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DEPARTMENT OF ENVIRONMENTAL SCIENCE

COLLEGE OF SCIENCE

AN IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT SYSTEM ACCORDING TO ISO 14001 STANDARD IN THE HOSPITALITY INDUSTRY

A CASE STUDY - GOLDEN TULIP KUMASI CITY HOTEL

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BY

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A Thesis Submitted to the Department of Theoretical and Applied Biology in partial fulfilment of the requirement for the award of the

Master of Science Degree in Environment Science

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DECLARATION

I, **Gordon Amankwaa**, hereby certify that this report is a true outcome of the research carried out at Golden Tulip Kumasi City Hotel on the implementation of EMS according to ISO 14001 Standard in the hospitality industry. I hereby declare that, except for reference to other people's work which has been duly acknowledged, this research work consists of my own work produced from research undertaken under the supervision of Rev. Stephen Akyeampong (Department of Theoretical and Applied Biology – K.N.U.S.T.) and that no part has been presented for any degree elsewhere. This report is submitted in partial fulfilment for the award of MSc. (Hons.) Environmental Science.

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ABSTRACT

By and large hotels are being appraised by their level of environmental performance rather than their financial performance. As a result of competition and uncontainable pressures from customers, regulatory bodies, investors and other stakeholders, management of hotels are motivated to adopt proper environmental practices. Golden Tulip Kumasi City which has an international exposure was selected as a case study to help achieve the main objectives of the research. An extensive and a comprehensive literature was also reviewed on ISO 14000 Standard to formulate the guidelines and Environmental Management Programmes for the industry. The research sought to identify the specific environmental aspects and their respective impacts on the environment in tandem with formulating an Environmental Management Programme and guidelines according to ISO 14001 Standard. The results showed that some of the facilities, activities and services such as air conditioning, laundry and kitchen provided by the hotels have a significant impact on the environment. Among such impacts are increased in waste and disposal of unsorted waste, steam and chemical vapours released to air and contamination of soil and water. Therefore, there is an earnest need for an adoption of proper environmental management practices in the hospitality industry. In summary, the hospitality industry in Ghana has no guideline for a successful implementation of an EMS according to ISO 14001 Standard. Therefore, there is a strong recommendation for them to adopt the standard for an improvement on their environmental performance.

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ACRONYMS

EMS	Environmental Management System
ISO	International Organisation for Standardisation
EMAS	Eco-Management and Audit Scheme
EMP	Environmental Management Programme
PDCA	Plan- Do – Check – Act
IHEI	International Hotels Environment Initiative
IH&RA	International Hotel and Restaurant Association
EUHOFA	International Association of Hotel School
UNEP	United Nations Environment Programme
ODS	Ozone Depleting Substance
TIBOR	Tokyo Interbank Offered Rate
[s.a.]	No date
i.e.	Id est. (that is)
e.g.	Exempli gratia (for example)

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CHAPTER ONE

1.0 INTRODUCTION

It is universally accepted that in keeping with present trends, we must expect the world to become more crowded and polluted, less ecologically stable and more vulnerable to natural hazards in the years ahead, leading to a reduction in quality of life for all people (Fuggle and Rabbie, 2000).

The hospitality industry consists of broad category of fields within the service industry that includes lodging, restaurants, event planning, theme parks, transportation, cruise line and additional fields within the tourism industry.

The focus is narrowed down to hotels as part of the hospitality industry because of its ubiquity in Ghana. Hotel is defined by the international accommodation as properties with at least one licensed bar and restaurant on the premises, with on-site management which serve breakfast and sometimes have conference or banqueting facilities setting them apart from other accommodation categories such as self-catering accommodation, caravan and/or camp sites or houses (Automobile Association, 2002).

The industry is one of the most important sectors of a nation's economy. They provide and create jobs, especially during times of holidays (summer break); they are a source of innovation and entrepreneurial spirit; they harness individual creative effort; and they create competition and are the seed bed for businesses of the future. In, short, hospitality industries are vitally important for a healthy dynamic market economy.

Nowadays, increase industrial development has led to social concerns, not just about amenity of life but also for human health resource and the environment in general (Petts, 1999). Rapid population growth and mass consumption can be considered as the basic

causes of today's situation (Barrow, 2005). Moreover the amount of people and the amount of waste produced per person, mainly determined by the level of technology have led to the increase in pollution.

Following the world summit on sustainable development held in Johannesburg, South Africa, in August 2002, it has become imperative for every organization to embrace those invaluable practices and integrate environment in management decision thereby creating environmental awareness to help ameliorate their impact on the environment. Services are provided to guests so that they can influence visitors by setting examples in environmental awareness and responsibility.

Hospitality industry is a potential tool for implementing Environmental Management Plan which includes monitoring, auditing and reporting. Some of the industries carry out periodical audit of their activities which takes into account the environs in which they are situated.

However, by providing the goods and services to meet social needs, business activities use resource and generate waste and, therefore, they are a major contributor to environmental destruction (Welford, 1994) because of their consumption of natural resources such as water and energy. In view of the above, there should be an adoption of an operational strategy for Improving Environmental Performance of Hospitality Industry. There are four options viz.

- Promoting the adoption of Environmental Management System (EMS) for the hospitality industry
- Promoting resource sharing and application of shared facilities through industrial clustering and networking.

- Developing research, development and demonstration programmes for adoption of cleaner technologies in the hospitality industry.
- Promoting energy and waste exchange centres.

  (Asian Development Bank, 2002)

Several tools have been developed for assessing, predicting and therefore preventing environmental damage which can be caused by certain types of human activities (Glasson *et al*.. 1999). Among all the proactive instruments, Environmental Management Systems (EMSs) are seen as the tool to be introduced into an organization which has, had or may have an impact on the environment (Werner, 2000). Hence, the adoption of EMS for the thesis.

1.1.1 WHY THE ADOPTION OF ENVIRONMENTAL MANAGEMENT SYSTEM

An EMS is an organized approach to managing the environmental effects of a corporation's operation, which involves integrating environmental respect and awareness with economy and quality of production (Stuart, 2000). So an EMS is a tool used by a company to identify measure and manage the effects of its activities on the environment.

As mentioned in EN ISO 14001:2004, the Environmental Management System (EMS) is based on the methodology known as Plan-Do-Check-Act (PDCA), and as such it provides a continuous improvement of environmental performance in an organization (see Figure 1.1) (EN ISO 14001, 2004). Known that ISO 14001 is a voluntary standard for all kinds of organization, an EMS is flexible and feasible to start (EN ISO 14001, 2004) therefore, EMS can be very effective in improving environmental performance in the hospitality industry which is characterized by high degree of variability. Also EMS provides a step by step process of improving environmental performance in the industry.

A well designed EMS is compatible with organizational culture and there is a display of employee awareness and involvement which encourage group participation.

In addition, EMS is one of the most important tools available for organizations to develop more environmentally proactive and efficient manner (Emilsson, 2002). It will help organisations to operate with much efficiency, reduction in waste, prevention of liability, increase compliance and enhancement in relation with regulatory bodies. While the EMS's have been predominantly adopted by large companies, few hotels have implemented EMSs although they are reported as contributing up to a significant level of all the industrial pollution.

Example of organizations that have successfully implemented an Environmental Management System (EMS) are listed on the website for transformation strategies and include organization such as Copley Square Hotel in the United States of America; Wilton Armetale, a non-ferrous foundry in Lancaster, Pennsylvania; Rockwell Automation in Twinsburg, Ohio; the Xerox Corporation, and IBM and 3M of the United States of America. The aforementioned organisations listed benefits from the implementation of the EMS such as energy and water consumption, reduced costs of waste removal, recycling benefits and identification of hazardous waste. Maris Hotels has published its environmental policy in accordance with the requirements of ISO 14001. The following declaration appears on the website of the group. "Its implementation is regarded necessary given the role, which the company and all collaborating parties can play for the preservation of the environment in order to protect its clients and personnel, as well as to obtain healthy environmental conditions with the long-term benefits to the tourist hotel products it offers".

The international Restaurant & Hotel Awards, which is held annually, has factored in good environmental management practices in their criteria. Organisations that have adopted the ISO Standards have a high chance of being selected and winning thenceforth.

Though arguably, it is difficult to generalize the problem of implementing EMSs in the hospitality industry due to its high level of diversity. However, the significant impacts of the hospitality industry need special attention, and engaging them in environmental improvement is regarded as a vital part of sustainable development. The behaviour of some of the hospitality industries and their attitudes towards the environmental management play a crucial part in determining whether sustainable development can be achieved. Hence the need for the implementation of EMS in the industrial operation is very important and therefore should be encouraged.

1.2 RESEARCH CONTRIBUTION

According to an IHEI (2002) estimate, a typical hotel produces in excess of 1 kg of waste per guest-day, which, for a typical facility, results in many tons of waste each month. Ghana Today Magazine 2006 edition, estimated that the average person's daily waste production per capita is about 0.45 kg.These implies that hotels utilise enormous resources and bring forth wastes which to some extent cannot be assimilated by the natural environment.

Also, Due to the high level of resource utilisation (energy, water, consumables) in hotel facilities, the environmental footprint of hotels is typically larger than those of other types of buildings of similar size (Rada, 1996). According to a study completed by the Macao Water Supply Co. Ltd. in 2003, the hotel sector in Macao consumed 4,779,685 m^3 of water which was about 9.3% of Macao's total annual water consumption; approximately 90% of the consumed water becomes trade effluent discharge. It is estimated that a

typical hotel releases between 160 and 200 kg of carbon dioxide per m^2 of room floor area annually, depending on the fuel used to generate electricity, heating, or cooling (Chan and Lam, 2002). Bohdanowicz (in press) estimates that European hotels emit more than 10 mega tonnes of CO_2. There is no collective data for hotel water consumption on a global, or a European scale, but according to Davies and Cahill (2000) tourists in the American lodging industry consume approximately 174.88 million m^3 of water annually. Some hotels have luxury features like water heater, air-condition, swimming pool, washing machine, and electric cooker which use tons of water and energy. The used water discharged mostly in a form of sewage into the surrounding environment without treatment may cause land, water and air pollution for example, Nitrate and Phosphate (from detergents) contaminated water may destroy life in water which may result in the absence of feeding organisms like fish and crabs to feed on mosquito larvae and subsequently leading to the outbreak of mosquitoes in a particular location, hence, the destruction of a whole feeding system and spread of malaria.

Finally, hotel is a place which serves as interplay for people from different races, social classes, countries and regions etc who meet and interact with each other in different ways. Most of the time it provides host for visitors entering a particular country, therefore is a very good ground to inculcate the act of proper Environmental Management Practices into the visitors. Hotels in addition, have a high propensity to spread diseases taking into account various activities like cooking and serving food and drinks on plates, glasses together with spoon, fork and knife which when not well cleaned and disinfected can spread diseases like cholera, typhoid, tuberculosis, hepatitis B, etc.

In view of the above, there's an earnest need for an operational EMS to help manage environmental issues which hitherto has been available both internationally and locally and this research seeks to address that because currently, hotel companies are more and

more being appraised by the level of their environmental and social commitment and achievements rather than their financial performance. In this context, industry benchmarking is gaining attention and continuing to develop (Wöber, 2001).

1.3 OBJECTIVES AND AIMS

The overall objective was to investigate the specific environmental impacts of hotels on the environment and at the same time formulating an operational EMS guidelines and environmental management programme in accordance with ISO 14001 Standard.

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In order to achieve the set objective the following aims listed below were carried out:

- To Review the current environmental management practices of the hotel with the aim of reviewing waste and waste water management practices, air emission management, noise and other waste management and assessing the current Environmental Management Practices with the framework of EMS.
- To identify all the environmental aspects of the hotel.
- To identify the impact of the services, facilities and activities of the hotel and determine the level of significance.
- To conduct gap analysis by comparing the Environmental Management Practices in place to the requirements of the ISO 14001.
- To formulate an Environmental Management Programme and workable guidelines for the implementation of EMS base on the framework of the gap analysis with the requirements of ISO 14001 in mind.
- To offer appropriate recommendations for an effective implementation of EMS in the hospitality industry.

CHAPTER TWO

LITERATURE REVIEW

2.1 IMPACTS OF TOURISM AND HOSPITALITY INDUSTRY ON THE ENVIRONMENT

An environmental impact refers to the deviation from a baseline situation. Much of the discussion is based on the work of EUHOFA, IH&RA, UNEP (2001) which designs an Environmental Teaching Pack for the Hospitality Industry. Their work -" An Environmental Teaching Pack for the Hospitality Industry "- is a good example for examining the impacts of tourism and hospitality industry on the environment.

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2.1.2 IMPACTS OF TOURISM ON AIR

With over 650 million people travelling internationally and ten times that number travelling domestically, road, rail and air transport are major contributors to global warming, climate change, photochemical smog and poor air quality. Road traffic also causes noise, dust, congestion and particulate emissions that are worsened in many cities by badly maintained exhaust systems. It is worth noting that many of the world's major tourism city destinations – Bangkok, Paris, Rome, Los Angeles, Mexico City, New York, Athens, and Manila – are also on the global list of urban areas with very poor ambient air quality. Transport is also an important activity when tourism facilities are being designed and built. Building materials, machinery, furniture and fittings have to be transported to the site and construction waste has to be disposed of. Once buildings are occupied, businesses directly contribute towards air pollution through the use of fossil fuels and ozone-depleting substances, as well as the purchase of goods and services that need to be transported long distances. In many countries electricity is generated by burning fossil fuels and as hospitality businesses in these countries are big electricity consumers, they

contribute to air emissions that way too. Emissions from aircraft, especially nitrous oxides, have greater impact when released at high altitudes. Air traffic control delays, airport congestion and fuel jettisoning (even though rare) all contribute to air pollution.

2.1.3 IMPACTS OF TOURISM ON LAND

2.1.3.1 LAND USE ISSUES

The hospitality industry is often held responsible for the expansion of urban sprawl and the use of hitherto untouched natural areas, especially mangroves, mountains and forests, for further development. While this can bring much-needed water, power and transport infrastructure, it also creates competition with traditional land uses such as agriculture, fisheries and forestry. Mangroves, forests and mountains are constantly under pressure for resort development. Coral reefs and forests are further exploited as sources of building materials which leads directly to land degradation and biodiversity loss. Land use conflicts can be observed in many coastal regions, where the local fishing industry has vehemently opposed tourism development. The fishermen argue that tourism not only destroys the coastal environment and near-shore fishing grounds, but brings them only very meagre revenues.

2.1.3.2 RESOURCE CONSUMPTION

Hospitality businesses and tourists themselves consume large proportions of basic resources, which are often in short supply. It is usual practice in many resort areas for local people to live through cuts in power, water, fuel and food supplies during peak seasons, to meet the needs of tourists. Consider the following facts:

- Several species of shellfish are on the brink of extinction in the Caribbean because of over-fishing. The main demand for shellfish comes from tourists;

- In the Mediterranean, one tourist uses the same amount of water as 8 local people;
- A 5-star hotel in Cairo consumes the same amount of electricity as 3,600 middle-income households;
- In Nepal, a country plagued with deforestation and desperate for fuel, a trekking tourist can use four to five kilograms of wood a day.

2.1.3.3 LAND DEGRADATION

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Poor land-use planning coupled with unsustainable sitting, engineering and construction of tourism facilities can cause erosion, landslides and flooding. For example, in many low-lying and coastal areas, tourist facilities constructed on the waterfront may increase these risks if natural protective features such as dunes and vegetation cover have been destroyed. Walls and dams are often constructed in an effort to halt erosion, but these structures have been shown to exacerbate issues by increasing erosion, flooding, sedimentation and deposition further upstream or downstream.

2.1.3.4 ARCHITECTURAL POLLUTION' AND SPRAWL

Tourism often fails to integrate its structures with the natural architectural features of the surrounding area. Large dominant resort buildings of varying design are out of place in any natural environment and may clash heavily with the indigenous architecture. Moreover in the absence of building and planning regulations, tourism developments tend to expand in sprawling ribbons along coastlines, valleys and scenic routes. They bring with them problems of litter, waste and effluent disposal, and traffic congestion, which contribute to increased pollution of air, water and land. Tourism, building and planning professionals have recently begun to realise that building design and ambience have a dollars-and-cents value. In many countries a new development is often preceded by the

definition of visual envelopes, and by presenting graphic and other illustrations of it as seen from different angles.

2.1.3.5 LOSS OF VEGETATION

Building and construction often involves soil removal, land reclamation, filling, dredging and levelling, which can involve the removal and sometimes total destruction of the site's vegetation. This causes serious interruptions in the natural cycles of the surrounding ecosystem. Indirect impacts include erosion, species loss, waterway pollution, fire risks, and the introduction of non-native species to the area. Litter and waste dumping can also affect vegetation by changing the nutrient balance of soils and by blocking out air and light. Vegetation can also be damaged by the activities of tourists:

- Camping, trampling, and the construction of pathways can lead to the loss of cover vegetation, which increases erosion and linear soil blowouts. The extent of damage depends on intensity of use and the ecosystem's vulnerability. In flat areas with compact soils and a large number of resilient plant species, the effects may be minimal; but on hills and dunes, the vegetation is much more vulnerable. Trampling is also reported to have a negative effect on the root base of certain species, the sequoia redwood, for example.

- Constant picking of flowers, plants and fungi can change species composition.

- The deliberate chopping down of young trees to be used as walking sticks, tent poles or firewood can be disastrous to the ecosystem. The removal of young trees alters the age structure of the plant community and leaves fewer trees to mature. As tourism and hospitality businesses continue to expand to remote natural areas, it is absolutely vital to achieve better management of their impacts on the surrounding vegetation for they contribute to biodiversity loss on the global level.

2.1.3.6 EFFECTS ON WILDLIFE

Viewing, photographing and in some cases hunting wildlife are all important tourist activities. But over the last 30 years the evidence has been mounting to suggest that tourism is again becoming a victim of its own success. As early as 1975, travel writers reported that much of the attraction of game viewing lay not simply in the presence of animals, but in the absence of tourists and minibuses. The ever increasing number of tourist lodges, campsites and safari vehicles, coupled with the increasing reliance of expanding local populations on natural parks and reserves for agricultural land, food and fuel, are frequently exceeding the natural carrying capacities of these areas. The impacts of tourism on wildlife include:

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- Interruptions to feeding and breeding habits and predator-prey relationships of animals. Especially at fault are tourist vehicles that chase and track down animals in order to get a good photograph. Wildlife writers have also recorded numerous occasions when young animals get fatally separated from their mothers by the illegal off-road driving of safari vehicles, as well as many instances when noisy tourists have interrupted the hunting of predators.

- The creation of game reserves has helped some species to proliferate unnaturally. This can stimulate fighting and lead to habitat destruction. For example, in recent years the elephant population in the game reserves of Central and Southern Africa has increased dramatically. These large populations have uprooted trees and stripped away vegetation cover, reducing the food available for many browsing species such as the giraffe.

- Littering and waste dumps by tourists and hospitality lodges attract rodents, birds and species such as bears. This affects these animals' traditional feeding patterns

and raises safety issues for tourists and local inhabitants. The use of animals for souvenir manufacturing is internationally banned, but poaching still thrives everywhere. This will continue as long as skins, furs, horns, shells, tails, hoofs, tusks, claws and stuffed animals fetch high prices, and as long as adequate revenues from tourism do not filter down to the local population. All these impacts collectively affect the further growth and survival of animal species and, as with vegetation loss, contribute directly to global biodiversity loss.

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2.1.4.1 IMPACTS OF TOURISM ON WATER

Tourism is clearly not the only major source of water pollution; a host of other industries and authorities are, too. But tourism is different: clean rivers, coastline sand lakes, where people can bathe, swim, sail and fish are essential for good business.

2.1.4.2 THE EFFECTS OF WATER POLLUTION

- Poorly treated or untreated sewage released into water introduces pathogens, which are a human health hazard. Sewage in seawater is especially critical, since the salinity of the water inhibits the natural bacterial breakdown of the waste.
- Cholera, typhoid, dysentery, hepatitis, and a variety of skin and eye diseases can be transmitted through contaminated water, fish and all other seafood.
- Solid wastes and effluents dumped in deeper water are often washed up on the shore. This is not only unsightly and unhealthy: damage to aquatic life is inevitable.
- Sewage and waste in water increase its nutrient levels, which can speed up euthrophication. Excessive plant growth affects the volume of dissolved oxygen,

which in turn will reduce the growth and diversity of aquatic invertebrates and fish.

- Oil spills from pleasure boats and ships can kill birds and all forms of aquatic life.
- Heavy metal and chemical run-offs from tourist boats, marinas and other such facilities are toxic to aquatic life. Some of these chemicals are surprisingly stable in the environment; they can accumulate in the fatty tissues of aquatic animals and birds further up the food chain.
- Erosion increases silting, this reduces the dissolved oxygen supply for animals and plants, and the amount of sunlight penetrating the water.
- The removal of coral, live shells and other life forms from reefs for the making of tourist souvenirs causes the reef and a large section of the coastal ecology to die.

2.1.5 OTHER RELATED ISSUES

Apart from the impacts on air, land and water, some important environment issues arise directly as a result of tourism:

- Congestion and noise due to overcrowding be it in urban areas, natural parks, visitor attractions or recreational waterways, can cause considerable stress both to the local environment and to its population. Traffic jams, long queues, delays in service delivery, noise, shortages of power, water and foods all increase environment impacts.
- The seasonal characteristic of tourist arrivals leaves many facilities vacant for large portions of the year. This has serious consequences for businesses in terms of cash flow and facility maintenance. Poorly maintained facilities mean increased environment impacts.

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2.1.6 SOCIAL AND CULTURAL IMPACTS OF TOURISM

- Land tenure and ownership issues have arisen, especially surrounding national parks and reserves established on land that has traditionally belonged to indigenous communities.

- The roles and rights of local people (including indigenous communities) living in and around protected areas has given rise to conflict between these communities and area management bodies.

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- The overcrowding and concentration of tourist infrastructure can create 'tourist ghettos' where basic infrastructure and resources have to be shared between tourist facilities, local industry and households. When shortages arise during the high season, tourist facilities are given priority, which can cause animosity and tension in local communities.

- Some tourist attractions being also sites of local cultural and religious significance, conflict can arise between local communities and the tourism industry.

- The apparent wealth of tourists may cause antagonism and encourage the 'demonstration effect'. Tourists are seen to possess such 'attractive' material goods as cameras, electrical devices, trendy clothes, etc. They also appear to have a carefree lifestyle, an impression enhanced by the fact that people on holiday may behave far less responsibly than they do at home. This can lead to the development of an inferiority complex amongst local people, especially the local youth, encouraging them to change their values and lifestyles by imitating the behaviour and consumption patterns of tourists. This is called the 'demonstration effect'.

- Tourism has been accused of introducing and increasing alcoholism, gambling, prostitution and drug abuse among local people, leading directly to increased crime rates and health concerns.

- While tourism provides a market for the continuation of traditional arts and crafts, it is often accused of encouraging the development of pseudo-art forms which degrade and devalue traditional practice and culture. It is also argued that traditional practices of interest to tourists are often those that are the most unimportant and least valuable to local cultures. Tourism is further accused of commercialising traditional ceremonies and art forms.

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2.1.7 THE OTHER SIDE OF THE ARGUMENT

- Tourism has been responsible for the conservation of large areas of natural habitat. Wildlife, forest reserves and scenic landscapes have been preserved primarily for their ability to attract visitors. For example, over 207,200 square kilometres have been set aside as national parks in Eastern and Southern Africa.

- Tourism is a vital stimulus for the conservation of historic monuments, archaeological sites, ancient buildings and structures of religious and cultural significance. Europe, with its rich heritage and diversity of monuments, churches, cities and villages, is perhaps the best example in the world of tourism-oriented heritage conservation.

- Not only does tourism initiate conservation, it also provides revenues and incentives for its continuation. A large proportion of revenues earned by cultural sites and natural parks is re-injected into ongoing environment improvement. Tourism revenues can also be used for the rehabilitation of old buildings, which could be later, used as tourism and hospitality facilities. Large structures can be

converted into hotels, museums and conference centres while smaller houses, cellars and warehouses can be used as guesthouses, bed-and-breakfast facilities and bars and restaurants. Former industrial sites (mills and factories, for example) and historic buildings such as well-known houses, prisons or castles can serve as visitor attractions in their own right.

- In many parts of the world, tourism has been responsible for the introduction of administrative and planning controls to ensure that environment quality is maintained and visitors have a satisfactory experience. Examples of such controls include building restrictions and permits, mandatory environment-related criteria for infrastructure development, traffic management plans, zoning of natural areas to provide extra protection for fragile ecosystems, training and licensing of tourism professionals, limiting visitor numbers, etc. Unfortunately, in most cases, these controls are enforced only after environment damage has occurred as a result of uncontrolled expansion, waste dumping and excessive use of the site.

- Tourism can also play an important role in promoting local industries and providing a market for local arts, crafts and culinary specialities. Many traditional art forms and industries would certainly be under a heavier threat of disappearance if it were not for tourism

If tourism is to continue to expand and be profitable, it must develop and operate in an environmentally-sound manner. Environment stewardship is the key concept here. Just as product manufacturers work continually to improve the quality of their goods, so the tourism industry must put back what it takes from the primary product, which it receives practically free of charge: the environment.

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2.2.1 ENVIRONMENTAL MANAGEMENT SYSTEMS

2.2.2 INTRODUCTION

EMS standards are process but not standards for performance.

In other words these standards do not tell organizations what environmental performance they must achieve (besides compliance with environmental regulation to achieve its own objectives and targets). The assumption is that better environmental management will lead indirectly to a better environmental performance (TIBOR/FELDMAN, 1996).

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You can implement an EMS that is in line with one of the EMS standards without external certification. Once there is a clear reason to demonstrate conformance to third parties, external certification and registration becomes a factor. Some situations where certification could become important are (TIBOR/FELDMAN, 1996)

- A customer requires an EMS certificate as a condition to sign a contract.
- Your organization supplies to a customer who strongly suggests that you get registration.
- A government provides benefits to registered organisations.
- You have a site in the European Union, where market pressure or the regulatory environment forces you to get registration or certification.
- You export to markets where EMS registration is a de facto requirement for entering the market.
- You expect to gain a competitive advantage through EMS registration.
- Your major stakeholders (Local community, shareholders, unions, etc.) expect environmental excellence and an EMS registration is the way to demonstrate it

2.2.3 GENERAL EMS

With the increase of public expectation, supply chain pressure and consideration for environmental legislation, EMSs were firstly developed in the USA and are widely utilized in the world (Hewitt, 1998). At present, there are 61,287 businesses certified to ISO 14001 in the world and 3047 organizations including 3911 sites registered under EMAS in the European countries (Reinhard, 2003; EMAS, 2004).

An EMS refers to "the part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy" (ISO 14001, 1996) – that is, the system is aiming to ensure that the activities of an organization are in accordance with its environmental policy and avoid or reduce, as possibly, negative environmental impacts caused by industrial activities (Richard, 2002).

2.2.3.1 ISO 14001

The ISO 14001, 'Environmental Management Systems: Specifications with Guidance for Use' is as the name suggests a framework to provide guidance in the design of environmental management systems among the ISO 14000 family. A basic structure therefore has been developed to enable industries achieve environmental management. The structure is composed of five steps as demonstrated in figure 2.1

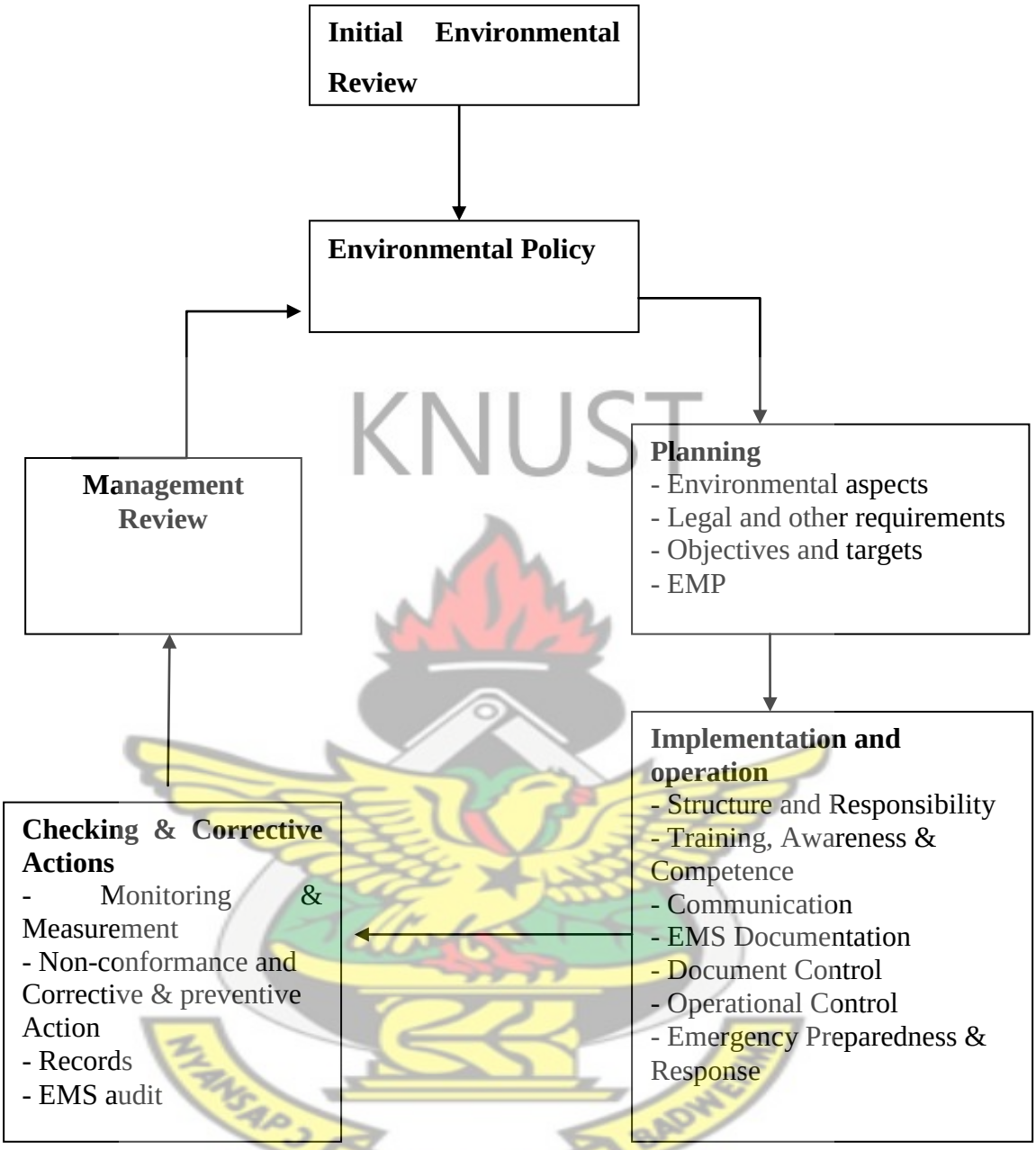

Figure 2.1: Steps and Elements of ISO 14001 (source: Ridgeway)

A brief description of these main features or requirements of the ISO 14001 is provided below.

- Environmental policy. The policy drafted by an organization is set out in relation to the environment and must consider commitments to continual improvement,

prevention of pollution, and complying with relevant environmental legislation and other relevant requirements;

- Planning. On the basis of the policy commitments, the organization sets out itself objectives and targets and devises a corresponding plan to meet them;
- Implementation and operation. The measures are taken in practice to ensure that objectives and targets can be achieved, including setting structure and responsibility, providing training, improving awareness and competence and so on;
- Checking and corrective action. A series of methods are used to check whether the environmental management meets the objectives and targets, such as monitoring, corrective and preventive action, and environmental management system audit; and
- Management review. Management must periodically review the system to ensure its continuing effectiveness and suitability. The results should be reported to the top management. (Joseph *et al*, 1996)

The application of ISO 14001 help establish a common, harmonized approach for all organizations on environmental management and improve their marketing competence (Sally, 1998). Several problems, however, have been noted during its implementation. One major issue is that ISO 14001 means spending resources to apply for it. There are some companies without their own EMSs and therefore this entails additional resources in order to bring their EMSs in line with the standard (Philip, 1997). In addition, the ISO 14001 standard did not completely fulfil the needs of the company, since it did not put enough emphasis on the company's initiatives towards communications, senior management commitment and environmental audits. Neither did it include the environment in business plan in decision-making, the environmental education of

employees, environmental performance reporting, and environmental rewards and recognition programme (Philip, 1997).

2.2.3.2 MOTIVATION FOR EMS

The factors accounting for the increasing adoption and development of Environmental Management Systems can be grouped into external and internal factors.

External factors include:

- Pressure from customers
- Pressure from socially concerned investors
- Pressure from environmental interest groups
- National and international regulations
- Pressure from competitors

Internal factors include:

- Pressure from the company's shareholders who want to see their company behave in a socially responsible manner.
- Realization that it makes good business sense; it makes them more competitive eg. Reducing pollution means increasing efficiency and wasting fewer resources; improving health and safety conditions result in a more productive workforce.
- Realization that mismanaging environmental issues can damage the company's reputation, leading to loss of confidence among customers, loss of stakeholders and sometimes leading to legal liabilities.

  (Mensa-Bonsu, 2009)

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2.2.3.3 POTENTIAL POSITIVE EFFECTS OF IMPLEMENTING EMS STANDARD

Profit Margin

- Optimized products and production processes lead to less material input and lower costs.
- Cost savings due to reuse and recycling result in less excess material input and lower material costs.
- Lower transportation and storage costs due to less material and energy input
- Easier compliance with environmental standards, lower compliance costs
- Lower risk of redesigning costs due to changing regulations or customer perception
- Lower environmental impacts leads to reduced charges, pollution penalties
- Lower environmental risk leads to lower insurance costs and compensation payments

Sales Growth Rate

- Better knowledge about products and production processes leads to innovation and better quality.
- Renovation of products portfolio leads to higher competitiveness
- Improved public image leads to higher acceptance and higher sales
- New markets due to product innovation (e.g. combined with eco-labels)
- Ensured access to markets due to product innovation (e.g. combined with eco-labels)
- Environnemental information/consulting improves client relations.

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Investment in Working Capital

- Less excess material and energy due to waste prevention and energy savings program leads to less working capital.

Investment in Fixed Capital

- Focus on preventing environmental impact leads to less end-of-the-pipe investments
- Lower warehousing investments due to low-risk material usage
- Easier to obtain permits and authorisation

Tax Rate

- Obtaining tax relief due to lower environmental risk.

Cost of Capital

- Increased awareness of environmental problems and reduced environmental risk attracts shareholders and investors which lead to lower cost of debts and equity.
- Subsidies due to over fulfilment of environmental regulations
- Weak loans due to over fulfilment of environmental regulations.

2.2.3.4 POTENTIAL NEGATIVE EFFECTS OF IMPLEMENTING EMS STANDARD

Profit Margin

- Additional costs of implementing an EMS reduce profit margin
- Investment in pollution abatement technology to comply with environmental regulations leads to higher production costs.

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Sales Growth Rate

- Investment in EMS and pollution abatement technology to comply with environmental regulations leads to higher cost and market prices.

Investment in working capital

- Environmentally friendlier, but more expensive materials and energy

Investment in Fixed Capital

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- Investment in pollution abatement technology to comply with environmental regulations

Cost of Capital

- Because of the public environmental report, financial markets suddenly realize the environmental risk of an organization, its products and services and ask for a premium.

  (RAPPAPORT, 1986: COPELAND, 1990)

CHAPTER THREE

METHODOLOGY

3.1 Study Area

Kumasi Metropolis is located in the Rain Forest Region and south-central part of Ghana. It is centrally located in the Ashanti Region. Kumasi is the capital town of Ashanti region and the second largest city in Ghana. With over 2.5 million people, the city spans a radius of 32 km. Kumasi is approximately 483 km north of the equator 161 km north of the Gulf of Guinea. The metropolitan area shares boundaries with Kwabre District to the north, Atwima-Kwanwoma District to the west, and Ejisu-Juaben District to the east and Bosomtwe-Atwima-Kwanwoma District to the south.

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3 .1.2 GOLDEN TULIP KUMASI CITY HOTEL

The Golden Tulip Kumasi City is the only four star hotel of international standard in Kumasi, 20 minutes drive from the airport and located close to the city centre of the second biggest city of Ghana. The hotel has 160 rooms consisting of apartments, suites, deluxe, executive, superior and standard rooms. It offers a restaurant, bar lounge, pool bar, business centre, swimming pool, casino, tennis courts, beauty salon, car rental, an 18-hole golf course and a forex bureau.

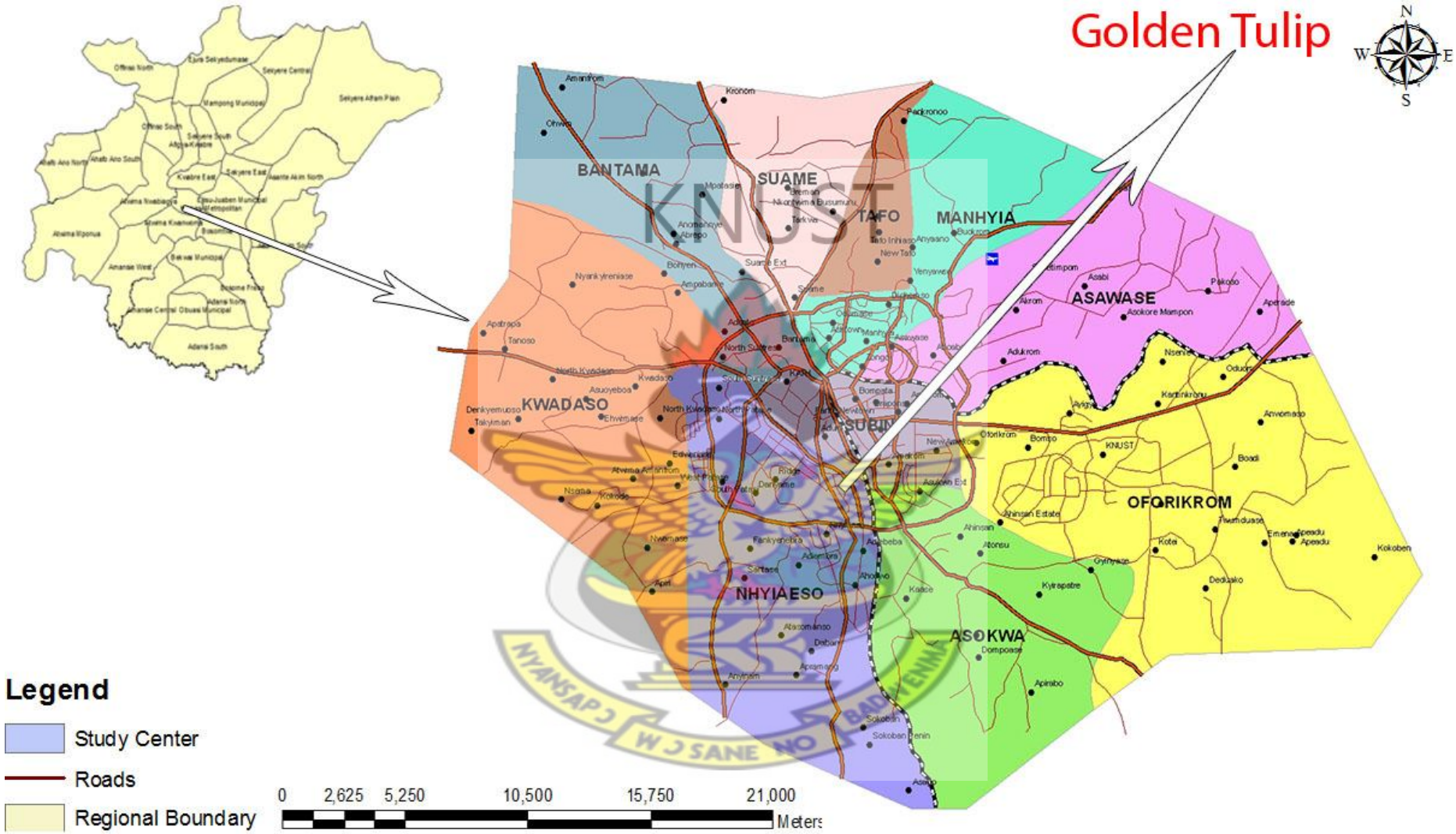

Plate 3.1: Map of the Study Area

Plate 3.2: pictures from site showing the poolside

Plate 3.3: Pictures from the back view of the hotel

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3.2 THE INITIAL ENVIRONMENTAL REVIEW (IER)

3.2.1 INTRODUCTION

The organisation has no EMS according to ISO 14001 in place, but it has a self designed Environmental Management Practice dubbed “Golden Tulip Goes Greener”. So, the first step

was to review its current position with regards to the environment. The aim was to assess the existing Environmental Management Practices so that the research will not end up designing a system that is alien to the one already in place. Building on the existing organizational processes and procedures rather than to create new elements will ensure success at various levels.

3.2.2 METHODOLOGY

The review was conducted using the following methods:

- Initial Environmental Review Check list designed according to ISO 14001 Standard.
- Site observation.
- Informal interview with relevant personel.
- Examination of appropriate documents.

3.3.1 IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS

3.3.2 IDENTIFICATION OF ENVIRONMENTAL ASPECTS

The environmental aspect of the hotel encompasses the facilities present, activities and services offered that have impact on the environment. It is illustrated in the EMS guidelines that the environmental aspects and impacts are the key points to be managed, which shows the core role of waste management in EMS. So implementing EMS framework is the best practice for environmental management in an organisation (EN ISO 14001, 2004; Sheldon and Yoxon, 2006)

3.3.3 METHODOLOGY

To achieve the objective, a comprehensive study on the document published by The 2005 World Sustainable Building Conference, Tokyo, Green Globes 21 (GG21), International

Hotel Environmental Initiative (IHEI) benchmarkhotel, and Hilton Environmental Reporting was done.

The environmental aspects were identified by using the documents produced by International Hotel Environmental Initiative (IHEI). This was done to ensure that all relevant elements were included. An edited copy is found in Appendix A.

3.3.4 IDENTIFICATION OF ENVIRONMENTAL IMPACTS

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Impacts are referred to as a deviation from a baseline situation (the current state of the environment in the project area and the future situation without the project intervention)

3.3.5 METHODOLOGY

The impacts were identified by relating the environmental aspects (activities, services and facilities) to the baseline situations. It covers all three environmental components and their elements which are Physical (geology, topography, soils, air, climate etc.), Biological (flora, fauna, biodiversity, ecosystems), Socio-economic (population, housing, local values, religion, local services, economic base and socio-cultural).

3.3.6 SIGNIFICANCE OF IMPACTS

It's the judgment of the magnitude, extent, reversibility and directedness of anticipated change on the environment caused by a proposed project. Current evaluation of significance is "simple and often pragmatic, drawing on the experience and expert opinion, rather than on complex and sophisticated analysis" (Glasson et al., 2001)

3.3.7 METHODOLOGY

This was achieved by relating the environmental impacts to legal requirements, scientific standard and social acceptability such as air quality standards, effluent standards etc. To make it quantifiable the Numerical-Based Assessment was used.

3.3.8 NUMERICAL-BASED ASSESSMENT

The approach is to apply numerical values to assess the significance of the aspects instead of responding positively or negatively to a given question (criteria). Numbers are assigned to an aspect in response to a particular criteria (determined by the hotel) based on whether it could potentially have a negligible, minor, significant or major impact on the environment. Any aspect that scored either a 3 or 4 would be 'Significant."

Table 3.1: Level of significance of environmental impact.

SCALE	DESRIPTION (Response to significant criteria)
1	Negligible
2	Minor
3	Significant
4	Major

3.4 GAP ANALYSIS

Gap analysis is an environmental audit of current environmental practices compared with ISO 14001 standard. It enables managements to key out unfulfilled requirements so as to meet ISO 14001 EMS Standard

3.4.1 METHODOLOGY

ISO 14001 Environmental Management System Self-Assessment Checklist designed by Global Environmental Management Initiative was used to conduct the gap analysis.

This checklist has been developed purposely to improve facility managers' understanding of the requirements and elements of the EMS outlined in the ISO 14001 draft international

standard. It is designed to allow for a rapid self-assessment of an organization or facility to determine how closely existing management practices and procedures corresponds to the elements of the standard. The criteria of the draft standard have been rephrased in the format of a simple questionnaire, with a three part scoring system, as explained in this document. In addition to a brief guide self-scoring, a fuller description of what is required by the standard's criteria is included in the appendix. In this format, even with limited background knowledge of the ISO 14001 standard, a facility or other business manager can quickly review existing operations to determine how they measure up to the standard. This in turn can serve as the starting point of a "gap analysis" to identify management tools or system elements that might usefully be implemented in the organization to help improve overall environmental performance.

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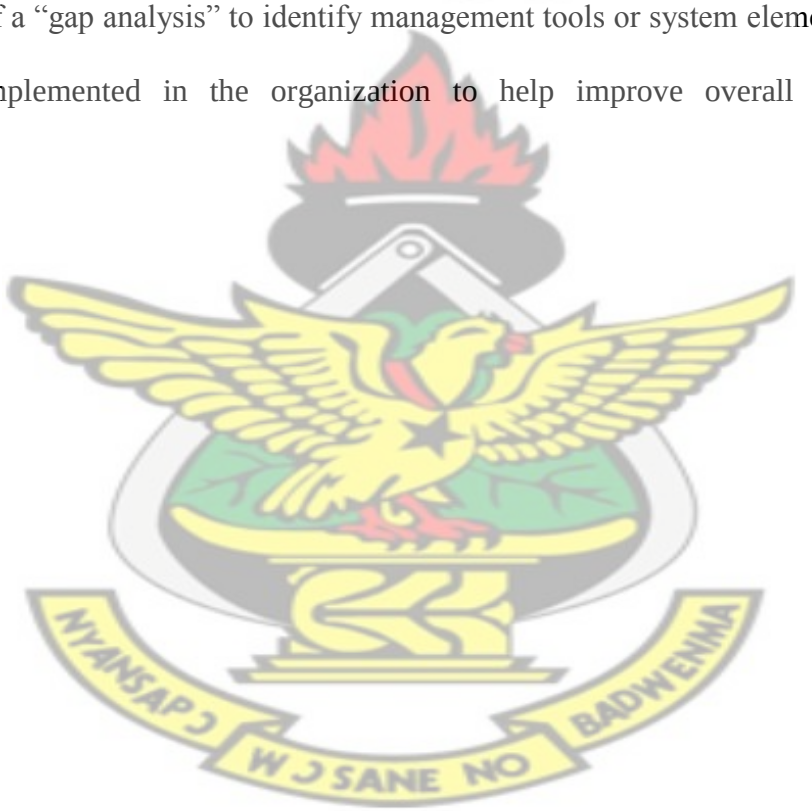

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 INITIAL ENVIRONMENTAL REVIEW

4.1.1 CHECK LIST OUTCOME

4.1.1.1 ORGANISATION STRUCTURE

Golden Tulip Kumasi City has not documented the "scope" of their Environmental Management System as required in element of ISO 14001. This could be defined as individual bullet points that list each key activity associated with the operation (including related activities that the operation has control or influence over (and also potentially those activities that may be excluded from the scope of the EMS). Golden Tulip Kumasi City have not defined and communicated the ISO 14001 responsibilities to the various levels of the organisation.

4.1.1.2 MATERIALS AND USAGE CONTROL

- The major materials used by the hotel are:

Offices and meeting rooms: IT equipment, paper, printer toner, beverage cans, cartridges, stationery, disposable cups, furniture items

Kitchen, Restaurants and Drinking Areas: Packaging waste (such as cardboard, plastic wrapper) paper mats, uneaten food, drinking straws, beverage cans/bottles

Guest rooms and other Guest facilities

News paper, magazines, beverage can/bottles, containers for personal care, plastic wrapper

Housekeeping and Laundry

Laundry bags, hangers, chemical drum, buffer pads, Bin bags

Casino

Cigarettes, cardboard, paper, aluminium, glass, food and metals

Other Sources

Obsolete furniture/electric wires/cables, etc.

- Resource use-electricity, fuel, gas and water

Electricity: cost not quantified and sourced from Akosombo HEP Dam. Used for Office, rooms, elevators, heating, cooking, air condition, lighting both internal and external etc.

Gas: Cost not quantified. Used for heating and also cooking in canteen and kitchen

Oil/Diesel/ Petrol: A back up oil fuelled generator is located on site to provide electricity in case of disruption of supply. Staff vehicles are not fuelled on site.

Water: Showers, toilets, cleaning, cooking, watering lawn, swimming pool, laundry etc. Water control policy or conservation measures are to: Check toilet flush valves regularly for any water leaks. Repair at once all leaks, dripping faucets and shower heads,

Electricity conservation measures: Use additional fry units, boilers oven etc. Only for peak business hours. Clean heating elements regularly. Keep the light off whenever any function area is left vacant. Turn off guest room lights when rooms are not physically occupied. Condenser tubes are kept clean.

Fuel conservation measures: Service plant regularly for efficiency, check fuel lines for leaks, check combustion control in order to maintain maximum efficiency.

- Materials Storage and Handling

Stationery store and loading bay: Storage space for bulk paper, other stationery on pallets, boxed used printer tonners and IT equipment destined for recycling. No spill potential in this area as liquids is not present.

Cleaners room: Cleaning materials and equipments are stored in small rooms. Containers of cleaning chemicals were neatly stored. As storage is indoors any drainage will be noticeable and easily mitigated.

Kitchen/Store room: Refrigeration unit for storing foodstuff, meat, fish, slaughtered birds. Containers for other fruits, vegetables etc. Any leakages are noticeable**.**

Office and Meeting Rooms: Paper, IT equipment and stationery are present here. These pose no environmental risk in these locations

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Fuel Storage Tank: No information was available on the condition or inspection regime. However, levels of fuel are monitored during the weekly test, when any loss due to leakage would be noticed.

4.1.1.3 WASTE WATER MANAGEMENT

Wastewater sources:

Guest rooms: toilet flushing and showering

Laundry and dry cleaning schedule, washing machine operation.

Kitchen: food preparation, cooking activities.

General cleaning.

Wastewater minimisation measures: Push button taps installed in new reception area toilets. Toilet cisterns (water tanks) have been fitted with water saving devices. Install water-saving shower, Initiate washers and dryers only with full load.

Wastewater discharges through laid down pipes to the nearby stream.

4.1.1.4 AIR EMISSION MANAGEMENT

Air emission sources: Kitchen and laundry exhaust, Swimming pool, Boilers, Vehicle, Fire-extinguishers, Use of CFC-containing spray cans, Air condition system.

Characteristics of air emissions: Kitchen and Laundry exhausts- Odours, particulates, vapours and mists

Swimming pool- Chlorine and bacteriological pollutants.

Vehicles- Carbon Monoxide

Fire-extinguishers- CFCs

4.1.1.5 NOISE AND OTHER WASTE MANAGEMENT

Noise sources

Entertainment: Karaokes, Casino and Entertainment in public

Equipment and systems: Air conditioning, chillers, boilers, washing and machine operation, lawnmowers and saws in garden, cleaning and cooking in kitchen etc.

Guest rooms: hair dryer, bathtub filling and emptying, conversation, telephone, TV and radio, door closing.

Construction renovation: construction, renovation and maintenance work by engineering staff and contractors.

Noise control measures

Sound-proof strips applied to guest room doors, and hotel main entrance door.

Sound control for bar, casino and hotel music after midnight.

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Finally, it was discovered that about 60% of the workers do not know what happens to the waste in their work process and how their activities impact negatively on the environment. Some of them neither segregate waste at home nor see it as urgent to help manage the environment in the company.

4.1.2 OUTCOME OF DOCUMENT EXAMINATION

A comprehensive and an informative review was done on the current Environmental management Practices of Golden Tulip Kumasi City. Though the company is not ISO certified, it has a strong Environmental Policy called "Golden Tulip Goes Green"

Golden Tulip and Tulip Inn Management Hotels oblige themselves to:

- Conduct a proactive environment policy in all hotel departments and offices.
- Meet environment requirements, rules and regulations;
- Optimise use of energy, water and materials;
- Limit waste, and recycle when possible;
- Limit the use of harmful materials;
- Stimulate suppliers and guests to contribute to reducing the environment load.
- Share knowledge and experience with other companies in the hospitality industry.
- Provide hotel staff with the information and means to reach the Green Objectives.
- Measure the level of implementation on a regular basis
- Evaluate and adjust the measures taken that should lead to an acceptable environment load.

- Unceasingly introduce improvements to the Green Programme.

The presence of Green Teams and Environment Co-ordinators could be a valuable asset to Golden Tulip provided the top management shows high level of commitment and make provision for adequate training.

4.1.2.1 DISCUSSION

On paper, The Green Team and Environment Co-ordinators are to submit Environmental Management Actions which is to be undertaken in each action area. The list is compiled into a series of department and operation specific-action checklists called 'Golden Tulip Goes Greener, Water/Energy/Waste/Chemicals Tips'. The checklists are distributed to all Green Teams, which use them in the implementation of environment action.

To help maintain enthusiasm and continued environment action, the Green Teams have been given broad environment performance targets and standards for each action area. This has also helped shape systematic environment-monitoring and data-recording procedures across Golden Tulip Hotels and Tulip Inns.

Occasionally, a section of the environment is reported in the Golden Tulip Hotels' social report

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4.1.3 OBSERVATIONS

4.1.3.1 DISCUSSION

Table 4.1: Observations and personal comments.

OBSERVATION	COMMENTS
This report covers a larger fraction of the activities, facilities and services of Golden Tulip-Kumasi City.	A total review of all their activities, services and facilities will result in a greater opportunity for savings, improved legal compliance and reduction of environmental impact.
Data for use of utilities are held at management level and are not well communicated to the workers.	Wider communication of energy and water usage would help engage the entire staff in efficiency measures (a suggestion from the staff)
It is suspected that lighting is left on overnight especially on corridors and small rooms.	This point should be taken up with cleaners, curators and security staff who are present.
It appears that air conditioning is sometimes left on overnight due to staff and guests using local controls.	Reset controls on local and master panels so this cannot happen. If possible a particular individual must be assigned such a task.
No information was available about hazardous wastes generated by maintenance (such as paint, tins and thinners), gardening, spraying etc. It was observed that such wastes were untreated and allowed to flow through the drains. As seen in plate 4.1	Personel must be appointed to separately collect such waste and treat them before discharge.
Waste bins were not placed behind the building and this has led to rampant littering as seen in plate 4.1	There must be enough placements of bins around to collect waste. Bins must not be limited to the entrance and at the forecourt of the building.
Cleaners have on occasion mixed different waste together.	Discuss with cleaning contractor how this can be stopped. Using transparent sack may be one approach.

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4.2 IDENTIFICATION OF ENVIRONMENTAL ASPECT AND IMPACT

Using the check list designed by IHEI the following information were gathered as illustrated in Table 4.2, 4.3 and 4.4

Table 4.2: Environmental aspects and their impacts on the biophysical environment, energy and water supply, at Golden Tulip Kumasi City.

EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP KUMASI CITY	IMPACT ON THE ENVIRONMENT	POTENTIAL IMPACT ON THE SPECIFIC THE ENVIRONMENTAL COMPONENTS				
			BIOPHYSICAL	SOCIO-ECONOMIC	CULTURAL & HISTORIC	ENERGY & WATER SUPPLY	ACCESS & CIRCULATION
Number of rooms (all in use)	160						
Restaurant	√	Increased waste and disposal of unsorted waste	√				
Kitchen	√	Odours and vapours released to air. Particulates (CO, CO_2) released. Overloading of sewage sytems, increase in waste.	√				
Kitchenettes in chalets	×						
Gas cylinders for cooking	√	Accidental leaks can lead to contamination of air and other health risk	√				
Refrigeration units	√	Atmospheric Ozone depletion (leaks of refrigerants)	√			√	
CO_2 drinks dispensers	√	CO_2 released to air (leaks)	√				
Air conditioning	√	Potential atmospheric Ozone depletion and increase in microclimate temperature resulting from the release of heat.	√			√	
Laundry	√	Steam and chemical vapours released to air. Contamination of soil and water	√				
Borehole water	√	Over abstraction of water from the aquifer can affect the water table.	√				
Municipal water	√	Excessive use leading to depletion of natural resource	√				
Abstraction from the river for potable water	×						
Water purification plant	√	Increase in water and energy use	√			√	
Municipal sewage removal	×						

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Water treatment plants(Sewage treatment plant)	√	**Odours and gases (Chlorine) released to the atmosphere. Release of toxins, nutrients and pesticides into water bodies**	√				
Backup generator	√	**Emission of green house gases and particulate pollution.**	√				
Swimming pool	√	**Air pollution (Chlorine evaporation)**	√				
Sauna/steam baths	√	**Release of heat into the atmosphere**	√			√	
Outdoor entertainment area	√	**Noise pollution (noisy activities)**	√				√
Health club	×						
Outdoor sports facilities	√	**Noise pollution (noisy activities)**	√				
Beauty salon	√	**Contamination of soil and groundwater (incorrect disposal of redundant chemical)**	√				
Gardens	√	**Increased Waste (organic waste), utilizing water for maintenance**	√				
Curio shop	×						
Convenience store	×						
Waste area	√	**Seepage from waste yard not managed correctly. Contamination of soil, particulates (resulting from burning)**	√				
Storage yard	×						
Fire extinguishers	√	**CO_2 released to air (Leaks from fire extinguisher)**	√				
Fuel storage tanks	√	**Release of SO_x, NO_x, CO_2 to air (leaks or spills)**	√				
Electrical water heaters	√	**Waste heat discharged into water**	√			√	
Water heaters using natural energy	×						
Fireplaces	×						
Elevators	√	**Utilising energy**				√	
Water features	√	**Increase in water use (fountain, pond, pool)**	√			√	
Delivery vehicles	√	**Air pollution from emission of NO_x SO_X**	√				
Courtesy vehicles	√	**Air pollution from emission of NO_x SO_X**	√				

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Table 4.3: Environmental aspects and their impacts on the biophysical environment, at Golden Tulip Kumasi City

EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP KUMASI CITY	IMPACT ON THE ENVIRONMENT	POTENTIAL IMPACT ON THE SPECIFIC THE ENVIRONMENTAL COMPONENTS				
			BIOPHYSICAL	SOCIO - ECONOMIC	CULTURAL & HISTORIC	ENERGY & WATER SUPPLY	ACCESS & CIRCULATION
MEALS							
Breakfast only	√						
Breakfast and dinner only (half board)	√						
Three meals and full buffet (full board)	√						
Twenty-four-hour room service	√						
OTHER CATERING	×						
Functions	√	Noise and Light pollution	√				
Conferences	√	Noise and light pollution	√				
ROUTINE OPERATIONAL ACTIVITIES	×						
Cleaning services	√	Contamination of air with Noxious or Corrosive gases (accidental spillage of agents)	√				
Garden maintenance	√	Over watering (possibility of soil erosion), Application of chemicals.	√				
General building maintenance	√	Fuel, chemical spills and gases during maintenance (soil contamination), fertilizer, pesticides, oil base paint.	√				
Vehicle washing	√	Contamination of surface water from washed detergents	√				
Servicing of vehicle fleet	×						
RECREATIONAL ACTIVITIES							
Horse riding-horses kept on site	×						
Game drives	×						
Golfcourse-18holes	√	Contamination of surface water from washed fertilizer into storm water system, loss of diversity	√				
River rafting	×						

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Swimming pool	√	Contamination of surface water resulting from backwash water released into storm water, contamination of soil and groundwater with hazardous material, evaporation of Chlorine	√				
Volley ball courts	√	Noise Pollution	√				
Squash courts							
Walking/running trails	×						
Bowling green	×						
Children's play area	√	Noise pollution	√				
Gymnasium	√	Noise pollution and utilizing energy	√			√	
Sauna	√	Utilising water and energy during operation	√			√	

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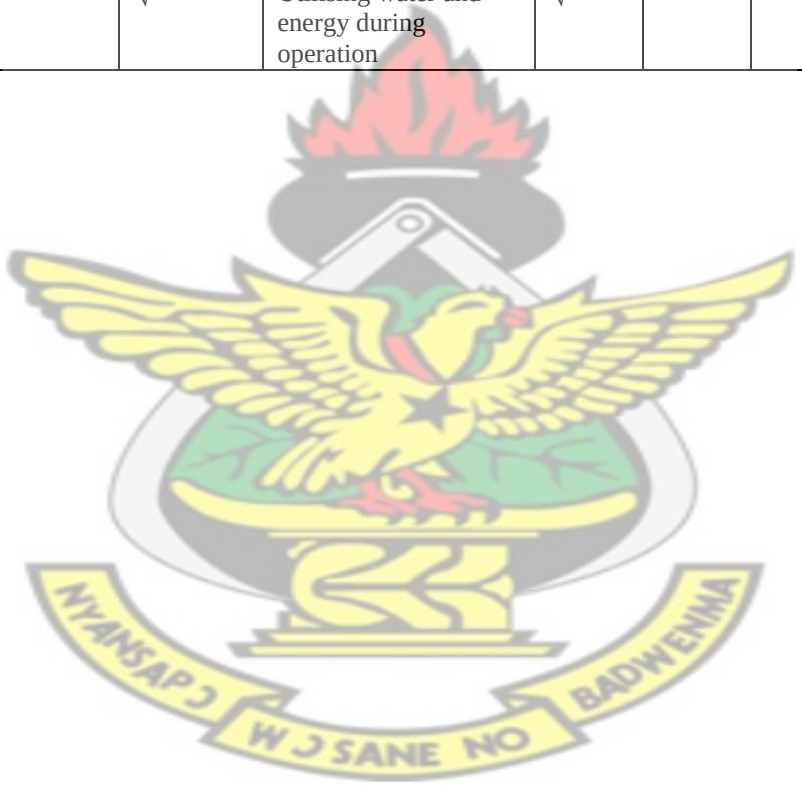

Table 4.4: Environmental aspects and their impacts on the socio-economy, cultural and historic, energy and water supply and access and circulation, at Golden Tulip Kumasi City.

EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP HOTEL	IMPACT ON THE ENVIRONMENT	POTENTIAL IMPACT ON THE SPECIFIC THE ENVIRONMENTAL COMPONENTS				
			BIOPHYSICAL	SOCIO-ECONOMIC	CULTURAL & HISTORIC	ENERGY & WATER SUPPLY	ACCESS & CIRCULATION
Unplanned access to guest	√	Unplanned access to guests will lead to uncontrolled access into sensitive area causing damage.					site/area
Uncontrolled movement of guests	√	Uncontrolled access to sensitive area causing damage			Areas of cultural/archeological interest		Site/area
Promoted job opportunity	√	Economic upliftment					Site/area
Employment (Large youth & young adult population	√	Economic upliftment resulting from the large youth & young adult population		√			
Access for disabled to be provided	√	Guest comfort		√			
Providing Charity or Education drives	√	Social upliftment (Community Liaison)		Community involvement education			
Support or drive environmental awareness programmes	√	Increase environmental awareness		√			
Large functions or events drawing crowds	√	Traffic increase and congestion					√
Spotlights illuminating from the buildings entrances and outdoor sports facility	√	Visual intrusion/Light Pollution			√		
Achitectural style or colours not blending into the surroundings	√	Visual Pollution			√		
Music at functions/Public address system	√	Noise Pollution (from outdoor entertainment area)			√		
Noisy activities/games/players	√	Noise pollution (from outdoor sports facilities & swimming pool)			√		

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Tables 4.3, 4.4, and 4.5 consist of the environmental aspects and their subsequent impacts on the identified environmental components. The hotel offers both internal facilities such as casino, conference etc. and external facilities such as tennis court, swimming pool etc.

In all, there are fifty-one (51) environmental aspects in the hotel. The aspects were related to the components of the environment to identify the impact. For example, in case there is an accidental spillage of Chlorine in the process of chlorination of swimming pool, the following impact will occur: emission of chlorine into the atmosphere, and contamination of land and surface water.

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4.3 SIGNIFICANCE OF IMPACT

Numbers were assigned to the aspects (refer to appendix (B)) in response to their propensity to have a negligible, minor, significant and major impact on the environment.

The percentage of each scale was computed by dividing the number of aspect in a scale by the sum total of the aspects and multiply them by hundred as mathematically expressed below;

Scale = (Number of aspects/Total number of aspects) * 100

Environmental aspect (total) = 54

Scale 1 = 17 = (17/54) * 100 = 31.5%

Scale 2 = 21 = (21/54) * 100 = 38.9%

Scale 3 = 16 = (16/54) * 100 = 29.6%

Scale 4 = 0

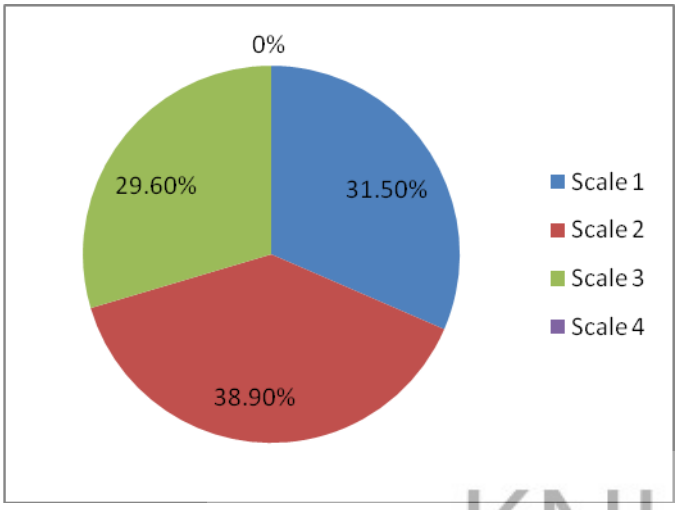

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Figure 4.1: Percentage of environmental aspect and their level of significance.

From figure 4.1, the environmental impact of 31.50% of the aspect consisting of facilities such as children play area, bore hole etc. is negligible. Likewise 38.90% of the total aspect consisting of gas cylinders for cooking, outdoor sports activities, sauna/steam bath and others has a minor impact on the environment. Finally, 29.60% of the aspects such as swimming pool, water/sewage treatment plant, electrical water heaters etc have a significant impact on the environment.

In conclusion, 29.60% which is equivalent to 16 aspects of the sum total of the 54 aspects has a significant impact on the environment. Therefore, those aspects must be soundly managed to reduce its impact on the environment.

4.4.1 GAP ANALYSIS

4.4.2 Principle 1: Commitment and Policy

The environmental policy is the driver for implementing and improving the organisation's environmental management system.

Golden Tulip has no clear cut environmental policy, its policy lacks most of the key elements, such as a commitment to continual improvement, required to fulfil the terms of the standard.

4.4.2.1 DISCUSSION

The environmental policy partially reflects the nature, scale and environmental impacts of its activities, products and services

Also, the environmental policy does not commit to continual improvement and it has not been communicated to all employees (eg. There's no procedure to ensure that new employees receive a copy of the environmental policy)

There is no procedure to ensure the policy is regularly reviewed and adapted to the changed perceptions and circumstances (i.e. Maintained)

Finally, the environmental policy is not made public.

4.4.3 Principle 2: Planning

An organization should formulate a plan to fulfil its environmental policy.

The hotel has made progress in identifying most of its environmental aspects as well as the legal requirement to which it is subject, and might have established some objectives and targets which its environmental management program is designed to achieve, much progress is still required.

4.4.3.1 DISCUSSION

The existing procedures are insufficient to determine which environmental aspects can have a significant impact on the environment.

Also Golden Tulip does not keep up to date information regarding its environmental aspects.

The environmental objective and target of the hotel do not consider environmental aspects and technological options.

No procedure exists to ensure that these objectives and targets are reviewed and maintained regularly. Also they do not cover all the relevant functions and levels of the organization.

Finally, the objectives and targets are not time bound.

4.4.4 Principle 3: Implementation and Operation

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For effective implementation, an organization should develop the capabilities and support mechanisms necessary to achieve its environmental policy, objectives and targets.

The existing procedures do not fully take into account all environmental aspects at all levels and activities of the hotel. Specific responsibilities and accountabilities might not be sufficiently communicated throughout the organization. Sufficient resources and technical competencies might yet be lacking.

4.4.4.1 DISCUSSION

Top management has appointed specific environmental management representatives but the roles, responsibilities, and authority of the individual have not been defined or documented. They are also not communicated to personnel.

Management of Golden Tulip has allocated some of the essential resources, such as human but not financial and among them few have received the requisite training.

It was discovered that only a few personnel in the departments have been made aware of environmental issues.

In addition, no procedure exists for ensuring that all new employees receive appropriate training and awareness and not all personnel performing the relevant tasks meet the minimum educational/training or experience.

External communication procedures are not effective and documents are not periodically reviewed and revised.

There's no system to periodically review and revise procedure for potential, environmental incidents, accidents and emergency situations.

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4.4.5 Principle 4: Checking and Corrective Action

An organization should measure, monitor and evaluate its environmental performance.

Golden Tulip has few, if any, procedures that have been developed or implemented for checking the performances of the EMS and its component elements; and thus, areas of non-conformance cannot be adequately identified; as a result, corrective or preventive measures cannot be effectively taken.

4.4.5.1 DISCUSSION

Procedures for monitoring key characteristics of the operations and activities of Golden Tulip are not periodically reviewed and sometimes the results are not well documented.

The procedures existing for evaluating compliance with relevant regulatory requirements do not cover all aspects of operations, products and services of the hotel. Also not all records relative to conformance are maintained.

Finally, audit procedures are not fully comprehensive.

4.4.6 Principle 5: Management Review

An organization should review and continually improve its environmental management system, with the objective of improving its overall environmental performance. The top management of Golden Tulip-Kumasi City Hotel has no well defined plans and arrangements to review the EMS to ensure continuing suitability, adequacy and effectiveness of the system.

4.4.6.1 DISCUSSION

There's no schedule for periodically reviewing the EMS. The review process is not adequate to ensure that the necessary information is collected to allow it to carry out the evaluation.

In summary, though there's no well structured EMS system in place, some of the basic elements were partially met.

Based on the information gathered a workable EMS in accordance with ISO 14001 Standard is designed below to fulfil the main objective of the research. For the sake of system familiarity, compatibility and adaptability the existing Environmental Management Practices of the company would be built on, after their unfulfilled requirements are now known.

4.5A WORKABLE GUIDELINE FOR EMS IMPLEMENTATION

The EMS is designed in accordance with ISO 14001 standard. As stated earlier on for full participation, the views and opinions of the various stakeholders involved were sought.

Table 4.5 : Guidelines for EMS implementation

Standard	Hotel management	Environment Professional	Duties
Environmental Policy	General Manager, H R Manager, Chief Engineer, Sales &	Environment Officer	The Environment Officer should assist the Hotel management to come up with Environmental Statement of Commitment that shows commitment to environmental protection, continuous improvement, complying with all legal and regulatory

	Marketing Manager		standards, capturing all the environmental aspects identified and ensuring that the policy reflects the nature, scale and environmental impact of its activities, products and services. He must ensure the policy is communicated to all employees and copies are made to new employees. Finally, there should be a procedure that the policy is regularly reviewed and adapted to the changed perception and circumstances,
Environmental Aspects	General Manager Chief Engineer, Technical Services Dept.	Environment Officer	The Environment Officer should review environment risk assessment of their services, activities and existing facilities identified during my study to ensure that all the environmental aspect of the hotel that pose significant environmental risk are captured.
Legal and Other Requirements	General Manager, H R Manager, Chief Engineer,	Environment Officer	The Environment Officer should assist the hotel management to establish, implement, and maintain procedures to identify and have access to the applicable legal requirements and other requirements to which the organisation subscribes related to its environmental aspect and determine how these requirements apply to its environmental aspects. He should consider making a chart to track existing legal and other requirements (permits, external audits, reporting etc.). He should determine how to keep up-to-date on legal requirements and determine how new regulatory information will be communicated to affected employees.
Objectives Targets and Programme(s)	General Manager, H R Manager	Environment Officer	The Environment Officer should ensure that the environmental objectives and targets are measurable, practicable and consistent with the environmental policy, environmental aspects, legal requirements and other requirements to which the organisation subscribes. He will design a programme to ensure that the objectives and targets are achieved; the programme will also determine the time-frame and the budgeting process.
Organisation and Responsibility	H R Manager,	Environment Officer	The Environment Officer should ensure the availability of resources (human, technological, financial etc.) needed for a successful establishment, maintenance and implementation of the EMS. He will

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			also ensure that individual roles, responsibilities and authorities are defined, documented and communicated to personels. Finally, he will report to top management on the performance the EMS for review and recommendations for improvement.
Training, Competency & Awareness	H R Manager, Guest Services Manager, Experience Manager, Sales and Marketing Manager	Environment Officer	The Environment Officer should ensure that any person(s) performing tasks are competent on the basis of education, training and experience. He should identify needs, provide training or take other action to meet those needs. He will also establish, implement and maintain procedure(s) to make persons working to be aware of the importance of conformity with environmental policy, the significant environmental aspects and their individual roles and responsibilities in achieving conformity with the requirements of EMS.
Internal Communication & Reporting	General Manager H R Manager, Guest Services Manager	Environment Officer	The Officer should establish, implement and maintain procedures for internal communication among the levels of the organisation. This may include the use of regular work group meetings, newsletters, bulletin boards and intranet sites.
External Stakeholder Engagement & Reporting	General Manager H R Manager, Sales and Marketing Manager	Environment Officer	The Officer should establish, implement and maintain procedures for receiving, documenting and responding to relevant communication from external interested parties. This procedure may include a dialogue with interested parties and considerations of regular concerns.
Documentation	H R Manager	Environment Officer	The Officer should ensure that the documentation is sufficient to describe the EMS and how its parts work together, and to provide direction on where to obtain more detailed information on the operation of specific parts of the EMS. He must also ensure that proper account of confidential business information are taken and all procedures are well documented.
Control of Documents	H R Manager	Environment Officer	The Officer should ensure that documents required by the EMS and ISO standard are controlled. He should establish, maintain and implement procedures to approve documents, review and update as necessary and re-approve documents,

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			ensure that changes and the current revision status of documents are identified, ensure that documents remain legible and readily identifiable etc.
Standard Operating Procedures	Chief Engineer, Sales and Marketing Manager	Environment Officer	The Officer should evaluate those operations that are associated with its identified significant environmental aspects. He should also establish documented procedure(s) to prevent deviation from environmental policy and the objectives and targets. He should ensure that operational criteria are stipulated in those procedures and all procedures must be reviewed and adapted periodically. Finally, relevant procedures be well communicated to suppliers.
Emmergency Preparedness and Response	Chief Engineer, House Keeping Staff, Kitchen Supervisor, Technical Services Department	Environment Officer	The Officer should establish, implement and maintain procedure(s) to identify potential emergency situations and potential accidents that can have an impact(s) on the environment and how he will respond to them. He should respond to actual emergency situations and accidents and prevent or mitigate associated adverse environmental impacts. He should periodically review and, where necessary, revise its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations. He must ensure that the organisation periodically test such procedures where practicable.
Monitoring & Measurement	Chief Engineer	Environment Officer	The Officer should establish, implement and maintain a procedure(s) to monitor and measure, on a regular basis the key characteristics of its operations that can have significant environmental impact. He must also ensure that calibrated or verified monitoring and measurement equipment is used and maintained and shall retain associated records.
Evaluation of Compliance	Chief Engineer	Environment Officer	Consistent with its commitment to compliance, he should establish, implement, and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements and other requirements to which the organisation subscribes. Finally, he must

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			keep records of the periodic evaluations.
Nonconformity Corrective Action & Preventative Action	Chief Engineer, Housekeeping Staff	Environment Officer	The Officer should ensure that the knowledge gained from the information obtained from the data collected from monitoring and measurement is used to implement corrective and preventive action. He must establish and document defining responsibility and authority for handling and investigating incidences of non-conformance. Procedures for defining responsibility and authority for taking action to mitigate any impacts caused by non-conformance and for initiating and completing corrective and preventive action must established and documented.
Control of records	H R Manager	Environment Officer	The Officer should establish, implement and maintain a procedure(s) for identification, storage, protection, retrieval, retention, and disposal of records. He must also ensure that the records remain legible, identifiable and traceable to the activity, product or service involved. He must ensure that all records required to demonstrate conformity to this standard (including regulatory compliances) are maintain.
Internal Audit	Chief Engineer	Environment Officer	The Officer must establish, implement and maintain a program and procedure(s) for periodic Environmental Management Audits. He must ensure that information on the results of the audits is provided to management.
Management Review	General Manager, H R Manager	Environmental Officer	The Officer must ensure that top management has reviewed the EMS to ensure continuing suitability, adequacy and effectiveness. He should help top management to determine the interval at which it will review the EMS and ensure that every review is documented.

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4.6 ENVIRONMENTAL MANAGEMENT PROGRAMME

The environmental management programme otherwise known as environmental action plan is an adequately resourced action plan to bring the environmental objectives and targets to life. It is the mechanism that implements the environmental policy.

The environmental action plan in the hospitality industries consist of the following action areas

- Reducing water use and wastewater output
- Lowering energy consumption
- Reducing waste output
- Purchasing environment – preferable products
- Lowering emissions, including of ozone-depleting substances
- Improving the indoor environment
- Lowering noise
- Internal communication to guests
- Environment communication to guests
- Monitoring and documenting progress

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Table 4.6: A typical EMP for the hospitality industry

Objective/Target	Action	Budget	Deadline	Department Concerned
Reducing water use and wastewater output	-Maintaining water quality -Managing water storage and distribution work by turning over water frequently to avoid bacteria build up, covering and protecting storage tank openings from sources of contamination -Reducing water use by repairing leaks and dripping pipes, running washing machines and dishwashers only at full load, encouraging employees to save water, invite guests to reuse towels and linen, placing volume reducers in toilet cisterns, installing pressure flush valves on toilets and urinals, install chemically purified urinals that do not use water, - Reducing wastewater output -Purifying water for swimming pool through the process of ionization and ozone -Monitoring water consumption by using meters and benchmarking water use on the basis of guest nights or visitor numbers -Reusing treated wastewater for irrigating and other non-drinkable uses, -Maintaining water supply quality	Not decided	Not decided	Not decided
Lowering energy consumption	-Maintenance or good housekeeping options such as to insulate hot tanks, boiler and pipes, shut down power in sections of the building that are not in use, seal gaps in wall, windows, doors, roofs and floor. -Repair, retrofit, refurbishment options such as controls for heating and hot water, sealing and stripping, low energy lighting, controlled ventilation, renewable energy options, replacing old equipment.	Not decided	Not decided	Not decided
Reducing waste output	-Avoid waste at source; favour products with less packaging, invite suppliers to take back packaging, buy in bulk rather than small packs, plant Christmas tree and use them every year. -Reducing waste; Avoid using individual food portions, avoid disposable cutlery and crockery, Mulch and compost garden and kitchen, send food waste to pig farms as feed, use both sides of office	Not decided	Not decided	Not decided

	paper before disposal, switch from disposable to reusable laundry bags. -Re-use options: Re-use packaging containers, re-use glass/plastic bottles as toilet dams in cisterns, re-use leftover guest stationery, -Recycling options: Glass, plastic, paper, cardboard, aluminium, batteries.			
Purchasing environment-preferable products	-Are products being purchased that are not being used? -can the purchased of some items be discontinued? -could the purchase of toxic products be replaced with non-toxic alternatives? -Are items being purchased with high volumes of packaging? -Can the purchase and use of disposable items be discontinued? -Can more effort be made to 'buy recycled'? -Can more effort be made to buy biodegradable products? -Is preference given to environment certified products and services? -Have efforts been made to use products that require less energy? -Do suppliers and contractors have environment policies?	Not decided	Not decided	Not decided
Lowering emissions, including of ozone-depleting substances	-Regular maintenance checks on boilers and generators -Filters and scrubbers should be fitted to exhaust fans.	Not decided	Not decided	Not decided
Improving the indoor environment	-ODS management in refrigerators and freezers, air-conditioning, dry cleaning, fire-extinguishers, aerosols and foam,	Not decided	Not decided	Not decided
Lowering noise	-Good housekeeping options for noise management such as ensuring that all doors are kept closed, switching off of engines of waste removal vehicles, using rubber mountings to soundproof isolated machines -Repair and retrofit options for noise management such as to install quieter motors and fans in equipment, use sound absorbing devices to enclose entrances to noisy areas and equipment, install noise-controllers on air-cooling openings, install automatic door closing in guest rooms, install double-glazed windows, install quiet toilet-flush tanks.	Not decided	Not decided	Not decided
Internal communication to guests	-The environment status review should be used to inform employees of the company's environment commitment	Not decided	Not decided	Not decided

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	-The environment policy should be communicated to all staff. -Environment responsibility should be integrated at all levels -The environment champion and the management team should serve as the central co-ordination unit -training programmes should be developed and there should be on-the-job training			
Environment communication to guests	-Should hang a framed copy of the environment policy statement in reception -should place tent cards suggesting guests use towels and linen for longer -Should include the environment policy and information about the on-going EMP in brochures, guest information packages, and on the in-house television channel -should tell guests about the importance of saving water and energy, and reducing waste.	Not decided	Not decided	Not decided
Monitoring and documenting progress	-Should assess whether targets and objectives are being met. -Should identify plans that are not being successfully implemented -Should identify corrective and preventive actions needed to improve performance	Not decided	Not decided	Not decided

The budget, deadline and department concerned for the implementation of the action plan have not been decided yet. The decision will be taken after management meeting has been held.

4.7 IMPLEMENTATION AND OPERATION OF EMS

Support systems and capabilities must be developed to facilitate the achievement of the environmental policy, objectives and targets to ensure that EMS is implemented and it is in full operation. Therefore, management should train and retrain their staff members to help to take such roles.

ISO 14004 indicates that EMS can be effectively implemented by ensuring capability and providing support action.

4.7.1 Ensuring capability

Issues for ensuring capabilities are

a) Human physical and financial resources
b) EMS alignment and integration
c) Accountability and responsibility
d) Environmental awareness
e) Motivation, knowledge, skills and training

4.7.2 Support action

a) Communication and reporting
b) EMS documentation
c) Operational control
d) Emergency preparedness and response

4.8 MEASUREMENT AND EVALUATION

Issues considered are

- Measuring and monitoring of ongoing performance
- Corrective and preventative action
- EMS records and information management
- Audits of EMS

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4.9 REVIEW AND IMPROVEMENT

According to ISO 14001, an organisation should review and continually improve its environmental management system, with the objective of improving its overall environmental performance. It is further indicated that periodic review should be undertaken by the management team of the hotel or group to ensure the continued suitability and effectiveness of the EMS.

CONCLUSION

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It is in my humble opinion that any hotel that wishes to implement EMS must first undertake an Initial Environmental Review to establish the state of the organisation with respect to the environment. Next, the impact and the level of significance of the Environmental aspect must be identified. This will assist the management team to train and plan for the appropriate mitigation action. Also the guidelines formulated in the study must as well guide them in designing their own EMS. Next, supportive mechanisms in terms of human, technology, finance, available time, training and retraining, motivation etc. must be provided for a successful implementation. After the implementation, management should measure and evaluate the performance of the system to key out unfulfilled requirements and apply the appropriate corrective and preventive actions. Finally, there should be continual review of the system on the part of management for efficacy.

CHAPTER FIVE

CONCLUSION AND RECCOMMENDATION

5.1 CONCLUSION

To sum up all results and discussion, this chapter gives out general comments about the EMP of Golden Tulip, the research already carried out and further studies proposed.

5.2 EMP OF GOLDEN TULIP

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Golden Tulip had an Environmental Management Practice in place to manage waste collection, material handling and storage, noise emission etc. However, the gaps between the existing environmental practices and the best practices still comprehensively exist in the company. From senior management to commitment to review, every process has its own gap waiting to be managed. All these gaps have been exposed, therefore I strongly recommend that Golden Tulip-Kumasi City needs to design an EMS according to ISO Standard.

5.3 ABOUT THE RESEARCH

According to the whole process of the research with a case study at Golden Tulip-Kumasi City, it can be seen that using EMS as the framework for managing the environment will immensely benefit the company as carefully elaborated in chapter two.

The achievement of the research include

- Assisting Golden Tulip to complete the environmental aspect register and identifying the level of significance of the impacts.
- Assisting the hotel to formulate an EMP and an operational guideline to enable them to design their own EMS in accordance with ISO 14001.

5.4 RECCOMMENDATION

I strongly recommend that the guidelines formulated should be followed by every hotel wishing to implement an EMS.

In addition to that, the hospitality industry should be encouraged to adopt the system and they should establish the right attitude that, the application of ISO 14001 Standard is aimed at protecting the environment and not for economic gain.

Finally, a further study into the following is recommended:

- Develop and implement EMS in the hospitality industry
- Develop EMS training programme for the industry in Ashanti Region.

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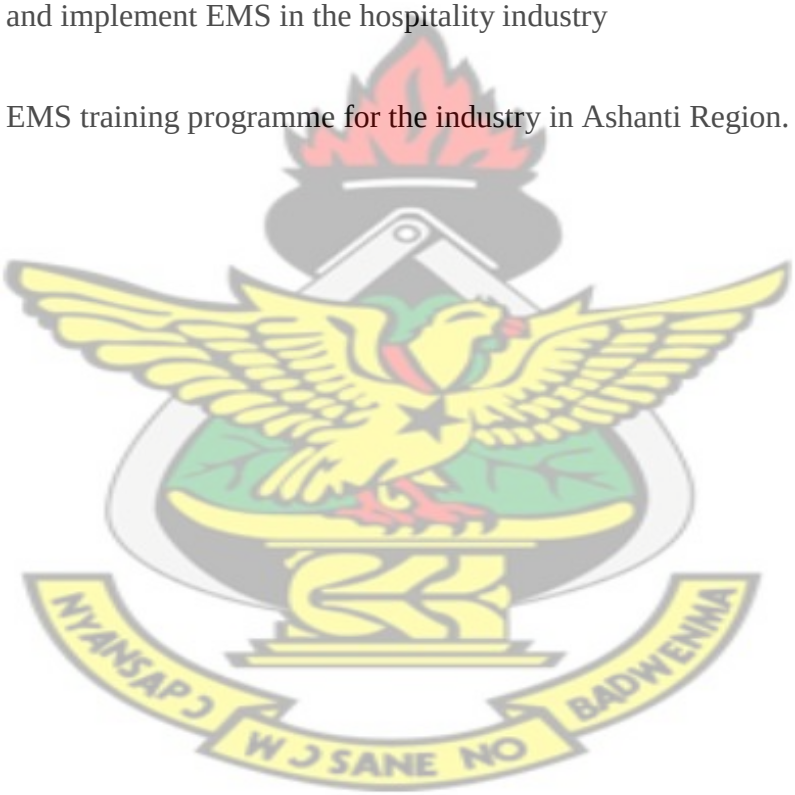

REFERENCES

Asian Development Bank. (2002). *Signing Ceremony for Small and Medium Enterprises in Bangladesh* – News release No. 238/02. [http://www.adb.org/Documents /News/nr 2002238.asp]. (12 December 2002)

Automobile Association. (2002). *Self-catering gateways suites.* Sandton: AA Travel Guides

Barrow, C. J. (2005). *Environmental Management and Development*. Abingdon, Routledge.

Bohdanowicz P. (2004). *European hoteliers' environmental attitudes: greening the business*. Cornell Hotel and Restaurant Quarterly (in press).

Chan, W.W., and Lam, J. (2002). *Environmental Accounting of Municipal Solid Waste Originating from Rooms and Restaurants in the Hong Kong Hotel Industry, in Kaye, K.S and Chon (eds)*, Journal of Hospitality and Tourism Research, vol. 25, no. 4, Sage Publications

COPELAND (1990). *Valuation: Measuring and Managing the value of Companies*. John Wily & Sons.

Davies, T., and Cahill, S. (2000). *Environmental Implications of the Tourism Industry* in Resources for the Future. Washington, USA.

EMAS (2004). *Eco-Management and Audit Scheme registered list*. Retrieved from http://europa.eu.int/comm/environment/emas/index_enhtml (22nd February, 2012)

Emilsson, S., and Hjelm, O. (2002). *Implementation of standardised environmental management systems in Swedish local authorities: reasons, expectations and some outcomes*

KNUST

Envirowise (2004). *200 Tips for Reducing Waste*. http://www.envirowise.gov.uk/page.aspx?o =117878 (22nd February 2012)

EUHOFA., IH&RA., and UNEP (2001). *An Environmental Teaching Pack for the Hospitality Industry*. Retrieved from http://www.unep.fr/shared/publications/pdf/2991-HospitalityIndustry.pdf (22nd February, 2012)

Fuggle, R. F., and Rabie, M.A. (2000). *Environmental Management in South Africa.* Cape Town: Juta and CO.

Global Environmental Management Initiative. (1996). *Environmental Self – Assessment Program ESAP*. Washington. http://www.gemi.org/GEMIPublications.aspx (22nd February, 2012)

Glasson, J., Therivel, R., and Chadwick, A. (2005). *Introduction to Environment Impact Assessment*. Oxon, Routledge.

International Hotel Environmental Initiative (2002). *Hotels care: Community action and responsibility for the environment*. IHEI, London, UK.

International Standardisations Organisation (1996). *ISO 14001*: *Environmental Management Systems- Specifications with guidance for use*. Geneva.

ISO 14004. (1996) *EMS – General Guidelines on Principles, Systems and Supporting Techniques*.

Joseph, Cascio, et al. (1996). *ISO 14000 Guide*. McGraw-Hill.

Legacy Management. (2012). *Environmental Management System Model*. http://www.lm.doe.gov/ems/model.htm. (22nd February, 2012)

Petts, J. (1999). *Public Participation and Environmental Impact Assessment.* UK

KNUST

Rada, J. (1996). *Designing and building eco-efficient hotels*. Green Hotelier Magazine 4, pp. 10-11

RAPPAPORT (1986). *Creating Shareholder Value: The New Standard for Business Performance*. New York : Free Press

Richard, W. (2002). *Corporate Environmental Management*. London : Earthscan Publications Ltd.

Sheldon, D., and Yoxon, M. (1999). *Installing Environmental Management Systems: A step-by-step guide*. London : Earthscan Publications

Sheldon, D. (1997). *ISO 14001 and beyond: Environmental Management Systems in Real World*. Greenleaf, Sheffield.

Sheldon, C., and Yoxon, M. (2006). *Environmental Management Systems: A Step-by-Step Guide to Implementation and Maintenance*. London: Earthscan.

Stuart, R. (2000). *Environmental Management Systems in the 21st Century*. Chemical Health and Safety (November-December): 23

TIBOR/FELDMAN (1996). *ISO 14000*. Chicago: Irwin Professional Publishing.

Transformation Strategies. *Supporting ISO 14000 and Environmental Management. ISO 14000 Environmental Management Benefits* http//WWW.transformationstrategies.com (22nd February 2012)

Welford, R. (1994). *Where are we now and where are we going? Cases in Environmental Management and Business Strategy*. London : Pitman 3-15

KNUST

Werner, H. (2000). *EMAS 2000: A dynamic Instrument for Environmental Protection and Sustainable Development: Mediterranean Region Issues*. International Network for Environmental Management (INEM)

Wöber, K.W. (2001). *Benchmarking for tourism organizations - an eGuide for Tourism Managers*. National Laboratory for Tourism and eCommerce.

United Nations Environment Programme. (2001). (b) *Environmental Action Pack for Hotels* . http://www.uneptie.org/pc/tourism/library/actionpack.htm (22nd February 2012)

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APPENDIX (A): Checklist for Environmental Aspect and Impact Identification

EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP KUMASI CITY	IMPACT ON THE ENVIRONMENT	POTENTIAL IMPACT ON THE SPECIFIC THE ENVIRONMENTAL COMPONENTS				
			BIOPHYSICAL	SOCIO-ECONOMIC	CULTURAL & HISTORIC	ENERGY & WATER SUPPLY	ACCESS & CIRCULATION
Number of rooms (all en-suite)							
Restaurant							
Kitchen							
Kitchenettes in chalets							
Gas cylinders for cooking							
Refrigeration units							
CO_2 drinks dispensers							
Air conditioning							
Laundry							
Borehole water							
Municipal water							
Abstraction from the river for potable water							
Water purification plant							
Municipal sewage removal							
Water treatment plants(Sewage treatment plant)							
Backup generator							
Swimming pool							
Sauna/steam baths							
Outdoor entertainment area							
Health club							
Outdoor sports facilities							
Beauty salon							
Gardens							
Curio shop							
Convenience store							
Waste area							
Storage yard							
Fire extinguishers							
Fuel storage tanks							
Electrical water heaters							
Water heaters using natural energy							

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Fireplaces							
Elevators							
Water features							
Delivery vehicles							
Courtesy vehicles							

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EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP HOTEL	IMPACT ON THE ENVIRONMENT	POTENTIAL IMPACT ON THE SPECIFIC THE ENVIRONMENTAL COMPONENTS				
			BIOPHYSICAL	SOCIO-ECONOMIC	CULTURAL & HISTORIC	ENERGY & WATER SUPPLY	ACCESS & CIRCULATION
MEALS							
Breakfast only							
Breakfast and dinner only (half board)							
Three meals and full buffet (full board)							
Twenty-four-hour room service							
OTHER CATERING							
Functions							
Conferences							
ROUTINE OPERATIONAL ACTIVITIES							
Cleaning services							
Garden maintenance							
General building maintenance							
Vehicle washing							
Servicing of vehicle fleet							
RECREATIONAL ACTIVITIES							
Horse riding-horses kept on site							
Game drives							
Golfcourse-18holes							
River rafting							
Swimming pool							
Volley ball courts							
ıash courts							
Walking/running trails							
Bowling green							
Children's play area							
Gymnasium							
Sauna							

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APPENDIX (B):Environmental impacts and the level of significance

EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP HOTEL	IMPACT ON THE ENVIRONMENT	IMPACT SIGNIFICANCE
MEALS			
Breakfast only	√		**1**
Breakfast and dinner only (half board)	√		**1**
Three meals and full buffet (full board)	√		**1**
Twenty-four-hour room service	√		**1**
OTHER CATERING	×		**1**
Functions	√	Noise and Light pollution	**2**
Conferences	√	Noise and light pollution	**1**
ROUTINE OPERATIONAL ACTIVITIES	×		
Cleaning services	√	Contamination of air with Noxious or Corrosive gases (accidental spillage of agents)	**3**
Garden maintenance	√	Over watering (possibility of soil erosion), Application of chemicals.	**3**
General building maintenance	√	Fuel, chemical spills and gases during maintenance (soil contamination), fertilizer, pesticides, oil base paint.	**3**
Vehicle washing	√	Contamination of surface water from washed detergents	**1**
Servicing of vehicle fleet	×		
RECREATIONAL ACTIVITIES			
Horse riding-horses kept on site	×		
Game drives	×		
Golfcourse-18holes	√	Contamination of surface water from washed fertilizer into storm water system, loss of diversity	**1**
River rafting	×		
Swimming pool	√	Contamination of surface water resulting from backwash water released into storm water, contamination of soil and groundwater with hazardous material, evaporation of Chlorine	**3**
Volley ball courts	√	Noise Pollution	**1**
Squash courts			
Walking/running trails	×		
Bowling green	×		
Children's play area	√	Noise pollution	**1**
Gymnasium	√	Noise pollution and utilizing energy	**2**
Sauna	√	Utilising water and energy during operation	**2**

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Appendix B continued

EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP HOTEL	IMPACT ON THE ENVIRONMENT	IMPACT SIGNIFICANCE
Number of rooms (all en-suite)	160		
Restaurant	√	**Increased waste and disposal of unsorted waste**	**3**
Kitchen	√	**Odours and vapours released to air. Particulates (CO,CO_2) released. Overloading of sewage sytems, increase in waste.**	**3**
Kitchenettes in chalets	×		
Gas cylinders for cooking	√	**Accidental leaks can lead to contamination of air and other health risk**	**2**
Refrigeration units	√	**Atmospheric Ozone depletion (leaks of refrigerants)**	**3**
CO_2 drinks dispensers	√	**CO_2 released to air (leaks)**	**2**
Air conditioning	√	**Potential atmospheric Ozone depletion and increase in microclimate temperature resulting from the release of heat.**	**3**
Laundry	√	**Steam and chemical vapours released to air. Contamination of soil and water**	**3**
Borehole water	√	**Over abstraction of water from the aquifer can affect the water table.**	**1**
Municipal water	√	**Excessive use leading to depletion of natural resource**	**2**
Abstraction from the river for potable water	×		
Water purification plant	√	**Increase in water and energy use**	**2**
Municipal sewage removal	×		
Water treatment plants(Sewage treatment plant)	√	**Odours and gases (Chlorine) released to the atmosphere. Release of toxins, nutrients and pesticides into water bodies**	**3**
Backup generator	√	**Emission of green house gases and particulate pollution.**	**2**
Swimming pool	√	**Air pollution (Chlorine evaporation)**	**3**
Sauna/steam baths	√	**Release of heat into the atmosphere**	**2**
Outdoor entertainment area	√	**Noise pollution (noisy activities)**	**2**
Health club	×		
Outdoor sports	√	**Noise pollution (noisy activities)**	**2**

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facilities			
Beauty salon	√	**Contamination of soil and groundwater (incorrect disposal of redundant chemical)**	**2**
Gardens	√	**Increased Waste (organic waste), utilizing water for maintenance**	**3**
Curio shop	×		
Convenience store	×		
Waste area	√	**Seepage from waste yard not managed correctly. Contamination of soil, particulates (resulting from burning)**	**3**
Storage yard	×		
Fire extinguishers	√	**CO_2 released to air (Leaks from fire extinguisher)**	**2**
Fuel storage tanks	√	**Release of SO_x, NO_x, CO_2 to air (leaks or spills)**	**3**
Electrical water heaters	√	**Waste heat discharged into water**	**3**
Water heaters using natural energy	×		
Fireplaces	×		
Elevators	√	**Utilising energy**	**2**
Water features	√	**Increase in water use (fountain, pond, pool)**	**3**
Delivery vehicles	√	**Air pollution from emission of NO_x SO_X**	**2**
Courtesy vehicles	√	**Air pollution from emission of NO_x SO_X**	**2**

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Appendix (B) continued

EXISTING FACILITIES(ENVIRONMENTAL ASPECTS)	GOLDEN TULIP HOTEL	IMPACT ON THE ENVIRONMENT	IMPACT SIGNIFICANCE
Unplanned access to guest	√	**Unplanned access to guests will lead to uncontrolled access into sensitive area causing damage.**	**2**
Uncontrolled movement of guests	√	**Uncontrolled access to sensitive area causing damage**	**2**
Promoted job opportunity	√	**Economic upliftment**	**2**
Employment (Large youth & young adult population	√	**Economic upliftment resulting from the large youth & young adult population**	**2**
Access for disabled to be provided	√	**Guest comfort**	**1**
Providing Charity or Education drives	√	**Social upliftment (Community Liaison)**	**1**
Support or drive environmental awareness programmes	√	**Increase environmental awareness**	**1**
Large functions or events drawing crowds	√	**Traffic increase and congestion**	**3**
Spotlights illuminating from the buildings entrances and outdoor sports facility	√	**Visual intrusion/Light Pollution**	**1**
Achitectural style or colours not blending into the surroundings	√	**Visual Pollution**	**1**
Music at functions/Public address system	√	**Noise Pollution (from outdoor entertainment area)**	**2**
Noisy activities/games/players	√	**Noise pollution (from outdoor sports facilities & swimming pool)**	**1**

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APPENDIX (C): Key for ranking the level of significance

SCALE	DESRIPTION (Response to significant criteria)
1	Negligible
2	Minor
3	Significant
4	Major

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