

EIA REPORT

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Permit No: CT005390120

ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL PERMIT **(ENVIRONMENTAL IMPACT ASSESSMENT)**

This is to certify that

Authorisation has been given to **KHI GHANA 01 LIMITED**
to commence and pursue operations as per attached schedule

Date Issued: **NOVEMBER 13, 2006**

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J. A. ALLOTEY
EXECUTIVE DIRECTOR

NB: This permit is only valid with the Seal of the Environmental
Protection Agency.

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1.0 INTRODUCTION

Circa Ghana's post-independence era, the Ambassador Hotel was the flagship of the erstwhile State Hotels Corporation, and was one of the leading hotels in West Africa. It hosted many dignitaries, especially during Organization of African Unity (OAU) summits and other international conferences that were held in Ghana. Unfortunately, the economic stagnation and decay that hit Ghana in the 1970s and 1980s, led to the collapse of the magnificent hotel. It is located within the central business district of Accra, the capital of Ghana.

Under its Economic Recovery Programme (ERP), the government of Ghana set out to divest itself of non-performing assets, including the Ambassador Hotel and other state hotels. It was, thus, put on the divestiture list and was purchased by Kingdom Hotels Investment in 2005, after the physical structures had been left to the vagaries of the weather for decades.

Under its Strategic Implementation Plan for the Tourism sector (2003 -2007), the Ministry of Tourism and Diasporan Relations plans to make Ghana the preferred tourism destination in Africa, and make tourism the third largest employer after agriculture and retailing, by 2007. It is against this background that the proponents of this project intend to construct and operate a 337-room five star hotel facility with ultra-modern facilities that match international hotel standards, in addition to 34 serviced apartments, and high end retail and office facilities.

The proposed hotel project would be named Mövenpick Ambassador Hotel.

1.1 Scope of Study

ENVI-LOGICA Consult, (Environmental and Engineering Consultants) has been engaged by KHI Ghana 01 Limited to undertake the EIA assignment, having successfully prepared the Preliminary Environmental Report that secured the mandatory EPA Permit for the demolition phase.

The proposed Terms of Reference for the EIA that was submitted as an annex of the Scoping report submitted to the EPA has been accepted, and forms the basis of this Environmental Impact Statement (EIS).

The EIS is presented in a format prescribed by the Ghana EIA Procedures. This chapter presents a brief background of the project, its objectives and justifies the need for the project.

It also discusses the various legal, administrative and policy issues that would affect the implementation of the project.

Chapter 2 describes the various project proposed activities to be carried out, giving sufficient details on the aspects that have potential environmental impact.

Chapter 3 is a description of the baseline environmental conditions, covering both the bio-physical and socio-economic/cultural components. The significant environmental impacts arising from the various project activities are discussed in Chapter 4, and Chapter 5 outlines a monitoring plan to be used to verify the predicted impacts and to ensure compliance with recommended mitigation procedures.

Chapter 6 presents a discussion of the consideration of the various project alternatives. The Provisional Environmental Management Plan is covered in Chapter 7.

The EIA process involved consultations with various stakeholders including the immediate neighbours of the proposed project, some practitioners in the hospitality industry and regulatory agencies. Their inputs have been incorporated in all the Chapters, and have been summarised in Chapter 8.

Chapter 9 concludes the report with recommendations.

1.2 Brief Background of the Proponent

KHI Ghana 01 Limited is a Ghanaian company owned by Kingdom Hotel Investment (KHI) a Saudi-based investment organization with particular focus on hotels and hospitality facilities. KHI has currently leased the 65 898m² square metre plot on which stood the ruins of the former Ambassador Hotel. Having demolished the old structure, KHI intends to build a new 337-room, 5-star hotel to be operated as a member of the worldwide chain of Mövenpick hotels, in addition to 34 serviced apartments and high end retail and office facilities. It would feature the latest and most modern elements in modern elements in building technology and hotel comfort. It is worth noting that a Preliminary Environmental Report was prepared and submitted to the Environmental Protection Agency (EPA) concerning the demolition of the old structures, and a permit was duly issued for same prior to the commencement of the demolition exercise.

1.3 Project Background and Objectives

The need for hotel accommodation and hospitality facilities in Ghana is most felt now. With the country preparing to host Africa's biggest soccer festival two years from now, and the government aiming at making Ghana a preferred tourist destination especially for Diasporans and people of African origin, the need for more such facilities keep rising. It is anticipated that Ghana's sterling performance at the recent World Cup tournament in Germany will serve to attract soccer pundits and lovers the world over to witness the CAN 2008, which incidentally is being hosted by Ghana.

The recent civil unrests in our neighbouring countries have led to a number of international and multinational organizations that were hitherto headquartered in those strife-torn countries relocating or transferring the greater part of their operations to Ghana.

These, combined with other related reasons have gone to strengthen government's resolve to boost the tourism sector by promoting the divestiture of old non-functional state-owned accommodation facilities in the country, including the former Ambassador Hotel, and recently the City Hotel in Kumasi. Although the tourism and hospitality industry in Ghana has seen tremendous growth over the past decade, there is still a gaping void to be met in order for the sector to meet its objectives of making Ghana a competitive and preferred tourism destination in Africa by 2007. This is in respect of the required number of beds or rooms that meet international star-rated standards.

Enter the new Ambassador Hotel to contribute 262 hotel rooms in the main building and 75 standard room in the extension building that meet international standards, comprising serviced apartments, residential apartments and retail facilities.

The project aims principally at providing ultra-modern hotel accommodation and leisure facilities in Ghana towards making Ghana a preferred tourism destination, while generating employment opportunities for local expertise and raising revenue for the government. Of course, the ultimate objective is to generate suitable financial returns on the capital investments made in the venture. This KHI expects to achieve through the construction of an ultra-modern 337-room five star hotel, and 34 serviced apartments, in addition to high end offices and retail facilities, on the premises of the defunct Ambassador Hotel.

It is expected that the proposed project will be completed in the latter part of the year 2008

1.4 Legal, Regulatory and Institutional Considerations

The relevant policies and regulatory requirements that have to be considered for the legitimate and successful implementation of the project have been reviewed, and consultations with the relevant stakeholders and agencies have been conducted.

The laws and regulations considered include:

- Environmental Protection Agency Act, 1994, (Act 490)
- Environmental Assessment Regulations, 1999, (L.I. 1652)
- Fire Precaution (Premises) Regulations, 2003, L.I. 1724
- Accommodation and Catering Enterprise Regulations, 1979, L.I. 1205
- Building Regulations 1999, LI 1630
- Accra Metropolitan Assembly bye-laws on Noise, Public health and Safety and Sanitation.

Apart from the administrative and policy issues, The Strategic Implementation Plan for the Tourism Sector (2004 – 2007), has been considered. The relevant sections of the plan are discussed in further detail below.

Under the Ghana Environmental Assessment Regulations, 1999 (LI 1652), Schedule 1, Regulation 29 identifies the construction of an accommodation, food and beverage facility as an undertaking that requires the registration of the project with the Environmental Protection Agency (EPA) and the issuance of an Environmental Permit by the EPA.

While Section 1 of the Fire Precaution (Premises) Regulations, 2003, L.I. 1724, requires that a fire certificate be acquired for premises such as a public residential accommodation, Section 14 of the same law requires that the owner or occupier of premises who proposes to make major structural alteration to the premises shall give notice of the proposal and obtain approval from the Chief Fire Officer before the proposal is effected.

The Strategic Implementation Plan for the Tourism Sector (2003 – 2007) has the goal of making Ghana a competitive and quality tourism destination within the framework of respect for and recognition of the country's cultural, historical and environmental heritage.

As part of the traffic impact studies conducted, consultations have also been held with other stakeholders of the project, especially the immediate neighbours at the project site, and some

road users who frequent the roads within the project area on their concerns, comments and expectations of the proposed project.

2.0 DESCRIPTION OF PROPOSED DEVELOPMENT

2.1 Location and Access

The proposed project is a nine-storey 337-room five star hotel facility, 34 serviced apartments and high end offices and retail facilities. It will be located on the Independence Avenue. The site is bound to the north by Mobil House and Cedi House (a 15-storey building), to the north-east by a Bank of Ghana office annex, to the south by Novotel Hotel and to the east by the Independence Avenue and the National Theatre, and to the west by Liberia Link Road and the offices of the Trades Union Congress (see Figure 2.1, Location map). The entire area, within an approximately 2.5 kilometre radius of the site, is made up of the offices of business entities and commercial concerns as well as government and international agencies and organizations, such as the British Council and the Food and Agricultural Organisation (FAO) of the United Nations.

The main entry point to the proposed hotel will be from the Independence Avenue directly opposite the National Theatre, where there will be a lay-by for vehicles entering and exiting the hotel to minimize traffic on the Avenue. This will be connected to a service entrance that provides another access point to the hotel from the Liberia Link Road.

2.2 Facilities and Services

The main hotel building will be made up of various levels or floors, as indicated on Figure 2.2, Sections. There will be a basement, a podium ground, a podium mezzanine, a technical level, five typical levels, an executive floor and a presidential floor. In all, there will be 262 rooms in the hotel complex and 75 standard rooms in the adjacent expansion, in addition to 34 serviced apartments, 50 residential apartments and high end offices and retail facilities. These would be made up of ten (10) Executive suites, twelve (12) junior Executive suites and an executive lounge on the Executive floor, fourteen (14) twin-bed rooms, five (5) junior suites and twenty eight 28 king-size rooms on each of the five typical floors. The Presidential floor will have four (4) self-contained bedrooms, and two other master bedrooms. There will also be, adjacent to the hotel, three buildings of 4 and 5 floors enclosing 34 serviced apartments with one bedroom, one bathroom, or two bedrooms one bathroom, or two bedrooms two bathrooms apartments. Each guest room will have a sleeping bed, writing desk, chairs, a closet, television and radio sets and dedicated internet service.

Other facilities to be constructed in the nine-storey structure include, a business centre and conference rooms (with capacity for 650 people) a reception lobby and a coffee shop, one retail shop, a spa and a health club, an all day restaurant, a theme restaurant and a banquet hall, in addition to services such as a kitchen, a laundry, staff facilities and storages.. There will also be two blocks of six floors each serving as residential apartments (50 residential apartments).

There will also be approximately two hundred and seventy four (274) parking lots. Parking arrangements will be segregated to allow for short and long term parking.

For auxiliary power supply, there will be five 2,000 kVA standby generators and six 1,600 kVA transformers.

2.3 Water and Power Requirements

It is estimated that at full operational capacity the daily water requirement of the hotel will be about 156,000 gallons (590,000 litres). Water will be used in bathrooms, kitchens, restaurants, swimming pools, and for cleaning and other sanitary purposes.

The electrical power requirements will be met by supply from the Electricity Company of Ghana (ECG). Electrical load will be made up of a motley of lights, general power points, different types of air conditioners and refrigeration equipment, heater systems including boilers, and various types and sizes of pump motors. It would include power requirements for elevator systems and other services.

The total after-diversity maximum-demand for the hotel complex is estimated at 7,000 kVA at a power factor of 80%. It is anticipated that the power factor would be improved by the use of power factor corrective capacitors to about 90% which would reduce the power demand significantly. A power supply system consisting of the following will be installed to supply dedicated power to the hotel:

1. 5 No. 2,000 kVA power generators installed in a Generators room including synchronization panels.
2. MV Switchgear of appropriate capacity
3. 6 No. 1,600 kVA transformers installed in an adjoining Transformers room
4. Main Distribution Boards.

2.4 Pre-Construction, Construction and Operational Phase Activities

It is necessary for the activities at the construction and operational phases of the project to be mentioned here, since these activities constitute the potential sources of impacts from the project.

2.4.1 Pre-Construction and Constructional Phase Activities

These would include activities such as identification of precise locations of utility services lines, excavations for the latter and also for the foundations and basement, the podium ground, the podium mezzanine as well as for the technical level of the main building. There will also be the cutting and filling of voids and depressions using earth. It has been estimated that up to seventy percent of the debris from the demolition phase will be used in filling voids and depressions, and for landscaping. Other construction activities will be the hauling of building material such as sand, stone aggregates, cement, iron rods and other materials. The mixing and pouring of concrete and other building materials will also form part of the construction phase activities. Block-laying, flooring, roofing as well as painting of the building will also be undertaken at this phase.

2.4.2 Operational Phase Activities

At the operational phase, the major activities will be accommodating house guests, hosting of delegates for conferences and other social events and programmes like beauty pageants, musical shows and annual general meetings of large firms and corporations. The swimming pools and restaurants will also play host to the general public as well as hotel guests.

3.0 DESCRIPTION OF BASELINE ENVIRONMENT

The site for the proposed hotel project has been used for a hotel of international standards since the 1960s that collapsed in the early 1980s. It is a 65,898 metre-square piece of land within the central business district of Accra. To the north is the Mobil House and Cedi House (a 15-storey building), to the north-east is a Bank of Ghana office annex, to the south is Novotel Hotel and to the east is the Independence Avenue and the National Theatre, and to the west is Liberia Link Road and the offices of the Trades Union Congress (see Figure 3.1 Site Plan). The remnants of the old Ambassador hotel are currently being demolished, the appropriate permits having been acquired and after a series of consultations with stakeholders. The proposed on-site drainage channel will be linked to exiting drainage network via a transition structure as shown in fig 3.1

With respect to the potential environmental impacts of the proposed project, both at the construction and operational phases, the above-described neighbourhood has been delineated as the potential area of influence.

This section first presents a description of the biophysical environment of the project area, followed by discussions on the socio-economic factors that could influence the proposed project, focusing mainly on hospitality market trends, traffic flow patterns in the project neighbourhood and employment dynamics.

3.1 Bio-physical Environment

The project location is in an already well built-up area, as described earlier. Having been used for a hotel earlier without reverting to any other use since, the site remains largely ideal for the proposed development. Thus, the natural environment presents a picture of a previously developed area now overgrown with weeds, commonly grasses and a few shrubs. It is also expected that common fauna such as lizards, snakes and salamanders as well as some rodents will be found there. In view of the built-up nature of the neighbourhood, no floral or faunal species of any significance is expected to be found there. However, some baseline environmental conditions were measured, and some other factors also considered. The details are as given below.

3.1.1 Zoning

Since the site has been zoned for commercial activity, and was already used for a hotel, the Town and Country Planning Department has given its “no objection” approval for the

construction of the new hotel. The general area is occupied by high rise buildings comprising office blocks, hotels, recreational facilities and trading centres.

3.1.2 Services/Utilities

Utility supplies, specifically electricity, telephone and water supply to the existing structure have all been long disconnected. However, by its location, access to the utility services such as water supply, electricity and telephone services will be easily available.

3.1.3 Air Quality

The site is located in a heavy vehicular traffic zone, with a bus terminus close by (the Kinbu terminus). The ambient air quality within the project area has been determined to be around $100\mu\text{g}/\text{m}^3$, well below EPA's prescribed limit of $150\mu\text{g}/\text{m}^3$. Emissions from the engines of vehicles operation within the area contribute significantly to pollute the area. However, the open nature of the area and the generally windy nature of the area ensure the rapid dispersal of these emissions.

3.1.4 Noise

The noise level measured in the area indicated levels ranging between 89 dB(A) at night and 95 dB(A) during the day due to vehicular movements and other activities around the project site. These levels are well above the EPA levels 55 dB(A) and 60 dB(A) respectively for areas with commercial or light industry activity.

3.1.5 Drainage

Like most of the physical structures on the site, the drainage construction on the site is still in appreciably good shape, though they have been exposed to the weather elements for a long time. They were originally designed to open out into the metropolitan drain system and can still be used, unless in situations where the new construction would not permit so. It is the intention of the proponent is to, as much as possible, make use of the existing drainage system which is linked to the centralized underground sewer system of the central business district of Accra.

3.2 Socio-Economic Characteristics

The immediate focus of economic activity of the proposed project is the Ghanaian hospitality industry in Ghana in particular, and the socio-economic activity of general project area. The overall impacts of the proposed hotel project on the hospitality market and employment trends as well as on the traffic flow pattern in the neighbourhood are considered here.

3.2.1 Hospitality Market Trends

The hotel is targeting a guest market comprising international business people visiting Ghana, presidents and heads of states, foreign dignitaries and emissaries, and could host international functions and activities such as conferences, workshops and beauty pageants.

Projections are that within the first year of operations, occupancy rate will be low, to increase exponentially over the next couple of years. This increase in marketability will be expected to ride on the success and reputation of the world famous Mövenpick chain of international hotels and hospitality facilities worldwide, as well as the international marketing of Ghana as a preferred tourist destination by the Ministry of Tourism and Diasporan Relations. Mövenpick International uses the World Wide Web and other advertising channels to great advantage. Also, the government of Ghana through the Ministry of Tourism and Diasporan Relations is pursuing a Strategic Implementation Plan for the Tourism Sector (2003 – 2007) to make Ghana “the preferred tourism destination in Africa”, and make tourism the third largest employer after agriculture and retailing by 2007. This drive, especially with the re-branding of the ministry to include diasporan affairs is expected to culminate in an increased tourism interest in Ghana for Africans in the Diaspora. Annual Pan-African events like Emancipation Day and PANAFEST will continue to bring in tourists. Ghana’s fifty year anniversary in 2007 lends more weight to this drive. These underpin the need for more hospitality facilities in Ghana.

With Ghana increasingly enjoying international spotlight and attention as an island of peace and political stability in the West African sub-region through the development of democracy and good governance, it is anticipated that the government’s policy of making Ghana the gateway to West Africa will attract more business people into the country.

Two years hence, Ghana will be hosting Africa’s biggest soccer fiesta, CAN 2008. Following Ghana’s impressive debut at the World Cup, CAN 2008 in Ghana will continue to draw the attention of the football world to Ghana. It is anticipated that international media houses

and sports broadcasting stations will set up shop in Ghana before, during and after the tournament.

In view of the above, it can be projected that the hotel project upon its timely completion could meet an appreciably high market within its initial years of operation.

3.2.2 Traffic Flow Patterns

The project area is serviced by busy streets with appreciably high vehicular and pedestrian traffic; three two-way dual carriage roads and a one-way single carriage link road. The three two-way dual carriage roads are Independence Avenue to the east, Liberia Road to the north and Barnes Road to the west. The western gate of the site opens into Liberia Link, the one-way single carriage road that connects Barnes Road from off the main entrance to Novotel to Liberia Road behind the TUC office block. The Independence Avenue is categorized as a Class C, i.e., a road capacity condition with an average flow range of 750 –1200 passenger vehicles per hour in both directions.

The results of a Manual Traffic Data Count (MTDC) conducted within the project vicinity to establish a traffic baseline data is as presented in the appendix. There is general traffic congestion on the southern side of the proposed site (mainly in Makola–Okaishie–Kinbu areas) due to pedestrian–vehicular conflict and the intense commercial activities that go on there. The peak period for this sustained saturation starts from 10:30 hours to 17:30 hours.

By virtue of the commercial activities within the project area and the central business district in general for most times of the day, there is appreciably heavy traffic on the Independence Avenue–Barnes Road intersection (National Theatre–Novotel Hotel direction). Hawkers and beggars take advantage of the traffic situation to ply their trade. This situation normally occurs during week days and on Saturdays, and creates a pedestrian-vehicular conflict which in turn contributes to the traffic congestion.

3.2.3 Employment

In anticipation of growth surges in the local tourism industry a number of schools and training centres have emerged that are training hospitality personnel. A significant chunk of the products, however, are unable to secure employment after their training. It is expected that the proposed project will create employment avenues for both new entrants and experienced hospitality workers. Positions such as kitchen staff, waiters, house keepers,

cleaners, chambermaids, valets, front office personnel, middle and senior management staff and a host of others are expected to open. Ancillary staff will add to this number, while downstream activity such as car rentals, forex bureau and travel and tour operations will offer more employment opportunities.

Moreover, the proposed hotel project as a 5-star hotel will be expected to raise the bar in terms of the standards and quality of training of hospitality staff in Ghana.

4.0 SIGNIFICANT ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION

While the prime location of the existing structure in the central business district of Accra makes it ideal for the intended purpose, its construction at a time when the entire neighbourhood is already well built-up will require the observation and application of the strictest planning and development practices to take on board the environmental and social concerns raised by neighbours and other stakeholders. The operations and maintenance phase will also present peculiar challenges that will need to be addressed.

Appropriate mitigation measures have been proposed and discussed in detail in Section 4.2.

4.1 Potential Impacts

The potential impacts of the proposed hotel project that have been identified have been categorized below under construction and operational phases. These concerns have been identified from various sources, including site visits and inspections, consultations with various stakeholders, ENVI-LOGICA's sources as well as desk surveys, and have been presented in the Rapid Impact Matrix (Table 4.1) below.

4.1.1 Pre-Construction and Construction Phases

Pre-Construction activities will include the identification and relocation of utility service lines that traverse the project area and could be affected by the construction activity. Construction phase impacts would include:

- **Air quality**

The relocation of underground utility service lines and the construction works will generate dust that would compromise air quality in the area. Equipment and vehicles to be used in the project such as excavators, pay loaders and haulage or dump trucks will also emit exhaust fumes and smoke. This could present issues of air pollution, against the background that the general wind direction in the area is north-eastern, toward the office blocks and properties to the north and the north-east of the site.

- **Noise and Vibration**

The relocation of underground utility services lines and the construction activity will generate noise that could add to the background noise levels in the area. As already mentioned, the measured background noise levels in the vicinity for both day and night times exceed the permissible EPA values. To this end, it will be ensured that equipment to

be used by the selected Contractor will have very low noise emission levels. Noise, as well as dust generation, has been major concerns raised during consultations with stakeholders during both the demolition stage and also the construction phase.

- **Traffic Impacts**

The project site is serviced by three two-way dual carriage roads and a two-way single carriage link road. The three two-way dual carriage roads are Independence Avenue to the east, Liberia Road to the north and Barnes Road to the west. The western gate of the site opens into Liberia Link, the one-way single carriage road that connects Barnes Road from off the main entrance to Novotel to Liberia Road behind the TUC office block. The Independence Avenue is categorized as a Class C, i.e., a road capacity condition with an average flow range of 750 –1200 passenger vehicles per hour in both directions.

At the construction phase, haulage trucks will be required to bring in building materials, sand and other logistics. Heavy earth-moving equipment such as excavators will be brought to the site. An estimated eighty per cent (80%) of the rubble from the on-going demolition of the old structure will be reused on site, in filling voids and hollows, and also in creating landscaping elements. The remainder will be carted off after construction. These could significantly impact the traffic conditions on these roads, especially as they enter and exit the project site.

- **Occupational Health and Safety**

The risks of accidents, slips and falls exist in the course of construction exist. Accidental collisions and knock-downs of personnel by trucks and other moving equipment are potential risks. Falling objects and debris could hit workers on the ground. Some workers may cut themselves or others accidentally with tools, or may slip carrying materials. The inhalation of dust and other particulate air-borne matter could also affect the health of workers.

- **Public Health and Safety**

By virtue of its location in the central business district, generated dust and exhaust fumes from the construction works could impact negatively on the air quality within the populated vicinity, thus impacting negatively on public health. In view of the heavy traffic conditions within the area the project could lead to more vehicle-pedestrian conflicts and/or accidents.

Table 4.1 Rapid Impact Matrix (Scale +ve impact=+5; -ve impact =-5)

ENVIRONMENTAL IMPACT	IMPACT SCALE	IMPACT DESCRIPTION
Pre-Construction & Construction Phases		
Air quality	-1	Dust, smoke and soot generation from the exaction, construction and the movement of haulage and other machinery
Noise	-1	Noise generation from the excavation, construction, engines of pay loaders and haulage trucks
Traffic Impacts	-2	Increased vehicular traffic on the roads serving the project area
Occupational Health & Safety	-2	Work-related accidents
Public Health and Safety	-2	Air pollution, dust sprays, vehicular-pedestrian accidents
Employment	+3	Income generation
Operations and Maintenance Phase		
Waste generation and management –liquid and solid	-2	Waste water, sewage, food waste, packaging materials
Storm water drainage	-2	Reduced percolation and high run-off volumes.
Traffic Impacts	-1	Increased vehicular traffic on the roads serving the project area
Energy and Waste minimisation	+2	Power factor correction devices will be installed
Security	+2	Security measures at the hotel will secure the neighbourhood.
Emergency fire	-1	Risk of fire outbreak from electrical failure, kitchen fires.
Accidents and hazards – drowning, burns, slips and falls	-2	Potential drowning in the swimming pools, burns and scalds in the kitchen, accidental slips and falls.

(Impacts are assessed and quantified based on magnitude, extent, duration, reversibility)

During haulage of sand to the site, dust sprays from the dump trucks as they move along streets could compromise air quality and enter the eyes of the pedestrian public.

- **Employment**

It is anticipated that the proposed construction will offer employment opportunities. It will require the hiring of some skilled and unskilled personnel, up to between four hundred and five hundred. Food vendors and providers of other services would also come to the project site to sell their wares. This will be a positive and beneficial impact.

- **Construction Waste Generation**

Construction activities will include the generation of construction wastes such as empty cement sacks, wood wastes, empty paint buckets and plastic wastes such as electrical cable clippings, etc. the reusable wastes such as cement sacks, wood wastes and paint buckets will be gathered and given out to scavengers, while other wastes will be disposed of through the public waste disposal system.

- **Disruption of Utility Services**

This is a genuine concern raised by a number of stakeholders consulted. The project area, as already mentioned, is in a prime business and commercial district. Disruption of electric power, telephone services, water or any other utility service could cause serious problems for the numerous businesses and commercial houses in the vicinity. This was another issue of concern raised by a number of the respondents in the stakeholder consultations.

4.1.2 Operations and Maintenance Phase

Identified impacts at the Operations and Maintenance phase are as outlined below:

- **Waste generation and management**

Wastes generated can be categorized into liquid and solid. Liquid waste from the hotel will be constituted of sanitary water, sewage and wastewater from the kitchens. A significant proportion of the liquid waste will be from sanitary activities like washing of floors, guest rooms, toilets and bathrooms. It is estimated that the daily water demand shall be 1,500 litres per room for the hotel and 230 litres per person for the residential apartments. That works out to about 590,000 litres for the hotel at full occupancy, the 34 serviced apartments and the offices and retail facilities.

- **Storm water drainage**

The paving and concretizing of such a vast area as is proposed will result in reduced percolation during rainfall periods. This will give rise to increased run-off which if not properly handled could result in flooding in adjacent, low-lying areas.

- **Noise**

Outdoor activities at the hotel such as poolside parties, garden parties and barbecues could generate significant levels of noise, depending on the number of people attending and what time of the day.

- **Traffic**

The entrance and exit points of the hotel both open out into very busy streets. This situation could aggravate the traffic situation on these streets, especially during peak traffic hours during the operations and maintenance phase of the hotel.

- **Energy management and Waste minimization**

For a hotel of this size and stature, electric power consumption can obviously very high, taking into account the number of equipment that must ordinarily be left running, such as corridor lights, air conditioners, fridges and freezers, elevators, security equipment and a host of other gadgets.

It is anticipated that up to about 45,000 square metres of the grounds will be landscaped with grass and other vegetation that will need to be watered or irrigated regularly to keep the vegetation fresh.

- **Security**

Hotels, like all public places are open to the general public. The potential gathering of people at the hotel for functions such as conferences and meetings, as well as for their day-to-day business will present a target-rich zone for all kinds of crooks and people with deviant, socially unacceptable behaviour. Thieves and other kinds of criminals may seek to rob from parked vehicles, guest rooms and other sections of the hotel. The presence of security personnel will deter such deviants from their operations and help sanitize the general neighbourhood by way of security and public safety.

- **Emergency fire**

Fire outbreaks could start as a result of malfunctioning electrical equipment, incorrect installation of such equipment or from cooking fires in the kitchens. If liquefied petroleum gas (LPG) will be used as fuel in the kitchens, the risks only get higher.

- **Accidents and hazards**

Accidents could occur at the kitchens, such as knife cuts, burns, scalds, slips and falls. At the poolside, drowning of swimmer(s) could occur.

4.2 Mitigation measures

4.2.1 Pre-Construction and Construction Phases

Mitigation measures for the Pre-Construction and Construction phase impacts would include:

- **Precise location of utility service lines**

Officials of the utility service providers will be involved in locating the exact position of the utility service lines to avoid trial-and-error excavations.

- **Air quality**

Water bowsers will be used to sprinkle the project area on daily basis to reduce dust generation.

The Contractor who will be selected for the project construction will be made to undertake to comply with some specific obligations, including ensuring that all motorized equipment and machinery to be used are serviced and maintained to reduce exhaust emissions (and noise) to the lowest levels possible.

- **Noise and Vibration**

Measured background noise levels in the project area for both day and night times already exceed the permissible EPA levels. Construction activities will be restricted to daylight hours when the noise generated will be masked by the background noise.

The Contractor who will be selected for the project construction will be made to undertake to comply with some specific obligations, including ensuring that all motorized equipment and machinery to be used are serviced and maintained to reduce noise (and exhaust emissions) to the lowest levels possible.

- **Traffic Impacts**

The traffic impact aspects of the construction project pose formidable challenges. It is imperative that appropriate measures are taken to avoid or minimize the identified impacts. Measures to be taken include restriction haulage of debris to the lean traffic hours, preferably night time and the early hours of the morning. This will ensure that the demolition does not add to the existing traffic congestion unduly. Additionally, the less-used, low traffic Liberia Link will be used as much as possible, either as an entry or exit point. The major limitation here will be the narrow nature of the road that could limit turning of the haulage trucks. Further, traffic control measures such as traffic wardens and temporary traffic lights will be installed to assist in regulating traffic flow.

- **Occupational Health and Safety**

The risks of accidents, slips and falls exist in the course of construction exist. Accidental collisions and knock-downs of personnel by trucks and other moving equipment are potential risks. Falling objects and debris could hit workers on the ground. Some workers may cut themselves or others accidentally with tools, or may slip carrying materials. The inhalation of dust and other particulate air-borne matter could also affect the health of workers.

Personal protection equipment (PPE) such as hard hats, nose masks, ear plugs, reflective vests and metal toe-capped safety boots will be provided for all personnel and their use enforced. Workers who would have to work at heights will be provided with the requisite safety equipment such as safety girdles or harnesses.

Vehicular movements into, within and out of the site will be coordinated and regulated by traffic wardens to avoid collisions between vehicles, and between vehicles and humans on the site and on the adjoining streets.

- **Public Health and Safety**

To reduce dust emissions from the site that could compromise air quality and pose health risks to the public, the site will be sprinkled with water frequently.

Warning signs informing the public about vehicular movements in and out of the site, such "HEAVY VEHICLES CROSSING" will be posted at relevant locations, to alert the public.

Haulage trucks will be covered with tarpaulin to minimize the generation of dust sprays from the trucks as they haul debris from the site or bring in sand and other building materials to the site. Dust sprays could be injurious to the eyes when they accidentally enter the eyes of the passing public as the haulage trucks drive by.

The entire project site will be cordoned off, and entry into the site will be restricted to the Contractor's, Engineer's and proponent's staff. Security guards will be on 24-hour duty for seven days a week.

- **Construction Waste Generation**

Reusable wastes such as cement sacks, wood wastes and paint buckets will be gathered and given out to scavengers, while other wastes will be disposed of through the public waste disposal system.

- **Disruption of Utility Services**

The Contractor will be required to collaborate with utility service providers to identify the exact location of utility lines, and ensure their safe and appropriate relocation or transfer prior to the commencement of construction activities.

4.2.2 Operations and Maintenance Phase

Identified impacts at the Operations and Maintenance phase are as outlined below:

- **Waste generation and management**

Liquid waste from the hotel will be constituted of sanitary water, sewage and wastewater from the kitchens. A significant proportion of the liquid waste will be grey water from sanitary activities like washing of floors, guest rooms, toilets and bathrooms. This will be disposed of through an existing 500 mm sewer line along Independence Avenue. The swimming pool will be drained periodically. The Ghana National Fire Service, industries that use water in boilers for steam generation or road contractors who would use the water to water down dusty roads would be invited to pump such water away which could be used in flushing drains, watering dusty roads or quenching fires. Human wastes will be collected in cesspits that will be emptied periodically. The prospect of installing waste treatment facilities is under consideration, and will be firmed up by the EIA stage. (please comment)

Solid wastes will include food wastes, paper and polythene packaging materials, broken glassware, tins and cans from the kitchens, restaurants, bars and coffee shops. These will

be collected in large bins and disposed off through the metropolitan waste disposal system. Private waste collection companies will be engaged to collect and appropriately dispose of these wastes.

- **Storm water drainage**

Storm water will be directed into storm water drains through drain holes to be made on the courtyard and open areas, then to the municipal drains. Design options that will allow for such storm water to be directed onto green areas will be considered. This way such water could be put to use, to save the use of treated water in watering green areas.

- **Noise**

Not much can be done about this impact. During daylight hours, the impact would be minimized by the background noise level. The impact would be more prominent at night, however. There are no residential facilities within two hundred metres of the hotel location, so noise impacts are not expected to impact directly on any people.

- **Traffic**

Traffic wardens will be employed to direct and control vehicular movements in and out of the hotel. Design options are being considered that will include lay-bys at the entrance and exit points of the hotel. Both exit points open out into very busy streets, and the lay-bys will assist exiting vehicles join traffic streams on the busy streets easily.

- **Energy management and Waste minimization**

For the efficient application of electrical energy, power supply to all these equipment will need to be supplied with optimum power. Output power factor corrective devices will be installed to ensure energy efficiency. Energy-saving lamps will be used as much as possible to conserve electrical power.

It is anticipated that up to about 45,000 square metres of the grounds will be landscaped with grass and other vegetation. These areas will need to be watered or irrigated regularly to keep the vegetation fresh. A storm water drainage system will be put in place that will collect run-off from the buildings roofs, parking and paved areas by gravity via gutter kerb inlets and drain holes onto the green, landscaped areas during the rainy season. This will go

a long way to reduce the amount of potable water that will be required to irrigate these green patches and minimize waste.

Mechanisms will also be put in place to separate or segregate waste plastics and polythenes from solid wastes to be disposed of, to ensure the rapid biodegradability of garbage moved from the hotel to municipal dumpsites. These will be handed over to plastic waste recycling companies, and will reduce the environmental menace plastics are currently posing to Ghana as a nation.

- **Security**

Security personnel will be engaged to man the entrance and exit points, as well as the general areas of the hotel. Closed-circuit television (CCTV) will be used to monitor alleys and secluded areas of the hotel. The presence of security personnel will deter criminals and people with bad intentions from perpetrating negative acts.

- **Emergency fire**

Smoke detectors will be installed in balconies, guest rooms and no-smoking areas. Fire alarms and fire extinguishers will be installed along alleys and public places to allow for the early detection of fire outbreaks.

Employees, especially kitchen staff will be given basic fire prevention and fighting skills, which will be upgraded periodically.

- **Accidents and hazards**

Staff, especially section supervisors will be given basic first aid training to handle simple injuries, scalds and burns and sprains before victims are referred to a hospital.

Qualified lifeguards will be engaged to man the swimming pools, and to rescue any patron who may be drowning.

5.0 MONITORING PLAN

The potential environmental impacts for which mitigation measures have been designed will be monitored constantly throughout the project. These would include air quality, noise, traffic impacts and occupational health and safety, and condition of machinery and equipment at the Pre-Construction and Construction phases. The Pre-Construction phase activity will involve the identification and relocation of utility service lines, in collaboration with agents of the utility services providers.

During the Operations and Maintenance phase, the impacts that will be monitored are waste generation and management, storm water drainage, traffic impacts, energy and waste minimization, security, emergency fire, accidents and hazards.

5.1 Pre-Construction and Construction Phase Monitoring Plan

This monitoring plan will be implemented during the Pre-Construction and Construction phases, and will cover the following.

5.1.1 Air Quality

Using the baseline values given for air quality earlier, the air quality in term of particulate matter (PM₁₀) and CO will be monitored weekly. Comparisons will then be made and any increase above the EPA guideline values during the demolition would call for immediate measure to reduce the air pollution before the failure investigated.

5.1.2 Noise

Although the background noise levels exceed the EPA limits within the vicinity of the project area, no effort will be spared in ensuring that the levels are not further exceeded. Monitoring of noise levels will be done once every two days during the peak hours

5.1.3 Traffic Impacts

The proposed mitigation measures for identified traffic impacts of the demolition project will be monitored closely to see how successful they will be in mitigating the impacts. A road traffic engineer who has been involved in the determining the traffic impacts will also be commissioned to do the monitoring. These would inform whatever measures that will need to put in place during the construction phase of the project.

5.1.4 Occupational Health and Safety

Personal Protection Equipment (PPE) will be provided for all personnel and their use enforced to prevent accidents and injuries to personnel. Operational safety procedures shall be designed by the Contractor and strictly enforced at all times to streamline the activities of employees on site.

All accidents, falls, cuts and collisions will be documented and the records well kept for future reference, and to guide the Contractor in designing future operational safety procedures. Monitoring will also cover equipment operation, efficiency and maintenance during the demolition period, and these will also be documented.

Table 5.1 Monitoring Plan

Parameter	Frequency	Responsibility	Remarks
Construction Phase			
Air Quality	Every Other Day	Project Engineer	
Noise levels	Every Other Day	Project Engineer	
Traffic Impacts	Daily	Traffic Engineer	
Occupational Health and Safety – use of PPE	Daily	Site Supervisor	
Condition of Machinery and Equipment	Daily	Project Engineer	
Operations and Maintenance Phase			
Waste management	Daily	Private waste management company	
Storm water drainage	Daily (during rainy season)	Groundsmen	
Traffic impacts	Daily	Traffic Wardens	
Energy and Waste minimization	Monthly	Management	
Security	Round-the-clock	Safety & Security Manager	
Emergency fire, Accidents & Hazards	Daily	Safety & Security Manager	

5.1.5 Condition of Machinery and Equipment

To ensure that machinery and equipment operate smoothly with minimal noise and emissions, they will be monitored on daily basis prior to operation.

5.2 Operations and Maintenance Phase Monitoring Plan

The monitoring plan that will be implemented at this stage will cover the following.

5.2.1 Waste generation and Management

Generated solid waste from the kitchen, restaurant, guest rooms and other sources will all be gathered and kept in waste bins at a dedicated point on the premises, where they will be collected on daily basis by a waste disposal company that will be engaged to do so.

5.2.2 Storm water drainage

To avoid the flooding of paved areas such as courtyard, the storm water drains will be cleared of debris that may plug them on daily basis, especially during the rainy season.

5.2.3 Traffic Impacts

At the operations phase, the impacts of vehicular movements in and out of the hotel on the adjoining busy roads will be monitored. The mitigation measures put in place such as the lay-bys and the traffic control wardens will be monitored for their effectiveness in addressing traffic impacts.

5.2.4 Energy and Waste Minimisation

Power and water consumption patterns will be monitored on monthly basis to establish a trend pattern, against which future consumption patterns will be measured. This will allow for unusually high monthly consumption rates to be identified and appropriate measures taken to forestall future losses.

5.2.5 Security

The hotel on completion will be expected to accommodate dignitaries, both foreign and local, as well as leading politicians and state officials. This role has security implications. Security of the hotel and of its guests will be of prime importance, and will be monitored

round the clock by the Safety and Security Manager. Any security incident will be recorded and investigated. Appropriate measures will then be taken to ensure that such incidents are not repeated.

5.2.6 Emergency fire, Accidents and Hazards

All safety incidents such as fire hazards, accidents, slips and falls, as well as burns at the hotel will be recorded by the Safety and Security Manager, and appropriate measures put in place to forestall their recurrence.

6.0 ANALYSIS OF ALTERNATIVES

The proposed 5-star hotel complex is to be located in the central business district of Accra. The choice of the location is justified by the fact that the site has been zoned for such an activity, and has actually been used for a hotel in the past.

At this stage of the proposal, the alternatives considered are:

6.1 “No Project” scenario

Following the collapse of the former Ambassador Hotel, a significant void in the hospitality business was created. Although a number of star-rated hotels have come up since then, the demand for hotel beds of international standard is yet to be matched by their availability.

The location of the proposed hotel is a prime commercial and business area within the city of Accra. The continued fallowing of the site actually accrues to revenue losses to the state, as it has holds huge potential for generating revenue to the state and employment for a significant number of people. Until the recent demolition of the remnants of the former Ambassador Hotel structures, the structures were being inhabited by vagrants and drug pushers, who were defaecating rampantly on the site, among other nefarious activities. A “no-project” option will engender the continued unsanitary conditions at the site.

As well as boosting Ghana’s tourism potential the proposed hotel will put Ghana on the international hospitality map as having one of the hotels in the Mövenpick international chain.

A “no-project” option will not let the expected benefits from the proposed project accrue to Ghana.

6.2 Upgrading existing facilities

One alternative was to have rehabilitated and upgraded the existing facilities of the erstwhile Ambassador Hotel to KHI’s standards. However, having been left to the vagaries of the weather for decades, the physical structures of the defunct hotel cannot be trusted to support any structural add-ons. The upgrading of the existing structures would thus be at great cost to the proponent while it may not guarantee structural integrity and the design suitability for the proponent.

6.3 Site Alternatives

There are other locations within the city apart from the current one that could have been used for the proposed hotel project. However, a new location may require the clearing of vegetation and the disruption of social and communal life of groups and individuals that may be residing in or close to the area.

However, not many sites would offer the kind of benefits this current one does – proximity to the central business district and other installations such as the Ministries, the seat of government, the sports stadium, the National Theatre, Accra International Conference Centre, State House, Parliament House, banks, the beach and tourist attraction sites such as the Kwame Nkrumah Mausoleum. In view of the fact that the current site has already been zoned for a hotel, and has actually been used for a hotel in the past there is justification for its continued use as such.

A new site will require that the site be appropriately zoned, and the acquisition of new utility service lines such as water, electricity and telephone at additional cost to the proponent, not to talk about down time in acquiring these facilities. Moreover, the availability of such a large tract of land within the central business district of Accra for the construction of a hotel is simply marginal. This is exemplified by the location of the proposed Sheraton Hotel in Accra, where the current Accra Turf Club has to be relocated to make way for the construction of the hotel.

7.0 PROVISIONAL ENVIRONMENTAL MANAGEMENT PLAN

This section outlines a provisional environmental management plan that will ensure sound environmental practices during the various stages of the project. It discusses and allocates appropriate resources for items discussed under mitigation and monitoring. Issues relating to procedures for the management of unexpected change that will result by the implementation of the project are also addressed in this section.

KHI Ghana 01 Limited shall select a Contractor through a competitive bidding process who will implement the Construction phase of the hotel project. KHI 01 Ghana's Project Manager will coordinate and oversee site construction activities and monitor specific environmental criteria. The operations and maintenance phase will be managed by competent teams of professionals under the umbrella of Mövenpick International Hotels.

The provisional plan discussed in this section has taken into consideration guidelines for construction and managing provided in the Building Regulations 1999, LI 1630, and the Accra Metropolitan Assembly bye-laws on Noise, Public health and Safety and Sanitation.

7.1 Environmental Management Structure

A Project Environmental Team (PET) headed by a representative of KHI 01 Ghana shall coordinate the environmental sustainability aspects of the project. The Project Environmental Team (PET) shall be responsible for all environmental issues at the Construction phase of the project, and shall comprise the Project Engineer, all Sectional Foremen as well as the representative of KHI 01 Ghana.

Management of environmental issues at the Operations and Maintenance phase shall be incorporated into the hotel's Corporate Environmental Management Plan, to be administered by the Hotel Manager or a key person appointed by the management.

7.1.1 Functions of Project Environmental Team.

The functions of the PET shall include:

- Ensuring project compliance with all relevant environmental, social, health and safety regulations

- Liaison with all relevant regulatory bodies and organizations – EPA, Ghana National Fire Service, AMA Works Department, Town and Country Planning to ensure compliance
- Formulation and review of environmental, health and safety policies and practices, as well as social matters associated with the project.
- Assisting in the education and training of project staff in environmental, social and safety awareness.
- Making budgetary provision for project environmental programmes
- Undertaking environmental and social monitoring activities for the project

The head of the Project Environmental Team shall be the coordinator, with responsibilities including:

- Monitoring all environmental programmes for pre-construction and construction phases of the project, including those related to bio-physical and socio-economic/cultural components.
- Working closely with project contractors to ensure that all monitoring and mitigation guidelines recommended for the project are strictly adhered to during the various phases. This will include following all health and safety guidelines outlined and following strictly the Authority's environmental policy guidelines.
- To organise activities to motivate and maintain the interest of project staff in environmental issues
- To increase project staff awareness of environmental issues through training programmes and review meetings
- To coordinate investigations on all types of accidents.
- To conduct environmental audits in accordance with project monitoring guidelines.
- To serve as liaison between project contractors and relevant regulatory agencies.
- To produce or commission to be produced, the relevant environmental reports covering the project
- To work closely and coordinate efforts with the EPA and other enforcement bodies to ensure full compliance with all legal and regulatory requirements
- To develop a work plan for the implementation of the EMP
- To establish and run a reporting system on progress (or otherwise) in implementing mitigation measures (including contractors obligation), training etc.

7.2 General Health and Safety Procedures

The guidelines provided in the Factories, Offices and Shops Act, 1970 (Act 328) given below shall be strictly complied with at the Construction and Operation and Maintenance phases of the project. These regulations cover the major safety areas. Further details of the safety sections relating to this project are also outlined below.

- General Safety Rules for workers engaged in construction.
- Safety guidelines related to the use of tools and equipment
- Safety procedures associated with the transportation and of personnel and materials
- Safety procedures for materials handling, storage and disposal

7.3 Pollution Prevention

In addition to the safety guidelines relating to health and safety, strict pollution prevention guidelines shall also be enforced during all phases to the project.

Most pollution incidents are avoidable if careful planning and management procedures are instituted. Pollution prevention measures are much cheaper to implement than costly clean up after the incident. For the prevention measures to be effective it is important that the environmental team must first be adequately trained in pollution prevention for this hotel project.

Some of the important pollution prevention guidelines to be followed for this project shall include the following:

7.3.1 Planning and Preparation

Careful planning can reduce the risk of pollution significantly. As a first step environmental site meetings shall be organised between EPA officer(s), the project team and contractors prior to commencement and during construction operations.

7.3.2 Site Offices

A common cause of pollution is through acts of theft and vandalism. The entire project area shall be cordoned off and adequately protected by fences and locked accesses where possible. Security personnel shall be engaged at site offices/yards.

Care shall be taken to ensure that no contaminated drain water is allowed to flow into the public drains traversing the area.

Fire precautions to be observed at site offices shall include:

- Provision of adequate and suitable portable fire extinguishers
- Adequate ventilation for storage rooms containing flammable chemicals
- No smoking signals posted at sensitive locations such as fuel storage points
- Handling of flammable liquids by competent personnel only
- Rags soaked with flammable liquids shall be stored in metal containers and disposed of safely

7.3.3 Storage, Handling and Disposal of Materials / Oils / Chemicals

The Factories, Offices and Shops Act requirements regarding the above shall be strictly adhered to. In addition, the following guidelines shall also be followed in the handling of materials, oils and chemicals.

- Materials shall be stored in an orderly manner and in safe stacks, tiers or piles. Materials shall be stored so as not to obstruct passageways. Where necessary warning signals, lights and barricades shall be provided.
- Most chemicals used in construction operations such as oils, cement, cleaning materials, and paint have potential pollution hazards. All such materials shall be stored on an impervious base within a bund wall to contain any spillages.
- Leaking or empty oil / paint/ chemical drums shall be removed from the site and safely disposed of
- Contents of all tanks / drums containing chemicals shall be clearly marked.
- Disposal of all tanks and drums shall be done safely. All contents of tanks/drums to be disposed shall be emptied and perforated by competent personnel before final safe disposal.
- Fuelling of project equipment (trucks, bulldozers etc.) and vehicles may constitute the greatest spillage risks. This shall be done in designated areas with impermeable surfaces

located away from existing public drains on site. Drip trays and spill kits shall be kept on-hand. Fuel hoses and valves shall be regularly checked for leakages and wear and tear.

- Emergency spillage procedures shall be clearly outlined and posted conspicuously. Absorbent materials for containing spillages shall be readily available on site. These shall include sawdust, sand, etc.

7.3.4 Concrete Works.

The construction of the building foundations and the superstructures themselves at the site shall involve concrete works. Concrete and cement are very alkaline and corrosive and can have serious pollution impacts on water. Therefore all concrete preparation and mixing shall be located away from these drains, and will be carefully monitored to ensure that such material do not get into the public drains to contaminate any streams and water bodies.

7.4 Waste Disposal.

For the proposed hotel project, the major sources of waste would be from the vegetation clearing, wood waste, plastic scraps, empty cement sacks, metal scraps etc. those that can be recovered and used such as empty cement sacks and wood waste will be recovered for reuse. Dealers in the relevant waste materials will be invited to cart them away, while the non-reusable ones will be gathered in appropriate waste bins to be provided at the site for collection and disposal through public waste disposal system.

7.5 Allocation of Resources for Environmental Management

Apart from the human resources to be made available in 7.1, financial provision would be required to ensure that mitigation, monitoring and training programmes are effectively implemented.

It is estimated that financial resources for environmental management require up to 1-2 % of the project cost, and it is expected that the project proponent will make the necessary budgetary provisions to cover all these commitments.

Table 7.1 below shows an impact mitigation table, by which project activities, their anticipated impacts, proposed mitigation measures and their expected net effects are outlined.

Table 7.1 Impact Mitigation Table

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACTS/ACTIVITY	LOCATION	PROPOSED MITIGATION MEASURE (S)	MONITORING/FOLLOW-UP	NET EFFECTS
PRE-CONSTRUCTION PHASE.	Clearing of vegetation	Project site	This is a residual impact for which no mitigation measure is required.	Project Environmental Team	-
	Excavation of buried utility service lines.	"	Utility companies will be involved in identifying the exact location of buried utility service lines to minimise trial-and-error excavations.	PET to coordinate with Ghana Telecom, Ghana Water Company and Electricity Company, Ghana. KHI 01 Ghana will bear all related costs.	Payment of relevant costs to utility services is required for such works.
	Air quality	Project site and vicinity	Dousing the project area with water daily to minimise dust, Proper maintenance of equipment and machinery to minimise emissions.	Project Contractor	Minimised air quality impacts
CONSTRUCTION PHASE	Noise	Project site and vicinity	Constructional activity shall be limited to daylight hours when noise impacts are minimal. Proper maintenance of equipment and machinery to minimise emissions.	Project Contractor	Reduced noise impacts.
	Traffic impacts	Roads adjoining project site	Haulage activities will be restricted to lean traffic hours. Traffic wardens will be	Project Contractor	Reduced traffic impacts

Occupational Health and Safety	Project site	engaged to control traffic at entry and exit points. Appropriate Personal Protection Equipment shall be provided for all personnel and their use enforced. Strict adherence to safety precautions as per Factories, Offices and Shops Act, 1970 (Act 328)	Project Contractor	To protect construction workers and ensure work side safety
Public Health and Safety	Project site and vicinity	Warning notices "NO ENTRY, NO TRESPASSING", and "SLOW DOWN, HEAVY VEHICLES TURNING" shall be placed at entry and exit points of access roads. Strict adherence to safety regulations and precautions as per Factories, Offices and Shops Act, 1970 (Act 328) shall be observed at all construction sites.	Project Contractor	To minimise the risk of collisions and accidents
	"	Drains leading from work areas shall be directed away from existing drains to prevent them polluting natural water bodies.	Project Contractor	To avoid contamination of nearby natural water bodies

OPERATION	Waste generation and management procedures	At hotel premises	Staff will be trained to collect garbage to specified points. Private waste management companies will be engaged to lift garbage from hotel on daily basis.	Hotel Management Team	To ensure a clean and sanitary ambience.
AND	Energy management and waste minimisation	"	Regular monitoring of power and water consumption patterns. Optimum recycling and re-use of collected wastes materials.	Hotel Management Team	Optimised resource use
	Security	"	Private security firm to be engaged, Closed-circuit TV to be used in monitoring security.	Hotel Management Team/Private security firm	To ensure the security and safety of guests and property.
	Occupational Health and Safety	All sections of hotel operations	Appropriate PPE will be provided for all personnel and their use enforced.	Hotel Management Team	To ensure personnel and worksite safety.
	Fire prevention mechanisms and procedures	All sections of hotel operations	Smoke detectors and fire alarms will be installed; fire extinguishers shall be installed at vantage points.	Hotel Management Team	Avoid fire outbreaks by ensuring early detection.
MAINTENANCE PHASE	Effective record keeping & reporting system	"	Electronic and hard copies of monitoring activities will be kept.	Hotel Management Team	Will allow for progressive review of installed safety procedures as per Act 328.

8.0 CONSULTATIONS

8.1 Stakeholder Consultations

Consultations have been made with a number of statutory agencies and organizations to facilitate the identification of key environmental concerns associated with proposed project. The proposed project has been registered with the Environmental Protection Agency, which has requested that a Scoping Report should be prepared and submitted. The comments and concerns raised by respondents of the consultation process at the Scoping phase have been taken on board in this Environmental Impact Assessment.

The utility agencies, particularly Ghana Water Company Limited, Electricity Company of Ghana and Ghana Telecommunications have been consulted to assist in locating any underground cables and pipelines that may have been buried on the project site long ago, that could interfere with the provision of utility services to the public, or pose safety threats to the Contractor and its employees.

In consultations with the head of General Services Department of Cedi House, Mr. Kwesi Bentil, he expressed concern about dust and noise generation that could emanate from the construction exercise. He indicated that the upper levels of the building made use of natural ventilation, and therefore would suffer dust pollution and potential equipment damage should the dust from the construction exercise be carried into their offices by the wind.

The General Manager of Novotel Hotel, Mr. Jean Drohuet indicated that the hotel's swimming pool and terrace bar are adjacent to the southern wall of the site. He therefore expressed concern about dust and noise from the construction exercise making the swimming pool and the terrace bar area unusable during the period.

In consultations with the Facilities Engineer and the Project Engineers of Mobil House, they expressed concerns about the possibility of the inadvertent cutting of service lines such as power, water and telephone lines due to the construction exercise.

The Chairman of the Interim Management Committee of the National Theatre, Mr. Michael H. Attipoe, indicated that in consultation with their engineering consultants, the Architectural and Engineering Services Limited (AESL), they had identified the risk of disruption of utility lines due to the construction, as well as noise as the major impacts that could affect their activities.

The process for selecting a Contractor who will handle the construction is ongoing, through a tender process. When selected, the Contractor will have clauses in his contract that will require him to use modern and well maintained equipment that will generate minimal noise.

Name of Consultees	Concerns/Comments	Mitigation/Action To Be Taken
Mr. Kwesi Bentil, Head of General Services Department, Cedi House	Dust and Noise generation	Site will be sprinkled with water frequently to minimize dust generation. Construction will be restricted to daylight hours to minimize noise nuisance.
Mr. Jean Drohuet, General Manager, Novotel Hotel	Dust generation and noise	Site will be sprinkled with water frequently to minimize dust generation. Construction will be restricted to daylight hours to minimize noise nuisance.
Felix Majekodunmi, Managing Director, TOTAL/MOBIL Ghana Limited.	Possibility of disruption of public utility service lines in the course of the construction exercise	Service providers have been consulted to assist in identifying location of service lines to prevent accidental cutting or breaking of lines.
Michael H. Attipoe, Chairman, Interim Management Committee, National Theatre.	Noise and possibility of disruption of public utility service lines in the course of the construction exercise.	Construction will be restricted to daylight hours to minimize noise nuisance. Service providers have been consulted to assist in identifying location of service lines to prevent accidental cutting or breaking of lines.

9.0. CONCLUSION

The proposed 5-star 337 room hotel to be managed by the Mövenpick Hotels International will meet and match international hotel standards, and put Ghana on the international map of world-class hospitality facilities. It will be expected to create a sizeable number of employment opportunities and raise training standards in the hospitality industry in Ghana.

The construction will be undertaken by a company deemed to be qualified and experienced in such projects, and selected through a competitive bidding process, to ensure smooth operation. It is also expected to generate a significant number of job opportunities.

The neighbourhood of the proposed hotel project is an already built-up section of the central business district of Accra, with banks, a hotel, commercial and business houses, as well as recreational facilities. The construction of the hotel at this time will have significant impact on the neighbouring communities through traffic nuisance, noise, air quality deterioration and occupational health and safety. However, appropriate mitigation measures have been outlined to eliminate or minimize the negative impacts while accentuating the positive ones. It is expected that the proposed monitoring programmes would be implemented to ensure that the project operates within a framework of environmental sustainability and social acceptance. A provisional Environmental Management Plan has been drawn which will be implemented to guide the construction and operations of the hotel project within the first one and a-half years of its operation.

In view of the vast economic potential of the proposed project and the measures designed to minimize adverse environmental and social impacts of the proposed project, the project is expected to positively impact the socio-economic sector of Ghana.

APPENDIX