.3.0 NOISE PREVENTION AND CONTROL RULES/ NOISE AND EXCESSIVE VIBRATION CONTROL ACT 2009**

The proponent shall adhere to the noise prevention and control rules and excessive vibration control act. And he is committed to noise minimization

These Regulations aim at ensuring the maintenance of a healthy environment for all people in Kenya; the tranquility of their surroundings and their psychological wellbeing by regulating noise levels and excessive vibration. The Regulations elevate the standards of living of the people by prescribing acceptable noise levels for different facilities and activities. The Regulations prescribe the maximum permissible noise levels from a facility or activity to which a

person may be exposed to; provide for the control of noise; and provide for mitigating measures for the reduction of noise. The maximum permissible noise levels are based on the various zones as outlined in the Regulations. These regulations apply even to work places and do not negate the Factories and Other Places of Work (Noise Prevention and Control) Rules, 2005. These Regulations prohibit production of any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. Any person who is likely to be involved in activities that emit noise or excessive vibrations beyond the permissible levels must obtain a license or a permit respectively from the authority.

These rules are found in the legal notice 25 of Kenya Gazette Supplement No. 22 that commenced in April 2005 and applies to every plant, premises, place, process and operations to which the provisions of the Factories applies. They include the following:

- a. Noise prevention programme
- b. Noise measurements and records
- c. Permissible noise levels
- d. Information on noise and training of workers
- e. Noise measuring equipment
- f. Engineering controls
- g. Installation and maintenance of machinery or plant
- h. Means of communication
- i. Hearing protection
- j. Noise hazard areas
- k. Workers responsibility in noise hazard areas
- l. Duties of the occupier
- m. Medical examination and hearing tests
- n. Compensation and notification of occupational hearing impairment
- o. Noise programme review
- p. Offences and penalties

### **12.3.1 BUILDING CODE 2000**

The proponent shall ensure that he does not in any way prohibit or affect any future potential development of a sewer line so as to adhere to the building code 2000 should a need arises to do one. This is an advice to the proponent on potential impacts of his project e.g. any encroachment on the road reserve where a sewer line is likely to pass would definitely affect the development and would lead to demolition

Section 194 requires that where sewer line exists the occupants of the nearby premises shall apply to the Local Authority for a permit to connect to the sewer line and all waste water

should be discharged into sewers. The code also prohibits construction of the structure or buildings on sewer lines.

### **12.3.2 PENAL CODE**

The proponent shall ensure that ensure that he does not affect any water source around as provided in the penal code whether directly or indirectly

Section 191 of the penal code states that if any person or institution that voluntarily corrupts or foils water for public springs or reservoirs, rendering it less fit for its ordinary use is guilty of an offence. Section 1921 of the same code says that a person who makes or vitiates the atmosphere in any place to make it noxious to health of persons/institutions, dwelling or business premises in the neighborhoods or those passing along public way commits an offence.

### **12.3.3 COUNTY GOVERNMENTS ACT 2012**

The proponent shall abide by all the requirements of the County governments Act 2012. See part of it below

An Act of Parliament to give effect to Chapter Eleven of the Constitution; to provide for county governments' powers, functions and responsibilities to deliver services and for connected purposes

#### **103. Objectives of county planning**

The objectives of county planning shall be to—

- (a) ensure harmony between national, county and sub-county spatial planning requirements;
- (b) facilitate the development of a well-balanced system of settlements and ensure productive use of scarce land, water and other resources for economic, social, ecological and other functions across a county;
- (c) maintain a viable system of green and open spaces for a functioning eco-system;
- (d) harmonize the development of county communication system, infrastructure and related services;
- (e) develop urban and rural areas as integrated areas of economic and

social activity;

(f) provide the preconditions for integrating under-developed and marginalized areas to bring them to the level generally enjoyed by the rest of the county;

(g) protect the historical and cultural heritage, artefacts and sites within the county; and

(h) make reservations for public security and other critical national infrastructure and other utilities and services;

(i) work towards the achievement and maintenance of a tree cover of at least ten per cent of the land area of Kenya as provided in Article 69 of the Constitution; and

(j) develop the human resource capacity of the county.

#### **12.3.4 THE PUBLIC HEALTH ACT: LAWS OF KENYA CHAPTER 242**

The proponent shall direct any waste water to the biodigester and ensure that solid waste is handled by a licenced waste collector and maintain the premises in a hygienic condition. The Act prohibits activities that may be injurious to human health. It then becomes the responsibility of the local authority to maintain clean and sanitary conditions. This Act:

- Calls for cleanliness of premises
- Calls for supply of portable water for human purposes
- Offers guidelines on waste water disposal and management
- Prohibits the discharge of emissions that may be injurious to health

#### **12.3.5 ELECTRIC POWER ACT NO. 11 of 1997**

The proponent shall conserve electrical energy in all possible ways. This has an indirect bearing on the environment. She shall put measures in place to do e.g. switching off lights when not in use, use of energy saving bulbs, e.t.c

The Electric power Act No. 11 of 1997 deals with generation, transmission distribution, supply and use of electrical energy as well as the legal basis for establishing the systems associated with these purposes. According to the Act, the Minister through the Electricity Regulatory Board is conferred with the legislative power to grant licences and authorize works for the



generation or transmission of electrical energy. However the provisions of section 4 of the Act require such authorization. Only for generating plants with a rating capacity exceeding 1000kw. Section 9(3) of the Act address environmental integrity of the power generating systems which, must be considered by the board in recommending the grant of licences to the minister.

### **12.3.6 NATIONAL CONSTRUCTION AUTHORITY 41 OF 2011**

Any construction of buildings shall comply with the NCA Act requirements

The National Construction Authority Act, Number 41 of 2011 is set to streamline, overhaul and regulate the construction industry in Kenya. The industry has for many years suffered poor legislative framework and has been dominated by quacks and unqualified persons. The industry has also suffered a lot of competition from foreign contractors who are seen to offer cheaper and more quality work. The new Act is a win for the public as it guarantees public safety. All contractors must be registered with the Authority meaning that shady contractors and quacks will be locked out of the industry. It is an offence to carry out any construction work without first having been registered with the Authority

**NCA has the following powers:**

**1)** The Authority shall have all the powers necessary for the proper performance of its functions under this Act, and, in particular, but without prejudice to the generality of the foregoing, the Authority shall have power -.

(a) to award certificates of proficiency to contractors, skilled construction workers and construction site supervisors;

(b) with the approval of the Minister, to impose fees or any other charges as it deems fit in respect of any of its functions or powers;

(c) with the approval of the Minister, to facilitate, or promote the establishment or expansion of, companies, corporations or other bodies to carry on any activities related to construction either under the control or partial control of the Authority or independently; and

(d) to receive, in consideration of any services that may be rendered by it, such commission or payments as may be agreed upon with any person

### **12.3.7 THE PHYSICAL PLANNING ACT CAP 286**

- The proponent shall ensure that any construction of buildings may be in future shall comply with the Act requirements. The area is a mixed development area and the proponent has applied for a change of user from residential single dwelling to commercial use

The local authorities are empowered under section 29 of the act to reserve and maintain all land planned for open spaces, parks, urban forests and green belts. The same section therefore allows for the prohibition or control of the use and development of land and buildings in the interest of proper and orderly development of an area. Section 30 states that any person who carries out development without development permission will be required to restore the land to its original condition. It also states that no other licensing authority shall grant license for commercial or industrial use or occupation of any building without a development permission granted by the respective local authority. The proponent has submitted architectural drawings to the NCC for approval. Finally section 36 states that if connection with a development application local is of the opinion that the proposed development activity will have injurious impacts on the environment the application shall be required to submit together the application an environmental impact assessment EIA report

#### **12.3.8 ENERGY MANAGEMENT REGULATIONS 2012**

Energy audit shall be conducted if the consumption exceed the stipulated limits i.e. more than 180000 kwh per year

These regulations applies to the owner or occupier of industrial, commercial and institutional facilities using any form of energy. If the facility consumes more than 180000kwh of both Electrical and Thermal energy per year they must comply to these regulations. It further requires that the owner shall cause an energy audit of the facility to be undertaken by a licensed energy auditor at least once every three years. This is a commission established by an Act of parliament to oversee the regulation in the energy sector particularly electricity, petroleum an renewable energy

#### **12.3.9 THE ENVIRONMENT MANAGEMENT AND CO-ORDINATION (AIR QUALITY) REGULATIONS 2014.**

The proponent shall ensure adherence to the requirements of these regulations by ensuring a clean and health environment.

The objective of the Regulations is to provide for prevention, control and abatement of air pollution to ensure clean and healthy ambient air. It provides for the establishment of emission standards for various sources such as mobile sources (e.g. motor vehicles) and stationary sources (e.g. industries) as outlined in the Environmental Management and Coordination Act, 1999. It also covers any other air pollution source as may be determined by the Minister in consultation with the Authority. Emission limits for various areas and facilities have been set. The regulations provide the procedure for designating controlled areas, and the objectives of

air quality management plans for these areas. The emission standards for mobile sources are however stipulated under KS 1515.

#### **12.4.0 THE WORK INJURY BENEFITS ACT, 2007**

Part II provides for the obligation of employers to obtain an insurance policy to cover the employer's liability under the provision of the act, to register with the director of Work injuries Benefits and to keep records make annual returns to the Director Part VI provides for notification of occupational diseases and compensation for an employee who contracts an occupational disease. Part VII provides for the medical aid to be provided by an employer. This includes first aid facilities, conveyance of an employee to and from a medical facility and payment of medical expenses Modernizes legislation and brings it up to date with the current circumstances and realities Extends insurance cover and ensures adequate compensation for injury and work-related diseases regardless of employer's solvency.

#### **12.4.1 ENVIRONMENTAL MANAGEMENT CO-ORDINATION (CONSERVATION OF**

##### **BIOLOGICAL DIVERSITY (BD) REGULATIONS**

The proponent shall ensure that he protects and conserves the environment for the survival all other living or non-living matter. This is because her activities may directly or indirectly affect the environment area of concern

These regulations are found in the Legal Notice 160 of the Kenya Gazette Supplement No. 84 that commenced in December 2006. They apply to the conservation of biodiversity which includes conservation of threatened species, inventory and monitoring of BD and protection of environmentally significant areas, access to genetic resources, benefit sharing and offences and penalties

#### **12.4.2 INTERNATIONAL COVENTIONS AND TREATIES**

The applicable International and treaties include:

- The Ram Sar Convention on wetlands of international importance of 1971. This convention is important as the construction activities tend to affect wetlands in view of the manner in which the waste from the activities is handled.
- The convention on Biological Diversity of 1999 is important because the project will, though not significant, have impacts on the flora and fauna. The Convention states that the project implementation should take into account the uniqueness of various ecological zones, while avoiding the environmentally sensitive issues

### **12.4.3 INTEGRATED COASTAL ZONE MANAGEMENT (ICZM)**

Integrated Coastal Zone Management (ICZM) is a resource management system following an integrative, holistic approach and an interactive planning process in addressing the complex management issues in the coastal area

This concept was borne in 1992 during the Earth Summit of Rio de Janeiro. The policy regarding ICZM is set out in the proceedings of the summit within Agenda 21, Chapter 17. The European Commission defines ICZM as “a dynamic, multidisciplinary and iterative process to promote sustainable management of coastal zones. It covers the full cycle of information collection, planning (in its broadest sense), decision making, management and monitoring of implementation. ICZM uses the informed participation and cooperation of all stakeholders to assess the societal goals in a given coastal area, and to take actions towards meeting these objectives. ICZM seeks, over the long-term, to balance environmental, economic, social, cultural and recreational objectives, all within the limits set by natural dynamics. 'Integrated' in ICZM refers to the integration of objectives and also to the integration of the many instruments needed to meet these objectives. It means integration of all relevant policy areas, sectors, and levels of administration. It means integration of the terrestrial and marine components of the target territory, in both time and space

### **12.4.4 NATIONAL CLIMATE CHANGE FRAMEWORK POLICY**

Kenya's economy is highly dependent on the natural resource base, and thus is highly vulnerable to climate variability and change. Rising temperatures and changing rainfall patterns, resulting in increased frequency and intensity of extreme weather events such as droughts and flooding, threaten the sustainability of the country's development. In order to safeguard sustainable development, the Government of Kenya has developed this National Climate Change Framework Policy to provide a clear and concise articulation of overall response priorities to climate variability and change. Kenya has shown commitment to protect the climate system for the benefit of the present and future generations by supporting the United Nations Framework Convention on Climate Change (UNFCCC) process, ratifying the Kyoto Protocol in 2005, and contributing to continental and regional climate change initiatives. Further, the country's Constitution has set out a legal commitment to attain ecologically sustainable development; hence providing a firm basis to address the challenge of climate change while striving to attain the development goals set out in Kenya Vision 2030. This Policy's focus is on the interlinkages between sustainable national development and climate change. Climate change adversely impacts key sectors that are important to the economy and society: Environment, Water and Forestry; Agriculture, Livestock and Fisheries; Trade; Extractive industries; Energy; Physical Infrastructure; Tourism; and Health. This Policy therefore elaborates

intervention measures that can help to achieve the goal of low carbon climate resilient development.

Why a Framework Climate Change Policy? This Policy was developed to facilitate a coordinated, coherent and effective response to the local, national and global challenges and opportunities presented by climate change. An overarching mainstreaming approach has been adopted to ensure the integration of climate change considerations into development planning, budgeting and implementation in all sectors and at all levels of government. This Policy therefore aims to enhance adaptive capacity and build resilience to climate variability and change, while promoting a low carbon development pathway.

#### **12.4.5 NATIONAL TOURISM POLICY**

The Ministry of Tourism and Wildlife has a National Tourism Policy which has guided the sector since 2010. This policy is now due for review because of a number of changes that have happened since it was adopted.

The Draft Revised National Tourism Policy is now in the stage for stakeholder participation to provide their input and comments.

The Ministry of Tourism and Wildlife is therefore requesting the tourism stakeholders to submit their inputs and comments on the Draft Revised National Tourism Policy. The Revised National Tourism Policy will guide the sector into the post-covid-19 era and beyond

#### **12.4.6 NATIONAL OCEANS AND FISHERIES POLICY**

The Oceans and fisheries sector plays an important role in the global economy. In Kenya, the sector provides food, employment and incomes to a large population and earns the country Kshs 5 billion annually from the foreign exchange. Kenya's annual fish production is valued at approximately Kshs. 8 billion at ex-vessel price. These earnings are likely to increase if the underexploited areas such as Aquaculture and the Exclusive Economic Zone (EEZ) are tapped. Despite its economic and social importance, the fisheries sector is faced with a number of challenges. These include uncoordinated development approaches, low investment, over-exploitation of some water bodies, and under-utilization of some resources, low aquaculture development and weak linkages between research, management and other public and private players. Furthermore, the fisheries sector has been unable to realize its full potential due to factors such as inadequate funding, environmental degradation and evolving market access issues. Moreover, the sector has operated without an overarching policy and legal framework since independence. Acknowledging the need for the fisheries sector in Kenya to operate within a specific policy framework, the Government took a key decision to develop a comprehensive policy for the sector. In developing this policy, cognizance was taken of existing national

development plans, the National Food Policy (1981 & 1994), Millennium Development Goals (MDG, 2000), the District Focus for Rural Development of 1985, the Poverty Reduction Strategy Paper (PRSP) of 2001, and the Economic Recovery Strategy (ERS) for Wealth and Employment Creation (2003), the Strategy for Revitalizing Agriculture (SRA) of 2004 and the Kenya Vision 2030; and other Regional and International policies, agreements and protocols. This policy document proposes a coordinated framework for addressing the challenges facing the sector. The overall aim is to guide the sustainable development of the fisheries sector in an effective and coordinated manner. To ensure maximum benefits from the vast fisheries resources, the Government commits to implement this policy

#### **12.4.7 NATIONAL LAND POLICY**

The absence of a clearly defined land use policy in Kenya after years of independence has resulted in a haphazard approach to managing the different land use practices and policy responses. Land use continues to be addressed through many uncoordinated legal and policy frameworks that have done little to unravel the many issues that affect land use management. The Constitution of Kenya 2010, Kenya Vision 2030 and the Sessional Paper No. 3 of 2009 on National Land Policy all call for a clear framework for effectively addressing the challenges related to land use. It is in response to this call that this Land Use Policy has been developed, incorporating all activities that are likely to have an impact on the use of land and its resources. The overall goal of the national land use policy is to provide legal, administrative, institutional and technological framework for optimal utilization and productivity of land related resources in a sustainable and desirable manner at national, county and community levels. The policy is premised on the philosophy of economic productivity, social responsibility, environmental sustainability and cultural conservation. Key principles informing it include efficiency, access to land use information, equity, elimination of discrimination and public benefit sharing. The policy is cognizant of numerous factors that affect land use in Kenya which include geographic and ecological features, population distribution, social, historical, cultural and economic factors. Other key factors are administrative, institutional and policy instruments, investment, urbanization and land tenure. So as to ensure efficient, productive and sustainable use of land, key measures shall be taken by the government (both national and county) and all land users. These include: sound land use practices, conservation and enhancement of the quality of land and land-based resources and the proper management of demographic and health parameters. The Government shall institute mechanisms designed to induce land owners to put their land to productive use and encourage the application of efficient technology for the intensification of land use. Urban land use will be improved through measures such as establishing transparent, accountable, sustainable, comprehensive and participatory governance structures and decision-making processes. Other key measures address issues of land cover, land use data and land use planning. Land use plans shall be developed at both national and county levels with full

participation of all stakeholders and strict adherence to them shall be enforced. Harmonization of laws and policies, mapping and documentation of all land uses in the country, developing a framework for incentives to encourage maintenance of forest cover, land banking for industrial, commercial, agricultural, residential and infrastructure development are other critical measures that shall be taken

#### **12.4.8. KENYA MARITIME AUTHORITY ACT**

An Act of Parliament to provide for the establishment of the Kenya Maritime Authority as a body with responsibility to monitor, regulate and coordinate activities in the maritime industry, and for all other matters connected therewith and incidental thereto. This Act establishes the Kenya Maritime Authority as a body corporate. The Authority shall be the successor to the Kenya Maritime Authority existing immediately before the commencement of this Act. The principal objects of the Authority are to regulate, coordinate and oversee maritime affairs. The Authority shall, among other things: administer and enforce the provisions of the Merchant Shipping Act, 2009; discharge flag State and port State responsibilities in an efficient and effective manner.

#### **12.4.9 KENYA WILDLIFE ACT 2014**

The conservation fraternity in Kenya was elated when the Wildlife Conservation and Management Act 2013 was finally passed with WWF having coordinated the input of environmental civil society organizations views. This law was a culmination of efforts spanning over 15 years' to get a comprehensive and all-inclusive legislation in place.

The Wildlife Act came into force on January 10th 2014, having received Presidential assent on 24th December 2013. This new law is aimed at improving the protection, conservation, sustainable use and management of the country's wildlife resources. Consequently, the law was drafted with a view to addressing the loss of wildlife, which had exacerbated despite high profile conservation efforts, by various institutions. This loss in wildlife resources was attributed in varying proportions to a combination of policy, institutional and market failures.

This new law provides for restructured governance of wildlife resources by separating the regulation and management functions from those of research. Furthermore, new structures have been established at the County level in accordance with the Constitution of Kenya 2010. The Act also sets out important principles that include:

Effective public participation in the management of wildlife resources, thereby setting a basis for the strengthening of community based natural resources management.

Use of the ecosystem approach in the management of wildlife

Equitable sharing of benefits accruing from wildlife resources by Kenyans

Sustainable utilization

Recognition and encouragement of wildlife conservation and management as a form of land use on public, community and private land. It further gives every person the right to practice wildlife conservation as a land use and states that benefits of wildlife conservation shall be derived by the land users in order to offset cost and to ensure the value and management of wildlife do not decline.

The perennial challenge of poaching and wildlife habitat destruction has been looked into with this law setting out stiffer fines and punishments for offenders (a move that is expected to discourage would be offenders)

### **13.0 COMPLIANCE TO THE RELEVANT REGULATIONS**

The proponent demonstrates legal compliance, but not limited to, in the following ways:

- Carrying out Environmental and Social Impact Assessment study before commencement of the project as required by Environmental (Impact and Audit) regulations, 2003.
- Implement and adhere to all relevant statutory and regulatory requirements
- He has also put measures in place to control noise pollution by, for example,
  - only operating between 0800hrs to 17hrs on week days using well maintained machines during constructions and normal operations in the use phase. This is a requirement by the Noise and Excessive Vibration Control Act 2009.
  - Is committed to sensitizing the workers and visitors on noise pollution even in the operational phase.
- The design (plan) of the building has been submitted to Mombasa County government as required by County governments Act 2012 and Physical planning Act
- He will also use dust screens to prevent air pollution and exercise careful handling of cement packaging materials.
- Use the recommended construction materials by the relevant authorities
- He shall also visibly put a signboard indicating the project
- Ensure adherence to Covid-19 pandemic containment measures



- Has initiated the process of changing land use from residential single dwelling to commercial use

#### 14.0 PRIORITISATION OF ON-GOING CONCERNS OF THE PROJECT

This is a new project and he has put environmental management measures in place. However, it is momentous to ensure continual improvement. Under all operations and activities where there are environmental concerns, actions have been recommended in the ESMP below and the proponent should address the issues and close the actions.

#### 15.0 POTENTIAL NEGATIVE IMPACTS AND MITIGATION MEASURES

Aspect Number	Possible Impacts	Details	Mitigation measures
1	Occupational health and safety	Construction phase: The residents and workers may be exposed to dust and noise	<ul style="list-style-type: none"> <li>• Provide the necessary PPEs</li> <li>• Switch of the machines when not in operation</li> <li>• Avoid working at night</li> <li>• Create awareness on safety and health of the employees</li> <li>• Provide adequate First Aid Facilities</li> </ul>
2	Injuries/accidents to workers.	Workers or the residents may be injured by the materials or equipment working on the site.	<ul style="list-style-type: none"> <li>• Erect a perimeter wall to keep off unauthorized persons in the site.</li> <li>• Provide PPEs and ensure that they always worn while workers are on site</li> <li>• Ensure that only trained workers run the machines</li> <li>• Provide First Aid facilities.</li> <li>• Handle materials and machines/ equipment carefully</li> <li>• Cover and secure</li> </ul>

			concrete water tanks if any properly and tightly
3	Garbage/waste in operation phase	There will be garbage generated from the building during operational phase.	put garbage or waste in the appropriate bins or bags until the time they are collected by a licensed garbage collector Sanitize workers and visitors on waste generation and management e.g. through posters, brochures e.t.c
4	Waste water disposal	There will be wastewater generation during the operational phase	The wastewater shall be directed to the biodigester
5	Insecurity in the plot	If insecurity is not addressed the workers and visitors and neighbours may be exposed to insecurity	-Provide adequate security measures such as lighting at night Having 24 hours CCTV surveillance  -Erect a perimeter wall and high to keep away thugs and wrong doers -hire a guard to man the gate and premises on 24hrs basis -Take copies of ID cards of the temporary workers on site during construction
6	Air pollution	<ul style="list-style-type: none"> <li>Air may be polluted during construction phase due to the engines doing the work and dust generated either from emptying of materials such as cement or while constructing higher floors</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that the engines are well maintained</li> <li>Only operate them when needed</li> <li>Handle materials particularly the cement with care</li> <li>Put dust screens to prevent dust.</li> <li>Adhere to the EMCA Air regulations 2014</li> </ul>

7	Environmental conservation	<ul style="list-style-type: none"> <li>• Dumping of construction materials on the roadside</li> <li>• During the use phase of the project there could be failure of environmental conservation</li> <li>• Improper garbage management and collection</li> <li>• Failure to harvest rain water by use of gutters can cause soil erosion</li> </ul>	<p>Strictly no dumping of construction materials on the road side</p> <p>Sensitize the workers and visitors on sound environment such as proper waste management</p> <p>Ensure that garbage is kept in the appropriate bags or bins and disposed appropriately at the designated dumpsites by a licensed NEMA waste collector</p> <p>Harvest rain water using gutters or any other modern technology and use it for other uses such watering plants in the compound during dry seasons or use it for washing clothes and vehicles to supplement the ground surface water</p>
8	Noise	There will be noise from the machines used for construction.	<ul style="list-style-type: none"> <li>• Machines will be run only when necessary and within working hours (8-5pm)</li> <li>• Use well maintained</li> </ul>

			<p>machines</p> <ul style="list-style-type: none"> <li>• Sensitize workers and visitors during occupancy</li> </ul>
9	Accident.	Overspeeding of transport vehicles on the feeder road leading to the site which can cause accidents especially to children	<ul style="list-style-type: none"> <li>• <b>Strictly</b> warn the drivers to be very careful while driving on the road.</li> <li>• <b>Only licenced</b> drivers should drive vehicles</li> </ul>
10	Covid 19 pandemic	Spread of the pandemic prevention	All Covid19 containment measures <b>must</b> be observed

### 16.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Item No.	CONCERNS	CORRECTIVE ACTION(s)	Costs (ksh)	RESPONSIBLE	Expected Completion Date.
1	<p><b>Solid waste:</b></p> <p><b>1.During construction</b></p> <p>Excavated earth</p> <p>Pieces of stones generated during shaping of stones</p> <p>-Scrap metals</p> <p>-Left over materials used for</p>	<p>Dispose appropriately in nema designated areas</p> <p>Use it to make the compound ground or in any other project</p> <p>Sell to approved scrap metal dealers</p> <p>The proponent shall ensure that the materials left over at</p>	<p>variable</p> <p>variable</p>	<p>Proponent/ Contractor</p> <p>Proponent</p> <p>Proponent/ Contractor</p>	<p>12 months</p> <p>continuous</p> <p>Continuous</p>

	construction	the completion of the project are removed from the site and used in other projects Only order construction materials that you are going to use to avoid leftover materials after construction	Nil	Proponent/ Contractor	Continuous
	PVC pipes and polythene materials	Sell or give to licenced NEMA plastic waste recyclers	Nil	Proponent and Hotel management	Continuous
	<b>2. Operational phase</b>				
	-Garbage/waste including office wastes	To be segregated and put in appropriate bags awaiting disposal by licensed NEMA waste collector. Sensitize workers and visitors on minimal waste generation and sound waste management Comply with EMCA waste management regulations	20,000  Variable	Proponent and Hotel management	Continuous
	-Liquid waste	To be directed to the biodigester through traps	1,000,000	Proponent and Hotel management	Continuous
3	Vegetation/bushes in the compound	plant environmentally friendly trees or vegetation in the front part of the plot	20,000	proponent	any time that he wishes (either during or after construction)
4	Noise pollution	-Switch off the engines such as concrete mixers when not in use  -only use well maintained equipment during construction - Operate during normal working hours i.e. 0800hrs-1700hrs on week days	Nil  Nil	Proponent/ Contractor/ Foreman  Contractor  Proponent/ Contractor  Proponent/	Continuous during construction phase

		<p>-Avoid transport of construction materials at night</p> <p>-sensitize workers and visitors on noise pollution especially from the music systems and TVs. This is effectively achieved through visitors' induction and meetings with the workers</p>	<p>Nil</p> <p>NIL</p>	<p>Contractor</p> <p>Proponent/ Contractor</p>	<p>Continuous during construction and operational phases</p>
5	Water usage	<p>-Avoid water wastage during construction and operational phases. Sensitize the workers and visitors</p> <p>-ensure that there are no leaking pipes to avoid water wastage</p> <p>-harvest water from the roof during rainy seasons by use of gutters or any other method Recycle water where necessary</p>	<p>Nil</p> <p>variable</p> <p>50,000</p>	<p>contractor/ proponent</p> <p>Proponent</p> <p>Proponent</p>	<p>Continuous</p> <p>continuous</p> <p>continuous</p>
6	Air quality-Air emissions from the engines such as transport vehicles. When emptying materials such as cement from their containers	<p>-Switch off the engines while not in operation</p> <p>-Ensure proper maintenance of the vehicles</p> <p>-Sensitize workers on site on sound environmental management</p> <p>-carefully empty the cement to avoid dust generation</p> <p>-Put dust screens around the building during construction</p> <p>-Sprinkle water on the site during the construction phase to minimize dust</p>	<p>Nil</p> <p>Variable</p> <p>Nil</p> <p>Nil</p> <p>50,000</p>	<p>Proponent/ foreman/ contractor</p>	<p>Continuous</p>
7	Soil and geological impacts that is soil erosion, contamination and instability The shoreline has been eroded by the ocean	<p>-Strictly ensure that the proposed project does not cause soil erosion</p> <p>- Plant grass or other vegetation in the compound</p> <p>-construct an environmentally friendly coastal amor prevent</p>	<p>Nil</p> <p>2,000,000</p>	<p>Proponent/ Contractor</p> <p>Proponent</p>	<p>Once</p> <p>once</p>

		avoid further erosion Adhere to the WRA rules 2007 and shoreline management strategy for Kenya 2010			
8	Electricity usage	-Switch off lights when not in use. -Put off electrical appliances when not in use -use energy saving bulbs	Nil  100,000	tenants/ domestic workers	continuous
9	Personal protective equipment (PPE)	Ensure that all the employees ( contractor employees on site) wear the right PPEs all the time	20,000	Proponent/ foreman/ contractor	Continuous during construction phase
10	construction materials	Ensure use of standard and recommended construction materials for strong building.	300,000, 000	proponent	Continuous during construction phase 12 months
11	Injury to people not working at the site	Put a signboard to notify people of the project. Protect the unsafe areas with safety tapes	1,000	Proponent	2 days
12	Emergency exits	Clearly communicate the emergency exits (doors and gate(s) and assembly point(s)	10,000	Proponent	All the time
13	First Aid Box	-Provide a First Aid boxes with adequate materials and a list of the contents and stick it on it (during construction). First aid to be administered by a qualified first aider only -Replenish the items if needed Train first aiders and refresh them annually	6,000  Variable depending on the number of employees and visitors	Contractor/ proponent  Proponent	On need basis

14	Fire Extinguisher/fire hydrants	-The appropriate fire extinguishers shall be easily accessible all the time and inspected regularly (quarterly or after every six (6) months alongside the hydrants) -some workers should be trained as fire marshals for emergency preparedness	50,000  40,000	Proponent/ management	Continuous
15	Fire safety policy	Have and effectively communicate the fire safety policy to all people on site	5000	Proponent	Continuous
16	Fire Evacuation plan	Effectively communicate and conspicuously display the fire evacuation plan with emergency numbers	1000	Proponent	Continuous
17	Occupation hazards and public health	-Implement sound solid and liquid wastes management to ensure a safe and healthy living for the workers and visitors as well as the neighbours  Install and effectively manage the biodigester	100,000  1,000,000	Proponent  Proponent	Continuous when need be  Construction phase-One month



18	OHS impacts	Wear safety harnesses while working at height always ensure safety first	40,000	Contractor	During construction
		Adhere to OSHA 2007 requirements on safety and health			
		Have mobile toilets for construction workers	100,000	Proponent	During construction
		Register the site as a workplace with DOSHS	10,000	Proponent	Operation phase
		Ensure proper use of PPEs all the time			
		Have safety signages and sensitize employees on their own safety and that of others			
		Conduct OHS audits, Fire safety audit, Noise level measurement survey	100,000	Proponent	Continuous in operational phase
19	OHS policy	Have and effectively communicate the OHS policy to all people on site	5000	Proponent	Continuous
20	OHS Abstract	Have and effectively communicate the OHS abstract to all people on site	5000	Proponent	Continuous
21	Covid 19 pandemic	All Covid19 containment measures <u>must</u> be observed	Nil	Proponent/ Foreman/ Contactor	Continuous

22	Environmental Conservation		Nil	Proponent/ Foreman/ Contactor	Continuous
	-Dumping of construction materials on the roadside	Strictly no dumping of construction materials on the road side or on open/ undeveloped land	Nil		
		Sensitize the workers and visitors on sound environment such as proper waste management	Nil		
	Poor garbage management	Ensure that garbage is kept in the appropriate bags or containers and disposed appropriately at the designated dumpsites	5000	Proponent	continuous
	Failure to harvest rain water	Harvest rain water using gutters and use it for other uses such watering plants in the compound during dry seasons or use it for washing clothes and vehicles to supplement the ground surface water	100000	Proponent	During construction and operational phase if need be

23	Water quality degradation. This may be caused during the site excavation and other civil works leading to soil erosion and sediments load and suspension of sediments in the ocean.	Let excavation be done by qualified personnel Put in place water quality monitoring plan. Ensure that the jetty construction is done by qualified personnel	1,000,000	Proponent/ Contractor	During construction phase
24	Impacts on marine biodiversity due to piling works. This may cause disturbance on the seabed. Fuels, oil and grease discharges have negative impacts on the marine biodiversity. Solids generated during construction phase will also affect it	-Contract a qualified contractor to do the hotel construction who has a better understanding of impacts on the marine biodiversity -Ensure that no solids go to the ocean during construction -Strictly prevent oil/grease spillages -Manage the used oil effectively through a licensed NEMA waste oil handler	10,000,000	Proponent/ Contractor	During construction
25	Effluent discharge	Effectively and professionally install an adequate biodigester that can efficiently handle the effluent generated Periodically do effluent analysis and obtain effluent discharge license (EDL) as per EMCA water regulations Install effective oil and grease traps	1,000,000	Proponent/ Contractor	During construction  In operation

		Ensure that all the vessels docking at the jetty fully comply with all the relevant laws i.e. EMCA Cap 387 and Maritime Authority Act 2012		Proponent	phase
26	Impacts on physical environment due to the project site preparation	Plant environmentally friendly vegetation in the and around the compound	20,000	Proponent/ Contractor	During construction and operational phases
27	Obstruction of the feeder road to the site-Traffic	Manage the traffic to and from the site by having a traffic management plan Sensitize the drivers to and from the site on obstruction to avoid inconveniencing the other people Comply with all the requirements of the Traffic Act 2016	nil	Proponent/ Contractor	During construction and operational phases
28	Poor workmanship during construction that can lead to collapsing of the building and cause deaths and injuries to people within or outside the site	Ensure that all the civil works are done and inspected by qualified personnel all the time	Nil	Proponent/ Contractor	Construction phase-12 months
29	Environmental policy	Have and effectively communicate the Environmental policy to all people on site	2000	Proponent	Continuous
30	Shoreline erosion	Prevent the shoreline erosion by putting appropriate mitigation measures e.g. coastal armor and avoid encroachment into the ocean	500000	Proponent	Continuous but mainly during construction
31	Jetty-Oil and grease spillage from jetty	Oil change and machinery servicing shall be done onshore Ensure no spillage of the oil. Train and sensitize staff all the	1,000,000	Proponent	Continuous

	operations	<p>time</p> <p>Report and document oil spillage(s) and corrective action(s) taken</p> <p>Any used oil shall be disposed or reused or recycled by a nema licensed waste collector</p> <p>All vessels docking at the jetty shall comply with the provisions of the EMCA CAP 387 of the laws of Kenya and Kenya Maritime Authority Act 2012</p> <p>Ensure compliance with the EMCA waste management regulations 2006</p>			
32	Security within and around the hotel	<p>Ensure that you have manning of the premises 24 hours by security guards and CCTV</p> <p>Have security lights inside and outside the hotel at night always</p> <p>Put an electric fence on the boundary wall</p>	200000	Proponent	Continuous

**A SUMMARY OF THE POTENTIAL IMPACTS AND MITIGATION MEASURES OF THE PROPOSED PROJECT**

<b>IMPACTS</b>	<b>PROPOSED MITIGATION MEASURES</b>
<b>Change of land use</b>	<ul style="list-style-type: none"> <li>Obtain the change of use of the parcel of the land for the proposed project from residential single dwelling to commercial use (hotel and restaurant) from Mombasa County government and ministry of lands as per Physical and Land use Planning Act No.13 of 2019</li> </ul>
<b>SOLID WASTES GENERATION AND MANAGEMENT</b>	
Excavated earth from site preparation	<ul style="list-style-type: none"> <li>Dispose the waste appropriately through a NEMA licensed waste collector</li> <li>Comply with all the requirements of EMCA waste management regulations 2006</li> </ul>
Pieces of stones generated during shaping of stones	Use it to make the compound or in any other project

Scrap metals	Sell to approved scrap metal dealers
Left over materials used for construction	<ul style="list-style-type: none"> <li>• Segregate waste in a designated area and dispose appropriately through a NEMA licensed waste collector</li> <li>• The proponent shall ensure that the materials left over at the completion of the project are removed from the site and used in other projects</li> <li>• Only order construction materials that you are going to use to avoid leftover materials after construction</li> <li>• Comply with all the requirements of EMCA waste management regulations 2006</li> </ul>
PVC pipes and polythene materials	Sell or give to licenced NEMA licensed plastic waste recyclers
Garbage/waste	<ul style="list-style-type: none"> <li>• Segregate and put in appropriate bags awaiting disposal by licensed NEMA waste collector.</li> <li>• Sensitize workers and visitors on minimal waste generation and sound waste management</li> <li>• No dumping of waste on open/undeveloped land or on the road sides Strictly no dumping of construction materials on the road side or on open/undeveloped land</li> <li>• Contract a waste collector who is licensed by nema</li> <li>• Comply with all the requirements of EMCA waste management regulations 2006</li> </ul>
Liquid waste	<ul style="list-style-type: none"> <li>• To be directed to the biodigester through traps for treatment before discharge as per EMCA water regulations</li> <li>• Provide portable toilets from NEMA licenced contractor for the workers and people on site</li> <li>• Apply and obtain the effluent discharge licence</li> <li>• Comply with all the requirements of EMCA water quality regulations 2006</li> </ul>
Air pollution	<ul style="list-style-type: none"> <li>• Put quality dust screens around the building during construction to contain dust generated during construction</li> <li>• Empty cement bags carefully to minimize dust</li> <li>• Sprinkle water on the ground during excavation and during construction to minimize dust</li> <li>• Provide appropriate dust masks to people on site</li> <li>• Use well maintained machines and switch them off when not in use</li> <li>• Strictly adhere to all the EMCA Air regulations 2014</li> </ul>
Vegetation in the compound will be cleared to allow construction	plant environmentally friendly trees or vegetation in the compound and front part of the premises
Shoreline erosion. May lead water degradation due to sedimentation of the construction wastes (solids)	<ul style="list-style-type: none"> <li>• Construct a coastal armor to prevent the erosion of the shoreline</li> <li>• Adhere to the WRA rules 2007</li> <li>• Adhere to the requirements of Shoreline Management Strategy for Kenya</li> </ul>

and suspensions that may affect the ocean	<ul style="list-style-type: none"> <li>• Avoid encroachment of the shoreline</li> <li>• Take utmost care during the site excavation and ensure that it is done by qualified personnel and during the low tide</li> <li>• Put in place water quality monitoring plan.</li> <li>• Ensure that the jetty construction is done by qualified personnel</li> </ul>
Noise pollution	<ul style="list-style-type: none"> <li>• Switch off the engines such as concrete mixers when not in use</li> <li>• only use well maintained equipment during construction</li> <li>• Operate during normal working hours i.e. 0800hrs-1700hrs on week days</li> <li>• Avoid transport of construction materials at night</li> <li>• sensitize workers and visitors on noise pollution especially from the music systems and TVs. This is effectively achieved through visitors' induction and meetings with the workers and posters</li> <li>• Provide earmuffs to workers and people on site in the construction phase</li> <li>• Sensitize the drivers to and from the site creating unnecessary noise such as hooting</li> <li>• Adhere to all the requirements of the Noise and Excessive Vibration Pollution (control) regulations 2009</li> </ul>
Water usage and effluent generation	<ul style="list-style-type: none"> <li>• Avoid water wastage during construction and operational phases. Sensitize the workers and visitors</li> <li>• Put "Close tap after use" signages next to water taps</li> <li>• ensure that there are no leaking pipes to avoid water wastage</li> <li>• harvest water from any roof during rainy seasons by use of gutters or any other method to supplement ground water during dry seasons</li> <li>• Comply with Water Act 2016</li> <li>• Recycle water where necessary</li> <li>• Conduct effluent analysis and obtain the effluent discharge licence</li> <li>• Comply with EMCA water quality regulations</li> </ul>
Electricity usage	<ul style="list-style-type: none"> <li>• Put signages next to power sources to switch off lights when not in use.</li> <li>• Put off electrical appliances when not in use</li> <li>• use energy saving bulbs</li> <li>• Where roofing will be done ensure use of sky lighters for provision of more lights to save the electrical energy during day</li> </ul>
Personal protective equipment (PPE)	Ensure that all the employees (contractor employees on site) wear the right PPEs all the time
Poor workmanship during construction that can lead to collapsing of the building and cause deaths and injuries to people within or outside the site	<p>This can lead to collapsing of the building and cause deaths and injuries to people within or outside the site</p> <p>Ensure that all the civil works are done and inspected by qualified personnel all the time and records maintained</p>

Injury to people not working at the site	Put a visible and legible signboard to notify people of the project to keep off people who are not working on the site
Fire risks and emergency preparedness	<ul style="list-style-type: none"> <li>• Clearly communicate the emergency exits (doors and gate(s))</li> <li>• No obstruction of the emergency exits</li> <li>• Communicate and conspicuously display the Fire evacuation plan</li> <li>• Put "No smoking signages" where needed</li> <li>• Put warning fire signages such as "Flammable materials" where needed and store them safely</li> <li>• Adhere to the requirements of the OHS Act 2007</li> <li>• Have designated assembly point(s) in the premises</li> <li>• Inspect and properly maintain electrical installations by qualified personnel</li> <li>• Have adequate number of trained fire marshals</li> <li>• Install a fire alarm system</li> <li>• Conduct fire drills periodically</li> <li>• Comply with all the provisions of the OHS Act 2007</li> <li>• Conduct fire safety audits annually</li> </ul>
First Aid Boxes	<ul style="list-style-type: none"> <li>• Provide First Aid boxes with adequate materials and a list of the contents and stick it on it (during construction).</li> <li>• First aid to be administered by a qualified first aider only</li> <li>• Replenish the items if needed</li> <li>• Train enough first aiders and refresh them annually</li> </ul>
Fire Extinguisher/Fire hydrants	<ul style="list-style-type: none"> <li>• Provide adequate and appropriate fire extinguishers that shall be easily accessible all the time and never be obstructed</li> <li>• Have them inspected regularly (quarterly or after every six (6) months).</li> <li>• some workers should be trained as fire marshals and undergo refresher trainings annually</li> <li>• Ensure that the fire hydrants have water under enough pressure all the time and ensure that they are inspected alongside the fire extinguishers</li> </ul>
Occupation hazards and public health	<ul style="list-style-type: none"> <li>• Implement sound solid and liquid wastes management to ensure a safe and healthy living for the workers and visitors as well as the neighbours</li> <li>• Install and effectively manage the biodigester</li> <li>• Strictly avoid air pollution</li> </ul>
OHS impacts	<ul style="list-style-type: none"> <li>• Wear safety harnesses while working at height always ensure safety first</li> <li>• Adhere to OSHA 2007 requirements on safety and health</li> <li>• Have mobile toilets for construction workers and others at site</li> <li>• Register the site as a workplace with DOSHS</li> <li>• Provide and ensure proper use of PPEs all the time</li> </ul>



	<ul style="list-style-type: none"> <li>• Have safety signages and sensitize employees on their own safety and that of others</li> <li>• Conduct OHS audits, Fire safety audit, Noise level measurement survey annually</li> <li>• Conduct OHS trainings on staff and refresh them periodically</li> <li>• Have and communicate safety signages and boards on site during construction. These provides information on safety measures and appropriate PPEs to be used</li> <li>• Record injuries in the general register and report any major accidents and deaths to DOHSH within 24hours after the occurrence</li> <li>• Implement preventive and corrective measures to prevent occurrences and recurrences of incidents respectively</li> <li>• Document, implement and effectively communicate OHS policy to all staff and residents</li> <li>• Have safety instructions for mooring, embarking and disembarking</li> <li>• Have buoys and navigational lights at the jetty</li> </ul>
Covid 19 pandemic	<p>All Covid19 containment measures <u>must</u> be strictly observed</p> <ul style="list-style-type: none"> <li>• Ensure 1.5m social distancing</li> <li>• Clean hands with soap with running water or use sanitizers</li> <li>• No shaking of hands or hugging</li> <li>• Wearing of face masks always</li> <li>• Infected people to isolate themselves and keep off the site on medication</li> <li>• Encouraging people to be vaccinated against the disease</li> <li>• Reporting of the cases as soon as detected or suspected o the health authority</li> <li>• Have and effectively communicate Covid-19 signages to all</li> </ul>

Impacts on marine biodiversity due to piling works.	<ul style="list-style-type: none"> <li>• Contract a qualified contractor with a better understanding of impacts on the marine biodiversity</li> <li>• Ensure that no solids go to the ocean during construction</li> <li>• Strictly prevent oil/grease spillages with help of oil and grease traps</li> <li>• Manage the used oil effectively through a licensed NEMA waste oil handler</li> <li>• Contain oil in proper oil containment containers</li> <li>• Sensitize the workers and drivers on used oil management including preventing spillages</li> <li>• Manage the biodigester effectively and efficiently to ensure effective treatment of the effluent before discharge</li> </ul>
Effluent discharge	<ul style="list-style-type: none"> <li>• Effectively and professionally install an adequate biodigester that can efficiently handle the effluent generated</li> <li>• Periodically do effluent analysis and obtain effluent discharge license (EDL) as per EMCA water regulations</li> <li>• Install effective oil and grease traps</li> <li>• Ensure that all the vessels docking at the jetty fully comply with all the relevant laws i.e. EMCA Cap 387 and Maritime Authority Act 2012</li> </ul>
Impacts on physical environment due to the project site preparation	<ul style="list-style-type: none"> <li>• Plant environmentally friendly vegetation in the and around the compound</li> <li>• Ensure that you properly compact the soil pave the open areas of the compound</li> </ul>
Traffic management	<ul style="list-style-type: none"> <li>• Manage the traffic to and from the site by having a traffic management plan</li> <li>• Sensitize the drivers to and from the site on obstruction to avoid inconveniencing the other people</li> <li>• Comply with all the requirements of the Traffic Act 2016</li> <li>• Avoid obstruction of the feeder road to the site to avoid inconveniencing the others within the area at all times</li> <li>• Conspicuously erect a signboard to warn people of the frequent road usage by heavy vehicles and trucks</li> </ul>
Jetty-Oil and grease spillage from jetty operations	<ul style="list-style-type: none"> <li>• Oil change and machinery servicing shall be done onshore</li> <li>• Ensure no spillage of the oil. Train and sensitize staff all the time</li> <li>• Report and document oil spillage(s) and corrective action(s) taken</li> <li>• Any used oil shall be disposed or reused or recycled by a nema licensed waste collector</li> <li>• All vessels docking at the jetty shall comply with the provisions of the EMCA CAP 387 of the laws of Kenya and Kenya Maritime Authority Act 2012</li> <li>• Ensure compliance with the EMCA waste management regulations 2006</li> </ul>
Security within and around the hotel	<ul style="list-style-type: none"> <li>• Ensure that you have manning of the premises 24 hours by trained security guards and CCTV</li> <li>• Have security lights inside and outside the hotel at night always</li> <li>• Install sound alarm systems and conduct drill as per OSHA Act 2007</li> <li>• Erect a high enough perimeter wall</li> <li>• Put an electric fence round the boundary wall</li> </ul>

Environmental policy	Establish, implement and effectively communicate environmental policy to conserve and protect and continually improve on the environment to ensure high environmental performance
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**17.0 INTERNAL MECHANISMS THAT THE PROPONENT HAS PUT OR SHALL PUT IN PLACE TO MITIGATE ACTIVITIES THAT HAVE NEGATIVE ENVIRONMENTAL IMPACTS AND ENSURE EMPLOYEES’ AND VISITORS’ HEALTH AND SAFETY**

- Provide the necessary personal protective equipment for the employees and ensure that they wear them while at work in the construction phase all the time
- Installation of appropriate fire extinguishers which is inspected regularly as legally required.
- Proper waste segregation and disposal
- Use the available resources such as water and electrical power efficiently
- Having First Aid Boxes with adequate materials during the construction and operational phases.
- Ensuring that there are no leaking pipes to avoid water wastage.
- Selling of scrap to licensed metal dealers as a means of disposal from the site after completion of the project or using them for future projects.
- Dumping of construction material at the designated sites and not on the roadsides or open plots.
- Water harvesting via gutters or other means after completion of the building
- Lighting of the building and the compound at night for security reasons using energy-saving bulbs or solar energy
- Having a high perimeter wall for security reasons for employees and visitors in the hotel
- Strictly implement, enforce and adhere to Covid-19 pandemic containment measures as issued by the ministry of health all the time in all the phases of the project
- Proper use of the biodigester to treat the effluent efficiently before disposal
- Sensitizing everyone on waste generation
- Sensitizing everyone on noise pollution in construction and operational phases
- Proper workmanship in constructing the building to avoid collapsing and cause deaths and injuries to people within or outside the site

## **18.0 MEASURES UNDER THE ENVIRONMENTAL MANAGEMENT TO ENSURE THAT IMPLEMENTATION IS OF ACCEPTABLE STANDARDS**

The proponent is committed to environmental conservation and protection as provided in EMCA to ensure continuous high environmental performance. In this respect, he has or shall do the following:

- (i) Ensure that Environmental and Social Management Plan is fully and effectively implemented and reviewed all the time
- (ii) ESIA is carried out and environmental concerns addressed adequately to protect and conserve the environment for future generations
- (iii) Conduct annual statutory audits and implementing all the recommendations made thereof all the time
- (iv) All the people working on site (employees and contractors) at any one given time shall be effectively informed about the necessary instructions in regard to security, Safety, health and environmental conservation and protection.
- (v) All the potential negative impacts are identified and mitigation measures taken adequately.
- (vi) Adhering to all relevant regulatory and statutory requirements.
- (vii) Sensitizing employees and visitors on environmental conservation and protection during regular meetings and induction process respectively so that it can become a culture.
- (viii) Full implementation, enforcement and adherence to Covid-19 pandemic MOH containment guidelines all the time in all the phases of the proposed project
- (ix) Ensuring good neighborhood all the time
- (x) Use of qualified personnel to implement and maintain the project in operational phase

## **19.0 DECOMMISSIONING PLAN**

It is highly recommended that the proponent puts in place rehabilitation measures that will be undertaken in case it opts to demolish the building. The objective of this process is to leave the site in an acceptable and utilizable state for future generations' needs. In this respect the table below outlines the basic principles, not limited, that need to be adhered to during the process.

ITEM No.	ACTIVITY	ACTION REQUIRED	RESPONSIBLE PARTY	FREQUENCY
1	Demolition plan	Lay down a clear demolition plan of the building and must seek approval from NEMA	Proponent/Contractor/professionals	Once
2	Removal of materials from the site and disposal	It should be done in an appropriate manner that does not affect the environment within and outside the site and health and safety of neighbors. The materials can also be used for other projects or sold as scrap metal dealers in case of metallic materials. Shall use approved agents and adherence to legislation	Proponent/Approved decommissioner such as Engineers	Once
3	Rehabilitation	The area under rehabilitation or decommissioning should be demarcated with the danger tape to prevent human and vehicular access. It should also be left in a state that it is useful for future generation. Plant trees and or other environmentally friendly vegetations if possible	Approved decommissioner such as Engineers	Once
4	Monitoring of the premises after decommissioning	Post decommissioning monitoring	NEMA	Continuous

## 20.0 CONSULTATION AND PUBLIC PARTICIPATION

During this exercise the potentially impacted persons in the area were intensively consulted and asked to give their opinions i.e., positive impacts and negative impacts. Fifty (50) respondents were involved where:

1. Thirteen (13) participants accepted the project citing the benefits they expect to leap from the project as shown in the attached CPP forms. They also raised concerns which have been adequately addressed in the EMP above
2. One (1) participant objected the project
3. Thirty-six (36) participants have neither accepted or objected the project for the reason that they would like to be involved in a public meeting where the project will be discussed fully so that to help them make a decision to support or object it

## 21.0 BUDGET FOR THE PROJECT

The project is expected to cost Ksh 100,000,000.

Breakdown of the budget (in Ksh)

(i) Materials/installations-----	290,000,000
(ii) Labour and others-----	<u>10,000,000</u>
<b>Total-----</b>	<b><u>300,000,000</u></b>

## RECOMMEDATIONS

Upon **dispute resolutions** and public meeting(s) between neighbours and the proponent we recommend the following

1. The project to be licensed and commenced so as to benefit the investor, neighbours and other stakeholders
2. To generate income for the government through land rates collection
3. It has no major environmental impacts since it is already an inhabited area as can be seen from the photos taken and mitigation measures to address the identified ones have been put in place.
4. Provide more hotels particularly the ever-growing tourism demand
5. In-full implementation of the ESMP recommendations
6. All mentioned potential impacts on safety and health to be implemented fully

7. Develop the plot and eradicate hiding place for thugs
8. Eradicate breeding place for mosquitos preventing malaria
9. Eradicate dumping of waste on undeveloped land which poses health hazards to public
10. Prevent social problems such as grabbing of undeveloped land leading addition of cases in our courts unnecessarily

### **REFERENCES**

Kenya gazette supplement Acts 2000, EMCA No. 8 of 1999) government printer, Nairobi

Kenya gazette supplement Acts Land planning Act (cap 303) government printer, Nairobi

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**CONSULTANCY FIRM:** Ling International

**REGISTRATION NUMBER:** 2233

**NAME OF THE LEAD EXPERT:** Kandau Mang'urio

**REGISTRATION NUMBER:** 1780

**SIGNATURE:**

**DATE:** 6<sup>TH</sup> December 2021– 10<sup>TH</sup> January 2022

**NAME OF THE PROPONENT:** Thabiti Capital Limited

**CONTACT PERSON:** Raphael Wanjohi Ngera

**SIGNATURE:**

**DATE:** 6<sup>TH</sup> December 2021– 10<sup>TH</sup> January 2022





