

**INTEGRATION OF LANDFORM AND CULTURAL DESIGN ELEMENTS IN
THE DESIGN OF AN ECO-TOURIST RESORT, PLATEAU, NIGERIA**

BY

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JULY, 2021

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**A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL, FEDERAL
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ABSTRACT

Eco-tourism the foundation of sustainable tourism development has emerged as catalyst for economic development for developing countries. The eco-tourist resort comprises of resort centres which focuses on visiting and dwelling in natural areas in order to learn, to study, to carry out environmentally friendly activities, that is tourism based on nature experience, which enables the economic and social development of local communities resulting in sustainable tourist practices. This thesis critically analyses Nigerian Eco-tourist resorts and the length of integration of landform and cultural design elements. By appealing to the descriptive method of research with the use of observation schedules, interviews, in-depth review of existing literature and purposefully selecting five eco-resorts in Nigeria. This research concludes that eco-resorts in Nigeria has integrated some key landform and cultural design elements ranging from the synergy of traditional and modern building materials, resort layouts as regards to landscape preservation and maximisation of views and adaptation of cultural elements as seen in the décor of some the selected eco-resorts, but equilibrium has not been achieved. Furthermore, a design proposal was developed from the findings that incorporated landscape and cultural elements in an eco-tourist resort in Miango, Plateau state, Nigeria. Hence there is a need to adopt recycling measure in eco-resorts and provide spaces for cultural galleries, in order minimize the environmental impacts and maximize the benefits on the local population, as well as propose homogenous designs in harmony with the locality.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of Study

Notwithstanding the sways on tourism caused by the devastation of September 11, the United Nations World Tourism Organisation (UNWTO) showed in 2007 that tourism and travel is still the world's foremost export-earning industry (UNWTO 2007). Therefore, it is seen as an economically attractive route for developing countries (Hughes, 1998). Although there is criticism of the negative effects of tourism on environmental, social and cultural conditions (UNEP 2007). These criticisms are echoed in a rising awareness and concern from consumers and an expressed preference to engage in "unique and culturally authentic travel experiences that protect and preserve the ecological and cultural environment" (Stueve & Cook, 2002).

These events have led to the development of eco-tourism, which has become a rapidly increasing sector of the tourism industry, proposing a moderately guilt-free environment in which to satisfy the desire for travel and adventure. The exponential growth of this area since 1970 has resulted in eco-tourism being hailed as the fastest growing tourism sector at the end of the century and into the new millennium (Hughes, 1998). The eco-tourism expanse has also attracted much interest from researchers, most notably within the areas of cultural studies and geography. However, there has been very little work undertaken in relation to the built infrastructure that supports the tourist experience, particularly from within the discourse of architecture. Nevertheless, architecture is inevitably part of any tourist experience and fundamental to the construction of meaning of place and identity. It forms part of the expansive space of tourism and contributes to the "culturally created spectacle" (Lasansky, 2004).

Although, this situation is only intensified in an arena where ‘nature’ is the primary focus of the experience, for both sustainability discourse in general, and eco-tourism discourse in particular, this ‘natural’ domain is seen as something that is untouched by humans, or at least by industrialised societies (Hovardas & Stamou, 2006).

Landform architecture in eco-tourism appeals to the natural discourse, landforms are natural geographic features or shapes that appears on the earth’s surface (Zawawi *et al.*, 2014). Large landforms include mountains, plains, rivers, while small landforms include hills and billabongs. Landforms are created and shaped by geographic forces of nature, such as tectonic movement and erosion, natural landscapes are made up of a variety of landforms (Zawawi *et al.*, 2014). Landform architecture serves as a combination of earthwork and framework, contributing to reconnect man-made construction with site context, human perception, and environmental considerations.

Landforms and landscapes around the world are valued by many different people for many different reasons, the value a person attach to a particular landscape often depend on factors such as age, occupation, education, cultural background and individual experiences (Choi & Sirakaya 2006). Cultural value of land is expressed through the concept of ‘country’ indigenous people believe that myths of dreamtime bind them to the land, they also believe that their ancestors lived on through the land and ensured their continuing connection with it (Briedenhann & Wickens, 2004). The cultural value land can be expressed by people through creative means such as poetry, literature and architecture.

For the purpose of these thesis the cultural value of land will be expressed through architecture, the thesis aims at integrating a strong sense of place which will be evident

in all key decisions ranging from choice of building materials, interior décor and site related practices.

1.2 Statement of the Research Problem

The need for economic diversification in most developing countries is overwhelming because of their defining mono-cultural economic characteristics where only one or two commodities dominate exports and provides the bulk of foreign exchange from which these countries could reconcile their internal and external balances. Nigeria is one of such country seeking to diversify its economy away from crude oil production to maximize employment and income generating opportunities (Ekanayake & Lonng, 2012). Nigeria has huge tourism potentials, especially given its natural and diversified landscapes but lacks effective and tourism supporting and enhancing infrastructure. Tourism is acknowledged as an effective way to revitalise the economy of any destination as noted by and widely acknowledged as one of the fastest growing industry globally (Raymond, 2001). If not harnessed, Nigeria could be missing out on an economic booster in tourism that also affords for better foreign investments.

The thesis aims at exploring the role of architecture in eco-tourism, the architectural area of emphasis which centres on landform and cultural elements where carefully selected so as to demonstrate the in-depth essence of eco-tourism.

1.3 Aim and Objectives of the Study

The aim of the project is to integrate landform strategies and cultural elements of the Irigwe people in the design of an Eco-tourist facility in Miango, Jos, Plateau State.

The objectives of this study are to;

- i. Assess the operational framework of Eco-tourist resorts.
- ii. Assess the key landform design strategies.

- iii. Assess the key cultural elements adopted in the eco-resorts in Nigeria.
- iv. Develop a design framework for the adoption of key landform and cultural design elements in a proposed eco-resort in Miango, Plateau State.

1.4 Scope of the Study

The scope of this study will focus on application of landform and cultural design elements in eco-resort design. In this vein, the scope of this study is limited to eco-design strategies adapting to natural landforms and cultural elements which to be located in Miango, Jos, Plateau state.

1.5 Limitations

The major limitation encountered is hindrance to some eco-tourist facilities near the site based on the security challenges being encountered in some remote parts of Miango especially in remote areas, hence some site related data gathered where restricted to digital mappings and photographs. Also, the limited number of resort centres that adapted landforms and cultural elements in their designs within the study area poised as a limitation.

1.6 Justification

Given the definition of tourism by the World Tourism Organization (WTO) as an activity involving the travels of persons to places outside their usual environment for not more than once for leisure, it is indicative of how such activities may benefit host and local economies and communities.

This is particularly the case as the notion of tourism has grown from the pursuit of the privileged few to the indulgence of the masses (Ayeni & Ebohon, 2012). Indeed, tourism has a range of benefits both to the individual tourist, tourism organizations

and the local economies and communities in terms of employment, income, and enhancement to the quality of life (Ayeni & Ebohon, 2012). Studying into cultural and landform elements in eco-resorts will truly provide vital information and possibilities that will benefit the tourism industry in Nigeria, provide the Government with passive means of boosting tourism within the nation, serve as an economic potential, provide development for the host communities and also provide relevant Architectural strategies for eco-tourism.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter seeks to establish clarity on the thesis title, deepening the focus of inquiry and seeking to evaluate already established knowledge on landform and cultural elements as well as eco-resorts with the aim of establishing a theoretical background or framework by examination of relevant literature.

2.2 The Concept of Eco-tourism

Eco-tourism is a sub-component of the field of sustainable tourism. Eco-tourism's perceived potential as an effective tool for sustainable development is the main reason why developing countries are now embracing it and including it in their economic development and conservation strategies (Hughes, 1998).

Eco-tourism, a unique subset of the tourism industry, is focused on the enhancement or maintenance of natural systems through tourism. Eco-tourism means different things to different people. To some, it is the general term that encompasses nature-based, adventure, soft adventure, and cultural tourism. The term eco-tourism was coined in 1983 by "Hector Ceballos Lascurain" a Mexican environmentalist, and was initially used to describe nature-based travel to relatively undisturbed areas with an emphasis on education.

2.2.1 Eco-tourism defined

Eco-tourism guarantees the sustainable use of environmental resources, while generating economic opportunities for the local people (Bhattacharya, Chowdhury & Sarkar, 2011). Eco-tourism itself is meant to be a sustainable form of natural resource-based tourism. Even though eco-tourism lacks a concrete definition, there are many well

recognized definitions that have formed a clear picture of its core principles, which are shown in Table 2.1.

Table 2.1: Definitions of Eco-tourism

Ceballos Lascurain (1996)	Eco-tourism is defined as travelling to relatively undisturbed natural areas with specific objective of studying, admiring and enjoying scenery and its wild animals and plants as well as existing.
Yogi (2010)	A form of tourism inspired primarily by the natural history of an area, including its indigenous cultures. The eco-tourist visits relatively undeveloped areas in the spirit of appreciation, participation and sensitivity. The eco-tourist practices a non-consumptive use of wildlife and natural resources and contributes to the visited areas through labour or financial means aimed at directly benefiting the conservation of the site and the economic well-being of the local residents.
The National Eco-tourism Strategy (Quick Start Guide to a Tourism Business, 2011)	Eco-tourism is nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable. This definition recognizes that ‘natural environment’ included cultural components and that ‘ecologically sustainable’ involves an appropriate return to the local community and long-term conservation of the resource.
World Conservation Union (Brandon, 2013)	Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature that promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations.
Weaver (2015)	Eco-tourism is a form of tourism that fosters learning experiences and appreciation of the natural environment, or some component thereof, within its associated cultural context

(Source: Bhattacharya *et al.*, 2011)

Eco-tourism tries to raise environmental consciousness by exploring ecology and ecosystems and by providing environmental type experiences. Taking part in ecology actively and getting first hand impressions of how ecosystems work influence peoples’ ways of thinking, which finally raises awareness of conservation and protection (Cheia,

2013). According to Patterson (2012), characteristics of an eco-tourism business are that it:

- i. Have a low impact upon a protected area's natural resources and recreation techniques.
- ii. Involve stakeholders (individuals, communities, eco-tourists, tour operators and government institutions) in the planning, development, implementation and monitoring phases
- iii. Limits visitation to areas, either by limiting group size and/or by the number of groups taken to an area in a season
- iv. Supports the work of conservation groups preserving the natural area on which the experience is based.
- v. Orients customers on the region to be visited.
- vi. Hires local people and buys supplies locally, where possible.
- vii. Recognizes that nature is a central element to the tourist experience.
- viii. Uses guides trained in interpretation of scientific or natural history.
- ix. Ensures that wildlife is not harassed.
- x. Respects the privacy and culture of local people.

According to Chessworth (2009), Eco-tourism has six characteristics. These are:

- i. Eco-tourism involves travel to relatively undisturbed natural areas and/or archaeological sites,
- ii. It focuses on learning and the quality of experience,
- iii. It economically benefits the local communities
- iv. Eco-tourists seek to view rare species, spectacular landscapes and/or the unusual and exotic,

- v. Eco-tourists do not deplete resources but even sustain the environment or help undo damage to the environment
- vi. Eco-tourists appreciate and respect local culture and traditions

It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artefacts from the locality. A symbiotic and complex relationship between the environment and tourist activities is possible when this philosophy can be translated into appropriate policy, careful planning and tactful practicum (Rahman, 2010).

While the details vary, most definitions of eco-tourism from Table 2.1 summarises to a special form of tourism that meets three criteria:

- i. It provides for environmental conservation;
- ii. It includes meaningful community participation;
- iii. It is profitable and can be self-sustained

2.3 Distinction between Eco-tourism and Mass Tourism

Mass tourism is seen as the more traditional form of tourism development where short-term, free market principles dominate and the maximization of income is paramount. The differences between mass tourism and eco-tourism are shown in Table 2.2.

Table 2.2: Distinct Characteristics between Mass Tourism and Eco-tourism

Characteristics of mass tourism.	Characteristics of eco-tourism.
Large groups of visitors	Small groups of visitors
Urban	Rural
Touristic general marketing activities	Eco-marketing activities.
Average prices for purposes of market penetration	High price with purpose of filtering the Market
Impact on natural environment	Little impact on the natural environment
Advanced control options	Limited possibilities of control
Management based on macroeconomic principles	Management based on local economic Principles
Anonymous relationship between visitors and local community	Personalized relationships between visitors And local community
General development goals	Local development objectives
Behaviour-oriented leisure activities/entertainment, opponents to education and training actions	Loyalty in the process of training and education for appropriate conduct for the natural environment
Intensive development of tourism facilities	Reduced development of tourism facilities

(Source: Dorobantu & Nistoreanu, 2012)

Eco-tourism is a component of sustainable tourism. In many ways, sustainable tourism exemplifies the relationship between eco-tourism and sustainable development (Bansal & Kumar, 2011). Sustainable tourism focuses on three areas:

- i. Quality – valuable experience for visitors and increased life quality for host communities through cultural identity, poverty reduction and environmental quality;
- ii. Continuity – exploitation is made at the optimum level that allows the preservation and regeneration of the natural resources;
- iii. Balance between the needs of tourism industry, environmental protection, and local communities by an equitable distribution of benefits among stakeholders.

2.4 Standards of Eco-tourism

According to Weaver and Lawton, (2007) the standards of eco-tourism are;

a. Protection of the Ecosystem

- i. Maintenance of the ecosystem where the eco-tourism attraction is located
- ii. Protection and maintenance of wildlife especially endangered species
- iii. Wildlife live harmoniously with people

b. Maintenance of the physical and chemical conditions of the area

- i. Maintenance of the quality of fresh water and marine resources
- ii. No wastes overflow and contamination of the environment (water, soil and air)

c. Conservation of local culture and history

- i. Culture of locality is maintained
- ii. Historical structures are maintained as part of cultural heritage

d. Infrastructures and signboards blend with the environment

e. Sustainability

- i. Maintenance of Carrying Capacity of the environment
- ii. Environmental education program is part of the eco-tourism package
- iii. Livelihood must benefit more the local community than outside entrepreneurs
- iv. The local government supports the eco-tourism project through ordinances and resolutions
- v. The Management Board (community-based) and appropriate government agencies support the project through strict enforcement of environmental laws
- vi. Experience and product management should follow principles and practices associated with ecological, socio-cultural and economic sustainability.

These principles and standards must be put in place by those who develop eco-tourism products, as well as those who plan the development of an area-based eco-tourism. In eco-tourism branch a special place is given by the marketing concept. The importance of proper marketing is widely recognized throughout the tourism sector that today tourism market has become increasingly segmented over the methods of communication to reach consumers have multiplied and diversified (Bob *et al.*, 2008).

2.5 Landform

According to Moss (2011) landform is a natural geographical feature or shape that appears on the earth's surface. Large landforms include mountains, plains and rivers, while small landforms include hills and billabongs. Landforms are created and shaped by geographical forces of nature, such as tectonic figure movement and erosion. Natural landscapes are made up of a variety of landforms, often landforms are not unique to a single landscape; for example, a hill can be found in many different landscapes as shown in Table 2.3 (Mabutt, 2012).

Table 2.3: Some Common Landforms found in different Landscapes around the World

Landscape	Some common Landform found in that Landscape
Mountain landscape	<ul style="list-style-type: none">i. Mountain – a large elevation on the Earth’s surfaceii. Ridge – a long, narrow, elevated surfaceiii. Valley – a low area enclosed by mountains
Coastal landscape	<ul style="list-style-type: none">i. Stack – a vertical column of rockii. Beach – a sandy or pebbly shoreiii. Headland – a high, rocky outcrop of land
Riverine landscape	<ul style="list-style-type: none">i. Flood plain – a low-lying area regularly flooded by a riverii. Riverbed – the channel in which the river flowsiii. Billabong – an arm of a river which forms a pool, only joining with the river in times of flooding
Desert landscape	<ul style="list-style-type: none">i. Inselberg – an isolated steep-sided rock hill on a plainii. Oasis – a supply of groundwater in the desertiii. Grassland plains – a large, flat area sparsely covered with grasses
Karst landscape	<ul style="list-style-type: none">i. Spring – a basin in the rock allowing water to come to the Earth’s surfaceii. Cave – a large hollow underground with an openingiii. Stalactite – a formation that hangs from the ceiling of a cave, formed by dripping water and minerals
Tropical rainforest landscape	<ul style="list-style-type: none">i. Mountain – a large elevation on the Earth’s surfaceii. Valley – a low area enclosed by mountainsiii. Wetlands – a swamp or similar area of land that stays wet

(Source: Mabutt, 2012).

2.6 Valuing Landforms

Landforms and landscapes around the world are valued by many different people for many different reasons, some people may feel a deep personal connection to a particular landscape, while others are more interested in the money that can be earned from it (Mabutt, 2012). The value a person attaches to a particular landscape often depends on factors such as their age, occupation, education, cultural background and experiences. In general, geographers divide the ways in which people value landforms and landscapes into four categories:

i. Cultural Value

Mabutt (2012) ascertained that the cultural value is linked to the importance of landforms and landscapes as expressed by people through creative means such as poetry, literature, art and films. African landscapes and landforms have shaped African culture and identity. Indigenous inhabitants of varying landforms in Nigeria express the importance of the land to them through dreamtime stories, song and dance, and their art. Nearly all African art relates to the landscape and maps the landscape and the landforms of importance to the Indigenous community.

ii. Spiritual Value

In Nigerians the spiritual value of landform is expressed through the concept of 'Home'. Indigenous peoples believe that the myths of their historical and dreamtime stories bind them to the land, they also believe that their ancestors live on through the land and ensure their continued connection with it (Mabutt, 2012). Landforms contain many sacred sites of spiritual importance. Olumo rock (shown in Plate I), for example is a sacred place to Egba people who live in Abeokuta, Ogun state. They believe it serve as a natural fortress during the inter-tribal warfare in the 19th century. Its patron spirit is venerated in the Yoruba religion as an Orisha (spirit). Olumo rock is annually celebrated with lots of sacrifices.



**Plate I: The Olumo Rock is Sacred to the Egba People in Abeokuta, this is an example of Landform for Spiritual Value
(Source: Tripadvisor, 2018)**

iii. Aesthetic Value

The aesthetic value of a landform is closely linked to its beauty and uniqueness. The aesthetic value attached to a place is always subjective (personal). People are drawn to places for many reasons. Being surrounded by the beauty of the landscape such as that shown in Plate I may give someone a sense of freedom, stability and wellbeing, an individual might be drawn to a particular landform because of its overwhelming majesty, creating a personal connection to that place (Mabutt, 2012). The aesthetic value of the landscape to the community has been recognized through the creation of national parks, where land has been set aside for the public's use and enjoyment.



**PLATE II: Unique and Beautiful Landscape along the Lagos Coast is an example of Landform for Aesthetic Value
(Source: La Campagne Tropicana Beach Resort, 2018)**

iv. Economic Value

Economic value is a measurement of how financially important landscapes and landforms are (Mabutt, 2012). The economic value is particularly relevant to the tourism and mining industries in Nigeria as shown in Plate II. Calabar carnival for example, wants regular visitors to its state because people who travel spend money on accommodation, transport, food, souvenirs and activities. This money provides income for the tourism and hospitality industries. The Kwa falls, Agbokim waterfalls, Cross River National Park and Obudu Mountain Resort are all-natural landforms and landscapes with high economic value due to its popularity with tourists.

Mining is the process of extracting natural resources from within the earth as shown in Plate III. These resources are sold, processed and used to manufacture a variety of goods from jewelry to toys, to construction materials. The mining industry attaches economic value to landscapes that contain sought-after metals and minerals like coal and gold.



PLATE III: Tin Mining Site in Jos, Plateau state. Landforms with High Deposits of Minerals are an example for Economic Value (Source: Authors Fieldwork, 2018)

v. Competing Value

The same landscape can be valued by different people for different reasons. To a mining corporation, the economic value of a landscape might be most important (Mabutt, 2012). To an Indigenous Nigerian community, however, the spiritual value may be most important, while an artist might appreciate the aesthetic value of a landform. All these values are important to consider when deciding on how a landscape is best put to use.

2.7 Eco-friendly Resort Design

Eco-friendly resorts are environmentally friendly resorts with minimal impact on the environment without compromising guests' comfort and safety. It can also be an economically viable alternative to mass tourist resorts. According to Roxanna (2010), the eco-resort has to draw on and blend with the local natural and cultural environments by employing principles of Environmentally Sustainable Design (ESD). It must minimise use of energy through passive solar design and where additional energy inputs are required, it should utilise the renewable resources of sun, water and wind. It also has to make minimal impact on the environment by limiting waste, emissions, pollution and

other undesirable effects of its operation (Gultekin, 2010). Roxanna (2010) stated that the impact that the resort will make on the environment can be derived from solutions adopted for:

- i. Energy and water supply
- ii. Discharge of waste and emissions
- iii. Construction technology and materials used in buildings and infrastructure, and
- iv. Direct human impacts through daily activities on the site

Eco-resort design should begin with its indoor environment, creating the climate responsive resort so that it performs exceptionally well in the environment it is situated in is of utmost importance to the designer. Achieving an exceptional aesthetic quality (on top of the exceptional functional and structural qualities) in the environment it is situated in should be considered only after performance requirements have been satisfied (Hill & Gale 2009). While no single design or planning issue can be considered in isolation, it is the response to the climate that is the most obvious design problem in an eco-resort.

The overall objective of climate-responsive architecture is the provision of high standards of thermal, acoustic and visual comfort, while working with the climate rather than against it, it follows that the building should respond to the environment in which it is built by taking full advantage of any useful climatic conditions at the site and eliminating or minimizing the influence and effects of undesirable phenomena (Hill & Gale, 2009). Furthermore, it should closely match the needs and expectations of its occupants, which in many respects are different from those of occupants in a residential or office building.

2.8 Environmental Impacts of Eco-friendly Resort

According to Yogi (2010) materials used in eco-resort buildings have potentially a number of direct and indirect impacts on the environment, both indoors and outdoors. The direct impacts are the ones where materials interact with the environment, for example by off gassing or supporting vermin. The indirect impacts manifest themselves through a variety of actions required for the use of particular materials in applicable construction technologies or in their maintenance. Issues that must be considered are:

- i. Available sizes, required components, required finishes, and preventing corrosion;
- ii. Prefabrication versus on-site construction (traditional and modern methods);
- iii. Waste and pollution (water, air, noise) associated with some technologies;
- iv. Health impacts.

According to Yogi (2010) considerations regarding building materials and technologies should include assessment of the following:

- i. Impacts of construction methods on landscape and wildlife; source and origin of construction materials;
- ii. Available construction technologies appropriate for the selected building materials;
- iii. Impacts of resort on visual landscape;
- iv. Amount of water required by the selected technology and water conservation methods;
- v. Impacts of construction noise on wildlife;
- vi. Amount and type of fuels and chemicals required in construction;
- vii. Emissions from equipment;
- viii. Drainage techniques used for discharge of construction wastewater;

- ix. Use of energy-saving renewable energy equipment and techniques;
- x. Use of transport for various tasks specific to and associated with the given material

While environmental impacts are related to both design and operation of the resort, this thesis will emphasize on the design strata of eco-friendly resort design. Nevertheless, environmental impacts will always reflect on both operation and design decisions which are reflected at later stages of the facility's life cycle in maintenance, waste generation, various types of pollution and socio-economic impacts (Gultekin, 2010). Consideration of all benefits and all costs, not only at the construction stage but also throughout the entire life of the facility, should be put in a broad context.

In the design of eco-resorts, the designer should aim at reduction of quantities of materials required before any of the considerations listed above would be contemplated. The selected materials should not adversely affect human health, contribute to operating energy efficiency, require minimal manufacturing and processing as well as have low embodied energy (Roxanna, 2010). They should be durable, require little or no additional finishes and minimal maintenance, and preferably be obtained from renewable resources and harvested in a sustainable manner.

Materials that are locally manufactured or reusable, which have been salvaged from demolished structures or have recycled content, and recyclable, should be regarded as better for the environment in a very broad sense of the word. Possible environmental effects also require that non-recyclable materials can be disposed of safely.

Key recommendations in brief:

- i. Select materials in small modular sizes that do not require heavy machinery to handle;
- ii. Select technologies, either vernacular or prefabricated, with low water requirements;
- iii. Select reusable and recyclable materials with low energy content;
- iv. Select materials that are durable and require minimum maintenance.

2.9 Eco-tourist Resorts and Landform

In terms of landform architecture, the biggest benefit eco-tourism has to offer is its incentive value for preserving natural environments (Weaver, 2015). Price and Murphy (2010) hold that eco-tourism principles should be bio-centric rather than homocentric meaning it is an ethical view of the world centred on nature and all living things, and not solely human centred. Furthermore, a crucial element of eco-tourism incorporates environmental education for both residents and tourists (Cheia, 2013). This way, education helps foster environmentally responsive attitudes and moulds eco-tourists into advocates for the visited area upon returning home. In order to minimize the impact of environmental footprint, using environmentally and culturally sensitive architectural design through the use of available local building materials, recycling and disposal of waste is of great importance (Honey, 2008).

Low impact construction through use of available local building material will therefore be added to the framework. Furthermore, authors like Alexander and Whitehouse (2004) highlight the environmental challenges in that the eco-tourism spots are usually located in sensitive areas. Eco-tourist resorts usually implies small-scale projects with

small groups of tourists. Resort managers should focus on the number of visitors a protected area can sustainably accommodate to limit environmental deterioration.

2.10 Eco-tourist Resorts and Culture

In the Cultural dimension of eco-tourism, authors like Honey (2008) and Elliot (2012) pitch for a community-based model of eco-tourism as a management approach to achieving local sustainable development. These authors see the participation and inclusivity of locals as imperative to sustainable eco-tourism implementation where eco-tourist lodges and projects should strive to coordinate communication between the host communities and tourists, involving them in the processes of management and planning. That being so, promoting the participation and inclusivity of locals shall be added to the framework. Weaver (2015) advance the promotion of local ownership as necessary to ensure long-term sustainable change. This too shall be incorporated into the framework. Using the case study example of North Sulawesi Indonesia, it was found that the local communities were not receiving substantial benefits from eco-tourism and they noticed benefits were accrued by outsiders spurring negative attitudes from the locals to the initiative (Ross & Wall, 1999).

This seems to be a common theme among past eco-tourism projects and should be countered. Important to note, eco-tourism involves unequal power relations between visitors and the host a lot of the time, therefore its role in respecting the local culture and fostering intercultural appreciation is of great importance and will be included in the framework. In summary, empowerment, education, and providing tools and infrastructure are some of the elements that should be happening in unison with the local communities and will as a result be added to the framework (Honey, 2008). In the architectural discourse a reflection of the cultural architectural framework which

revolves around traditional building materials of the community in unison with sustainable design practices should be engaged by the architect.

2.11 Eco-tourist Resorts; Environmental, Social and Cultural Impacts

Tourism can be sustainable if development meets the needs of tourists and local residents while protecting future opportunities. Eco-tourism offers benefits for local residents, conservation, development and educational experiences. Eco-tourism is a sustainable form of natural resource-based tourism. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artefacts from the locality (Dowling, 2008).

Eco-tourism entails a combination of conservation and tourism (the economics related with it) to benefit local communities, especially focusing on sustainability (Myburgh & Saayman, 2012). Natural and cultural landscape values form a basis for eco-tourism. These values are geographical position, microclimatic conditions, existence of water, natural beauties, existence of natural vegetation, existence of wildlife, surface features, geomorphologic structure, local food, festivals and pageants, traditional agricultural structure, local handicrafts, regional dress culture, historical events and people, heritage appeals, architectural variety, traditional music and folk dance, artistic activities and so on (Catibog-Sinha & Wen, 2008)

According to Li (2006) Eco-tourism operates for one or more of the eco-friendly alternatives for the economic use of natural resources compared with mining, hunting, farming. Eco-tourism promotes an enhanced appreciation of natural environments and environmental education by exposing visitors and locals to nature and conservation (Bob *et al.*, 2008).

Eco-tourism is largely perceived to safeguard natural areas and thereby to contribute to the conservation of biodiversity. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artefacts from the locality. In eco-tourism planning the first issue that emerges is the environment and its conservation (Fung & Wong, 2007).

An eco-tourism destination must in no way be developed without planning in terms of environmental concern (Rahman, 2010). Within the eco-tourism implementation existence of water resources creates advantages in terms of both visibility and utilization. Climatic features of a region influence tourism directly and indirectly and play a crucial role in the development of tourism. Plants drawing interest thanks to their size, age or appearance are other appealing components of eco-tourism.

Flowering plants are important resources in eco-tourism. Historical, natural and folkloric values are important sources for eco-tourism. According to Soykan (1999), traditional commercial products are one of the most significant appeals leading to development of eco-tourism in a region. This is because whole production process from planting to harvest and processing bear cultural differences, and most of them are performed in traditional ways (Kiper, 2011).

2.12 Deductions/Conceptual Framework for Eco-resorts

- i. Presence of eco-tourist features in eco-tourist resort
- ii. Presence of eco-tourist design strategies in eco-tourist resort
- iii. Selected Eco-tourist resorts and their corresponding major landforms
- iv. Method of adaptation of landform in Eco-tourist Resort designs.
- v. Positioning of Eco-tourist Resort buildings
- vi. Placement/location of windows

- vii. Positioning of windows
- viii. Window type used and Window condition
- ix. Availability of terraces/balconies
- x. Positioning of Terraces/balconies
- xi. Building materials
- xii. Similarity of Resort buildings as compared with existing buildings in the locality
- xiii. Presence of cultural artifacts

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this chapter is to introduce the research strategy and the empirical techniques applied in order to evaluate and assess the influence of landform and cultural elements in the design of an Eco-tourist resort in Nigeria.

3.2 Research Method

The research method employed in conducting this study was the qualitative research method which employed the use of structured observation schedule to obtain relevant data and information for the analysis conducted in the study. The study makes use of descriptive survey approach to analyze data obtained from empirical investigations. Descriptive survey can be done through observation, case study (in-depth study of an area or group) and by survey (brief interview or discussion with users about a specific topic or topics). It also involves identification of variables to be observed or the study of the relationships between two or more phenomena. For the purpose of this study, five eco-tourist resorts were purposefully selected.

3.3 Data Types and Sources

3.3.1 Primary data

Primary data for this research was collected by the researcher through physical observation and a survey. A checklist of variables was developed by the researcher for the physical observation and questionnaire administered. The following variables were considering in the structuring of the checklist and questionnaire;

- i. Presence of eco-tourist features in eco-tourist resort
- ii. Presence of eco-tourist design strategies in eco-tourist resort

- iii. Selected Eco-tourist resorts and their corresponding major landforms
- iv. Method of adaptation of landform in Eco-tourist Resort designs.
- v. Positioning of Eco-tourist Resort buildings
- vi. Placement/location of windows
- vii. Positioning of windows
- viii. Window type used and Window condition
- ix. Availability of terraces/balconies
- x. Positioning of Terraces/balconies
- xi. Building materials
- xii. Similarity of Resort buildings as compared with existing buildings in the locality
- xiii. Presence of cultural artifacts

3.3.2 Secondary data

These set of data is collected from sources that have already been published or being in existence already in any form. This category of data is one not primarily sourced by the researcher, but from research works done by other people. The secondary data contained in this study was sourced from books, journals, encyclopedia, magazines and the internet they were also sourced from records the Nigerian federal ministry of culture and tourism.

3.4 Instrument for Data Collection

The instruments used in conducting this research includes an observation schedule or checklist and structured questionnaire in other to get relevant data pertaining variables critical to the research being made.

3.5 Population of the Study and Sampling Technique

Population is the aggregate of all the elements that share some common set of characteristics and that comprise the universe of the purpose of the research problem. A sample size of six Nigerian eco-resorts were studied, the samples were purposefully selected due to the limited number of eco-resorts in Nigeria. Table 3.1 shows the names and location of the eco-resorts observed. The eco-resorts were selected mainly due to the availability of key eco-tourist features. The features observed were extracted from the principles of eco-tourism reviewed from secondary data sources.

Table 3.1: Names and Location of Selected Eco-resorts

S/N	Eco-Resorts Observed	Location (State)
1.	Wikki Camp	Bauchi
2.	Obudu Mountain	Cross River
3.	Abraka Turf and Country Club	Delta
4.	La Campagne Tropicana	Lagos
5.	Ikogosi Warm Springs	Ekiti

3.6 Sampling/ Case Study Selection Criteria

A sample is a derivative of a population from which a certain study is to be carried out. Case study selection is comparable to sampling in a quantitative research and that those cases are usually purposively selected. These cases were characterized for study due to their innate qualities which were in relatable to the phenomenon under examination.

The case studies selected for this study were sampled purposively on these bases;

- i. As eco-resorts with adequate coverage in terms of scope of facilities needed to operate as a standard eco-resort.
- ii. As a facility that possesses some landform and cultural design elements as stated in of the objectives of the Study.

3.7 Method of Data Analysis and Presentation

The method of data analysis refers to the techniques employed to provide potential answers to relevant questions raised in the research work. This is done through the analysis of data gotten from the various sources for the research. The data gotten was analyzed descriptively and presented using tables, figures and other data analysis techniques are used to provide space analysis of the proposed design.

CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Data Presentation and Discussion of Result

This chapter takes a look at the data obtained over the course of the study and presents them with analysis. The results of the analysis are also presented and their meanings explained.

4.1 Data Analysis

This data gotten from the field through the use of research instruments is presented using tables and Figures. Discussion of findings gotten from the field work are also made to better understand the variable and conditions noticed during the field work.

The analysis of result for this study was done in line with the research objectives which are;

- i. To assess the operational framework of eco-tourist resorts.
- ii. To assess the key landform design strategies.
- iii. To assess the key cultural elements adopted in eco-resorts in Nigeria.
- iv. To develop a design framework for the adoption of key landform and cultural design elements in a proposed eco-resort in Miango, Plateau State.

4.1.1 Operational framework of Eco-resorts

This objective aims at investigating the operational framework of eco-tourist resorts based on findings from the literature review. Eco-tourist resorts as opposed to general resorts practices, have distinctive features which engages its targeted audience (eco-tourists). This distinct feature which are interpreted as variables serves as a bench mark for eco-tourist resorts, this objective aims at assessing eco-tourist resorts in Nigeria, finding their strength and weaknesses so as to improve on the existing operational

framework in proposing a model eco-tourist resort to meet current best global practices (objective 4).

Table 4.1: Assessment of Key Eco-tourist features in Eco-resorts

Eco-resorts	Presence of Natural Features		Building Style		Presence of local Community
	Wildlife	Visual Landscape	Afrocentric	Colonial	
1. Wikki Camp	✓	✓	✓	X	✓
2. Obudu Mountain	X	✓	X	✓	✓
3. Abraka Turf	✓	✓	X	✓	✓
4. La Campagne Tropicana	X	✓	✓	X	x
5. Ikogosi warm Springs	X	✓	✓	X	✓
Total	40%	100%	60%	40%	80%

✓ -Available, X -Not available

(Source: Authors Fieldwork, 2018)



Plate IV: Elephants at the Wildlife Park in Wikki Camp Resort (Source: Wikitravel, 2018)

The result obtained in Table 4.1 shows that all resorts observed were situated near areas with a distinguishing natural feature either in terms of wildlife or visual landscape. Results also indicate that only 40% featured wildlife as shown in Plate IV, while all the eco-resorts featured the presence of the visual landscape. Results obtained further shows

that as regards building style 60% of the resort showcased Afro-centric building style and 40% of the Eco-tourist resorts were known for the Colonial style. Lastly, 80% of the eco-resorts sampled has the presence of a local community.

Table 4.2: Assessment of Eco-tourist Design Strategies in Eco-tourist Resorts

S/N	Eco-tourist Resorts	Building Materials)		Local Building Technology	Passive cooling/heating technique	Landscape Preservation	Museum or Local Gallery
		Traditional	Modern				
1.	Wikki Camp	✓	✓	✓	X	✓	✓
2.	Obudu Mountain	✓	✓	X	✓	✓	✓
3.	Abraka Turf	✓	✓	X	X	✓	x
4.	La Campagne Tropicana	✓	✓	✓	✓	✓	x
5.	Ikogosi warm Springs	✓	✓	✓	✓	✓	✓
	Total	100%	100%	60%	60%	100%	60%

(Source: Authors Fieldwork, 2018)



Plate V: Lodges at Obudu Mountain Resort
(Source: Obudu Mountain Resort, 2018)

The results obtained in Table 4.2 results show a 100% synergy of traditional and modern building materials in all the eco-resorts sampled, it also shows a 100% awareness as regards land preservation, while only 60% of the sampled eco-resorts

adopted the local building technology in construction as shown in Plate V. About 80% of the eco-tourist resort showed the presence of passive cooling/heating technique and only 60% of the eco-resorts featured a museum or local gallery.

Table 4.3: Assessment of Green Operational Issues in Eco-resorts

S/N	Eco-resorts	Recycling Facilities/schemes	Renewable Energy Source	Engagement of the locals
1.	Wikki Camp	X	X	✓
2.	Obudu Mountain	X	X	✓
3.	Abraka Turf	X	X	✓
4.	La Campagne Trioicana	X	X	X
5.	Ikogosi Warm Springs	X	X	✓
	Total	0%	0%	60%

(Source: Authors Fieldwork, 2018)



Plate VI: Locals Engaged in Maintenance of Abraka Turf and Country Club
(Source: Abraka Turf and Country Club, 2018)

The results obtained in Table 4.3 show no presence of recycling facilities as well as no adoption of renewable energy sources as energy is sourced from the national grid, while secondary energy sources are mechanical generators which are not eco-friendly. The table also shows that 80% of eco-resorts sampled engaged the local community in the operation of resort activities.

From the variables observed for this objective, it can be deduced that most of the eco-resorts have facilities necessary for the successful operation of eco-tourism practices in eco-resorts in Nigeria. As regards the implementation of eco-tourism principles, the strength of the observed resorts lies in the successful synergy of both traditional and modern building materials, engagement of host communities, adoption of local building techniques, adoption of passive cooling/heating techniques, as well as landscape preservation/conservation.

The weakness of the eco-resorts observed can be seen in the unavailability of recycling facilities or schemes, lack of renewable energy sources and absence of museum and local galleries in some of the resorts.

4.1.2 Key adaptive landform design strategies adopted in eco-resorts in Nigeria

This objective looks at assessing key adaptive landform design strategies adopted in the sampled eco-tourist resorts. The variables study design methods used in integration of landform such as;

- i. Selected Eco-tourist resorts and their corresponding major landforms
- ii. Method of adaptation of landform in Eco-tourist Resort designs.
- iii. Positioning of Eco-tourist Resort buildings
- iv. Placement/location of windows
- v. Positioning of windows
- vi. Window type used and Window condition
- vii. Availability of terraces/balconies
- viii. Positioning of Terraces/balconies

Table 4.4: List of Selected Eco-tourist Resorts and their Corresponding Major Landforms

S/N	Eco-resort	Landforms				
		Mountain	Hill	Plateau	Plain	Valley
1.	Obudu Mountain Resort	✓	x	X	X	x
2.	Wikki Camp	X	x	X	✓	x
3.	Abraka Turf	X	x	X	✓	✓
5.	La Campagne Tropicana	X	x	X	✓	x
6.	Ikogosi Warm Springs	X	✓	X	X	x
	Total	20%	20%	0%	60%	20%

(Source: Authors Fieldwork, 2018)



Plate VII: Street View of Chalets at Ikogosi Warm Springs

(Source: Authors Fieldwork, 2018)

According to table 4.4, it was observed that 20% of the total sample population were located on a mountain, while 20% were located on hills and valley as shown in Plate VII. The table shows that none of the resorts are located on Plateau. It was also discovered that most of the eco-resorts were built on plain land accounting for 60%.

Table 4.5: Method of Adaptation of Landform in Eco-tourist Resort Designs

S/N	List of Eco-Resorts	Method of Adaptation of Landform in Design				
		Stepped	Use of Basement	Scattered	Suspended	Meander
1.	Wikki Camp	X	X	✓	X	x
2.	Obudu Mountain	✓	X	✓	✓	✓
3.	Abraka Turf	X	✓	✓	X	✓
4.	La Campagne Tropicana	X	X	✓	X	x
5.	Ikogosi Warm Springs	✓	X	✓	✓	✓

Source: Author's Fieldwork (2018)



Plate VIII: Entrance to the Multi Purpose Hall at Abraka Turf and Country Club (Source: Abraka Turf and Country Club, 2018)

The result obtained in Table 4.5 shows that all eco-resorts observed had scattered settlements around the site, results also indicate that only 40% featured a stepped layout on building placement on site, while only 20% had a basement. Results obtained further shows that 40% of the sample population had suspended structures and 80% had a meandered site layout.

Table 4.6: Positioning of Eco-resort Buildings

S/N	Eco-resorts	Location on Hill or Mountain		
		Located on the raised side	Located on the sloped side	Located on a flat terrain
1.	Wikki Camp	X	X	x
2.	Obudu Mountain	✓	✓	x
3.	Abraka Turf	X	✓	x
4.	La Campagne Tropicana	X	X	x
5.	Ikogosi Warm Springs	✓	✓	x
	Total	40%	60%	40%

(Source: Author's Fieldwork, 2018)



Plate IX: Street View of Chalets at Obudu Mountain Resort
(Source: Obudu Mountain Resort, 2018)

According to table 4.6, it was observed that 40% of the total sample population were located on the raised side of the terrain, while 60% were located on the slope side of the terrain. The table further shows that 40% of the eco-resorts were situated on a flat terrain.

Table 4.7: The Position of Windows to Views of Landforms

S/N	Eco-resorts	Positioning of window to view landforms	
		Located to view landform	No located to view landform
1.	Wikki Camp	X	✓
2.	Obudu Mountain	✓	X
3.	Abraka Turf	✓	X
4.	La Campagne Tropicana	✓	X
5.	Ikogosi Warm Springs	✓	X
	Total	80%	20%

(Source: Author's Fieldwork, 2018)



Plate X: Lodges at Ikohosi Warm Spring Resort
(Source: Authors Fieldwork, 2018)

From the Table 4.7, 80% of the sample population have their windows positioned to maximize views as shown in Plate X, while only 20% of the eco-tourist resorts have not taken such initiative.

Table 4.8: Window Type Used and Window Condition

S/N	Eco-resorts	Window type Used		Window Condition	
		Window pane with mullions	Window panes without mullions	Grill	No Grill
1.	Wikki Camp	✓	X	x	✓
2.	Obudu Mountain	✓	X	x	✓
3.	Abraka Turf	✓	X	x	✓
4.	La Campagne Tropicana	X	✓	x	✓
5.	Ikogosi Warm Springs	✓	X	x	✓
	Total	80%	20%	0%	100%

(Source: Author's Fieldwork, 2018)



Plate XI: Interior/Exterior of Family Unit at Obudu Mountain Resort
(Source: Obudu Mountain Resort, 2018)

Although a greater percentage of the eco-resorts have windows positioned fully for the maximization of exterior views. Results from Table 4.8 shows that only 20% of the eco-resorts observed have windows screened without mullions, leaving 80% of the sample population with mullions obstructing views. Lastly all the eco-resort had no window grills optimising views from windows as shown in Plate XI.

Table 4.9: Availability of Terraces/Balconies

S/N	Eco-resorts	Positioning of terraces/balconies	
		Located to view landform	Not located to view landform
1.	Wikki Camp	X	✓
2.	Obudu Mountain	✓	X
3.	Abraka Turf	✓	X
4.	La Campagne Tropicana	X	✓
5.	Ikogosi Warm Springs	✓	X
	Total	60%	40%

(Source: Author's Fieldwork, 2018)

**Plate XII: Lodges at Wikki Camp Resort**

(Source: Wikitravel, 2018)

Results from Table 4.9 shows that 60% of the sample population had of terraces/balconies in their buildings, leaving the remaining 40% without terraces/balconies.

Table 4.10: Positioning of Terraces/Balconies

S/N	Eco-resorts	Positioning of terraces/balconies	
		Located to view landform	Not located to view landform
1.	Wikki Camp	X	✓
2.	Obudu Mountain	✓	X
3.	Abraka Turf	✓	X
4.	La Campagne Tropicana	X	✓
5.	Ikogosi Warm Springs	✓	X
	Total	60%	40%

(Source: Author's Fieldwork, 2018)

The results obtained in Table 4.10 shows that 60% of the sample population have terraces located to take advantage of views, while 40% of the eco-resort have terraces located with obstructed views.

From the variables observed in this objective it can be deduced that all the eco-tourist resorts located on an undulating terrain have an advantage in implementing landform design strategies, this is seen in the maximisation of viewpoints and building layouts adopted in these resorts as opposed to the resorts on flat terrains. This feature could be adopted in eco-resorts in other to enhance a synergy with the natural habitat and also foster tourism.

4.1.3 Key Cultural Elements adopted in Eco-resorts in Nigeria

The variables study design methods used in the integration of cultural elements such as.

- i. Building materials
- ii. Similarity of Resort buildings as compared with existing buildings in the locality
- iii. Presence of cultural artifacts

Table 4.11: Building Materials

S/N	Eco-resorts	Building materials	
		Traditional	Modern
1.	Wikki Camp	✓	✓
2.	Obudu Mountain	✓	✓
3.	Abraka Turf	✓	✓
4.	La Campagne Tropicana	✓	✓
5.	Ikogosi Warm Springs	✓	✓
	Total	100%	100%

(Source: Author's Fieldwork, 2018)



**Plate XIII: African Huts at Obudu Mountain Resort
(Source: Obudu Mountain Resort, 2018)**

According to Table 4.11 all eco-resorts observed used both traditional and modern building materials in construction as shown in Plate XIII.

Table 4.12: Similarity of Resort Buildings as Compared with Existing Buildings in the Locality

S/N	Eco-resorts	Building type as compared to locality		
		Homogenous	Partial	Nonhomogeneous
1.	Wikki Camp	X	✓	X
2.	Obudu Mountain	X	✓	X
3.	Abraka Turf	X	X	✓
4.	La Campagne Tropicana	X	✓	X
5.	Ikogosi Warm Springs	X	✓	X
	Total	0%	80%	20%

(Source: Author's Fieldwork, 2018)



Plate XIV: Outdoor Relaxation at La Campagne Tropicana
 (Source: La Campagne Tropicana Beach Resort, 2018)

From Table 4.12 results shows that 80% of the selected eco-tourist resorts have a partial similarity with existing buildings in the locality, while only 20% have no similarity with existing buildings in the locality.

Table 4.13: Presence of Cultural Artifacts

S/N	Eco-resorts	Presence of Cultural artifacts	
		Indoor	Outdoor
1.	Wikki Camp	✓	✓
2.	Obudu Mountain	✓	X
3.	Abraka Turf	✓	X
4.	La Campagne Tropicana	✓	✓
5.	Ikogosi Warm Springs	✓	✓
	Total	100%	60%

(Source: Author's Fieldwork, 2018)



**Plate XV: Interior of a Chalet at La Campagne Tropicana Resort
(Source: La Campagne Tropicana Beach Resort, 2018)**

From Table 4.13 results shows that all the selected eco-resorts have cultural artefacts in their interior settings while only 60% showcased cultural artefacts in their outdoor settings.

4.1.4 Deductions from findings

From the variables observed in this objective it becomes clear that all the eco-resorts employed the usage of traditional and modern building materials in their design of habitable spaces for their visitors, which resulted dominance of partial similarities with existing structures in the locality. As regards cultural artefacts all the resorts adopted them in indoor spaces, while only three of the five selected resorts adopted them in outdoor spaces. This shows an appreciable level of cultural awareness in eco-tourist resorts in Nigeria.

4.2 Adoption of Key Landform and Cultural Design Elements in a Proposed Eco-resort in Miango, Plateau State

4.2.1 Design Report

4.2.1.1 Design brief

In line with the Federal Government of Nigeria's initiative to boost the nation's economy through diversification as well the growth of the world travel industry, with Africa accounting for the second fastest growing tourist sector in the world. It has become necessary for Nigeria to tap into this emerging market, while tourism affords huge employment and income generating opportunities, its impact on bio-physical environment is well acknowledged hence the emphasis on sustainable tourism. Indeed, most of Nigeria's natural landscapes are eco-sensitive areas and exploring them as tourist destinations must be sustainably conducted to enhance the carrying capacity or regenerative capacity of this landscapes. This informed the need for an eco-tourist resort based on the principles of sustainable tourism aimed at showcasing the deep cultural heritage in Nigeria. The proposed design is expected to have all the necessary facilities necessary for the green operation of an eco-tourist resort.

4.2.1.2 Design considerations and concept

For the purpose of this design careful considerations were given to the following for optimal results;

- i. Sustainable tourist demands obtained from the principles of eco-tourism, aimed at reducing carbon footprint by engaging sustainable design practices from construction to occupancy.
- ii. Landform design strategies such as proper orientation, ventilation and daylighting as aimed at taking full advantage of the terrain as well reducing the impact on the natural landscape.

- iii. Cultural design elements where interpreted in terms of using the local building materials of the inhabitant (Irigwe people) so as to create a homogeneous resort design.
- iv. Provision of facilities such as ramps to aid movements of disabled persons given full access to all facilities and a full eco-resort experience.

The design concept is Architecture for the people by the people, enthused by the underlying area of emphasis which focuses on the principles of eco-tourism demonstrated in the architectural discourse through landform and culture. The concept loops around the principles of eco-tourism which aims at sustainable design practices that will improve the lives of the inhabitant.

4.2.1.3 The site

The proposed site is located in Miango, a town in Plateau state, in central Nigeria. Miango is a village in Bassa local Government Area of Plateau State, about 26.3km from Jos the city centre, and 137.2km from the Plateau state capital. The natives of this village are the Irigwe people, who are very hospitable and friendly. There are a lot of tourist attractions in the village like water falls, High hills, unique flora and fauna and the Miango rest home.



Figure 4.1: Google Maps Site Location Map
(Source: Google Maps 2018)

4.2.1.4 Site selection criteria

The selection of the site for the construction of the eco-resort site was based on the following criteria;

1. Proximity to various eco-tourist attractions around the village like water falls, high hills, flora/fauna and Miango rest home.
2. The site must feature an undulating terrain which offers tourist a hillside experience hence, justifying the integration of landform design elements.
3. Hospitality of the natives (Irigwe people), The Irigwe people are known for there hospitality.
4. The site must be located in a place where there will be close interaction with the locals in order to boost the economy and involvement of the locality, in line with the principles of eco-tourism.
5. The site must be easily accessible and have basic utilities such as electricity, telecommunication and water to aid construction and post construction (resort full operation).

4.2.1.5 Site selection justification

The site was selected based on its undulating terrain, justifying the integration of landform. The proximity of the Irigwe community also serve as an added advantage as interaction and engagement of the local community is needed in the operation of eco-tourist resorts.

4.2.1.6 Site planning bye laws and regulations

The location and site selection were carefully guided by the land use ordinances of Ministry of Housing and Urban development, Plateau state), Plateau State Geographic Information System (PLAGIS) and the development control policies.

4.2.1.7 Site analysis

- i. **Sun rise and sun set:** The sun rises from the eastern region across the site and sets at the western region. The design will feature proper orientation of buildings to take advantage efficient natural daylighting in order artificial lighting demands.
- ii. **Wind:** The prevailing winds in Miango which covers the proposed site are North-East (NE) and South-West (SW) trade winds. The NE winds blows across the site between November and January and is usually characterized by its hazy and dusty nature. The SW winds blows from the Atlantic Ocean and brings rain to the West African coast, including Nigeria from April to October. A proper understanding of the benefit of the properties of the winds would help provide a design that is energy efficient and comfortable for the Eco-tourist by orienting the building along the direction of the coolest wind.
- iii. **Climatic condition:** The climate is tropical in Miango with an average annual temperature of 22.8⁰C. Precipitation averages 1387mm, the driest month is

January with 1mm of precipitation, the greatest amount of precipitation occurs in August, with an average of 297mm. April is the warmest month with an average of 25.8⁰C, the lowest temperature in the year occur in August, when it is around 20.9⁰C. The choice of materials (bricks) and finishes will be suited for this particular climate.

- iv. **Landscape:** The site landscape is dominated by grasses with a fairly dense distribution of shrubs and trees. The shrubs and grasses will be incorporated in the overall landscape design and the trees will be retained and incorporated in line with passive design techniques in order to synchronize effectively with the landform and terrain.
- v. **Topography:** The site has an undulating hilly terrain, with a downward slope from the north-eastern axis towards the wester axis. The difference from the highest to the lowest point is 27.6 metres. The undulating terrain will engage ecological landform design strategies such as orientation preservation of natural landscape, ventilation and natural lightening and optimal views.
- vi. **Geology and soil:** The dominant soil type in Miango is the reddish basaltic soil, these soils develop from basaltic rocks they occur over a wide range of altitudes 1600 to 3000m above sea level and are suitable for agricultural purposes.
- vii. **Accessibility:** The site is easily accessed through the untarred access road which cuts through the site from the north east axis which links with the major road adjoining the site on the southern axis. The design will feature more access route for services and emergency response as well as walkways and circulation routes.
- viii. **Noise source:** The potential noise source is from the access road. Buffer zones will be created to reduce the effect on the proposer eco-resort.

- ix. **Utilities:** The major utilities present includes electricity characterised by presence of electric poles and network of telecommunications. There is a need for site drainage patterns channelled towards grey water systems due to the absence of drainage channels on site.

4.2.1.8 Site inventory



Plate XVI: North West View
(Source: Authors Fieldwork, 2018)



Plate XVII: South West View
(Source: Authors Fieldwork, 2018)



Plate XVII: Exiting Bridge over Stream Channel
(Source: Authors Fieldwork, 2018)



Plate XIX: Existing Stream Channel on Site
(Source: Authors Fieldwork, 2018)



Plate XX: Irigwe Community Adjoining Site
(Source: Authors Fieldwork, 2018)

4.2.1.9 Schedule of accommodation

Table 4.14: Administration and Services (Ground Floor)

Total Number of units: 1

S/N	Space	Square Are(m ²)
1.	Reception	7.2
2.	Checkroom/Equipment	6.7
3.	Waiting Room	38.7
4.	I.T/Telecommunications	10.6
5.	Convenience	3.1
6.	Storage	12.5
7.	Changing Room/Convenience	13.4
8.	Art gallery	55.7
9.	Administrative quarters	11.4
10.	Toilet	2.5
11.	Kitchen	21.5
12.	Restaurant	149.3
13.	Convenience	9.8
14.	Store	2.5

Table 4.15: Administration and Services (First Floor)

Total Number of units: 1

S/N	Space	Square Are(m ²)
1.	Bar	22.1
2.	Lounge	149.2
3.	Convenience	9.8
4.	Store	2.5
5.	Terrace/Outdoor seating	112.2
6.	Lecture Room	27.6
7.	Toilet	1.7
8.	Terrace (Lecture Room)	10.4
9.	Secretary	14.5
10.	Administration	12.5
11.	Toilet	1.7
12.	Terrace (Administration)	9.6

Table 4.16: Tourist Facilities**Total Number of units: 1**

S/N	Space	Square Are(m ²)
1.	First Aid/Medic	18.0
2.	Supply	14.4
3.	Security	6.8
4.	Convenience	3.0
5.	Workshop	28.8

Table 4.17: Maintenance and Equipment**Total Number of units: 1**

S/N	Space	Square Are(m ²)
1.	Maintenance	18.0
2.	Laundry	44.8
3.	Warehouse	29.6

Table 4.18: Multipurpose/Outdoor Event**Total Number of units: 1**

S/N	Space	Square Are(m ²)
1.	Hall	366.1
2.	Stage	67.6
3.	Store	28.2
4.	Convenience	33.0
5.	Hallway	21.3
6.	Outdoor Event	522.5

Table 4.19: Eco-Lodge Single**Total Number of units: 24**

S/N	Space	Square Are(m ²)
1.	Living Area	20.4
2.	Toilet	4.5
3.	Terrace	16.6

Table 4.20: Eco-Lodge Couple (Ground Floor)**Total Number of units: 10**

S/N	Space	Square Are(m ²)
1.	Kitchenette/Dinner	17.3
2.	Toilet	4.5
3.	Terrace	16.6

Table 4.21: Eco-Lodge Couple (First Floor)**Total Number of units: 10**

S/N	Space	Square Are(m ²)
1.	Bedroom	20.5

Table 4.22: Eco-Lodge Family**Total Number of units: 13**

S/N	Space	Square Are(m ²)
1.	Living Room	21.5
2.	Kitchenette/Dinner	8.5
3.	Bedroom 1	16.2
4.	Bedroom 2	16.2
5.	Toilet	6.8
6.	Terrace Rear	9.2
7.	Terrace Front	10.8

4.2.1.10 Construction

The proposed design is aimed at reducing carbon footprint, integrating the natural landform and showcasing the culture of the inhabitants in the architectural discourse, these are the major factors influencing decisions taken as regards construction. In order to avoid distortion of the natural landform the resorts were suspended with concrete piers serving as the foundation footing, laminated wood was adopted for flooring. The primary walling material for the eco-lodges is wood, adopted for its sustainable properties, while the administrative buildings feature compressed earth blocks as the walling material adopted due to their durability and strength as opposed to traditional mud walls.

Stone paving's such as pebble stone and slate tile was used for flooring the administrative structures, precious stones are readily available in Plateau due to the hilly region. Exposed double pitched wooden trusses (150mm x 100mm) were adopted for the roofing support, a 50mm layer cement fibre was used as insulation to reduce radiant

heat. Synthetic thatch roofing was adopted due to long term cost advantage and less maintenance requirements.

4.2.1.11 Materials and finishes

The selection and degree of usage of materials where due to their carbon footprint and durability, the main materials for construction are:

- i. Concrete
- ii. Compressed earth blocks.
- iii. Wood
- iv. Stone
- v. Synthetic thatch
- vi. Cellulose cement fibre

Most of the materials used where left in their natural form, the finishes adopted includes water proofed laminated wood coatings for the eco-lodges and stone paving such as pebble stone and slate.

4.2.1.12 Landscape

Landscaping is an important feature of eco-tourist resort as eco-resorts are expected to have a natural setting with less distortion to the natural landscape. In maintaining the natural landscape, the resort structure where suspended so as to preserve the natural landscape. The general landscape in the resort employed the use of soft and hard landscape elements.

The soft landscape elements include plants such as the buxus plants, African daisy flowers, hibiscus flowers, climbers, almond, cherry bar oak and bur oak trees. Hard landscape elements employed include eco-friendly road pavings, fencing, interlocking

tiles, concrete kerbs, football pitch and basketball courts, all these features adhere to functional and aesthetic principles.

4.2.1.13 Building services

i. Electricity

The electrical services in the eco-tourist resort will be transmitted and provided through a renewable energy source (solar energy farm). The solar farm will be integrated on the landform, solar panels will be placed on areas without obstruction so as obtain maximum energy from sun through photovoltaic cells. The solar panels will be arranged along the sun path which is the south east - south west axis.

ii. Heating and Cooling

In the design of eco-resorts passive systems are recommended, the ventilated trombe wall is a conventional low tech a passive heating and cooling solution. The developments made to the conventional classic trombe using occupant centred design and living lab experimental methods. In the grey paint was used in addition to 15cm reversible natural wool and two 3mm thick roll up curtains. The ventilated trombe wall design is known for reduction in carbon emissions.

iii. Water Supply

Efficient water supply is necessary for the successful operations of eco-tourist resorts. Small scale water treatment plants with the integration of boreholes will be used to ensure continuous supply of water to the resort. Grey water systems will be integrated with the existing stream channel on site in order to recycle of waste water for optimum water usage.

iv. Drainage, Refuse and Sewage disposal

Run-off water from the buildings, natural landscape and surfaces such as car parks and paved areas within the proposed facility shall be adequately drained off into the drainage system. The drainage system will be situated along all level ground (walkways and roadways) on the landform so as to drain water from the slopes. The construction of the drainage system will be such that all the channels empty its content into the grey water system which recycles the waste for other usages.

For the sewage within the facility, general sewage treatment plant aimed at self-composting will be provided on site to treat and manage waste. These will be strategically located on site for easy access and maintenance. Refuse disposal will be made for refuse collection from various points on the site the maintenance department will be responsible for disposing refuse to recycling firms, this is necessary in reducing carbon footprint produced from resort operation.

v. Fire Security

Fire incidents are a common occurrence in buildings either due to man made errors caused by human negligence or electrical sparks. Fire precaution aims at safe guarding lives and properties and this is achieved by reducing fire incidences, controlling fire propagation and spread, providing adequate means of escape to the building occupants and adhering strictly to fire safety measures. The proposed eco-tourist resort shall ensure the following measures are in place to check fire incidents

- a. The use of fire stop assembly a passive fire protection means to protect penetrations through fire walls such as cables and pipes to prevent the spread of fire in the design.

- b. The walls are made of wood and compressed earth block, the wooden walls will be coated with lumbar guard a fire-retardant coating while the compressed earth blocks are fire rated
- c. The cables are coated with fire retardants to reduce flame spread and smoke development of combustible cables.
- d. Compartmentalization of the entire building by use of fire-resistant rated walls and floors.
- e. Installation of fire sprinkler systems to reliable water source, placement of smoke and fire detectors in sensitive areas.
- f. Provision of a service route integrated in the landform design, for firefighting trucks for ease of operation in the case of an emergency.

4.2.1.14 Security and maintenance

Passive security means such as landscaping aimed at provision of privacy will be adopted in outdoor and indoor areas of the proposed eco-tourist resort, there will also be need for active security outlets such as surveillance cameras and spaces for security personnel. The choice of materials satisfies low maintenance cost and their durability makes it cost effective in the long run, however periodic checking and tests will ensure good maintenance culture. Maintenance is any work undertaken in order to keep restore or improve every part of the building to ensure acceptable standard of utility and value of such facility. The maintenance department of this proposed eco-resort will be responsible for preparing the scheduled preventive maintenance work on all the building within the eco-resort and render minor repairs on plumbing, structural, lighting and electrical works.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The prospects of eco-tourist resort practices lies in the fact that it's a catalyst in socio-cultural and economic aspects, the main purpose is not only ensuring the socio-economic development but also the protection of natural and cultural landscape values to ensure awareness of nature conservation. Just as sustainable tourism is being embraced by many developing countries as a sustainable form of economic growth and diversification, there is a growing urgent need for Nigeria a mon-cultural economy with huge tourism potential to set sail.

The integration of landform and cultural design elements is in line with the goals of eco-tourism with the aim of achieving sustainable tourist schemes in order to minimize the ecological footprints and enhance the regenerative carrying capacity of this landscapes. This would require effective planning and participation by all stakeholders.

5.2 Recommendations

From the study the following recommendations can be applied to improve the design and operations of eco-resorts in Nigeria.

- i. The federal ministry of culture and tourism needs to push and the eco-tourism narrative in resort designs in Nigeria, as a tool to boost tourism give tourist an authentic travel experience.
- ii. Eco-resorts should utilize available renewable energy sources ranging from wind and solar power, as the primary source of energy and also implement recycling schemes aimed at optimum waste management, i.e grey water systems and recycling of all biodegradable and non-biodegradable waste in eco-resorts.

- iii. Adopt landform strategies and passive schemes aimed at producing habitable spaces for the delight of eco-tourist.
- iv. Buildings in eco-resorts should employ primarily traditional materials and aim at homogenous structures as compared to the buildings in the locality, Cultural design elements should also be showcased in indoor and outdoor spaces.
- v. Eco-resort should provide spaces for the museum and local galleries in the resort so as to engage positive participation and interaction with the host communities.

REFERENCE

- Abraka Turf and Country Club (2018). Retrieved 26 November 2018, from <https://www.abrakaturf.com/about-us/>
- Alexander, S. E. & Whitehouse, J. L. (2004). Challenges for Balancing Conservation and Development through Eco-tourism: Insights and implications from two Belizean case studies, *Sustainable Tourism* 45, 129-142. Retrieved 20 April 2018 from <https://www.witpress.com/elibrary/wit-transactions-on-ecology-and-the-environment/76/12544>
- Ayeni, D. A. & Ebohon, O. J. (2012). Exploring Sustainable Tourism in Nigeria for Developmental Growth. *European Scientific Journal*, 8 (20), 127 -130. Retrieved 22, July 2018 from <https://dora.dmu.ac.uk/handle/2086/8243>
- Bansal, S. P. & Kumar, J. (2011). Eco-tourism for Community Development: *International Journal of Social Ecology and Sustainable Development*, 2(2), 31-40.
- Bhattacharya, D., Chowdhury, B. & Sarkar, R. 2011. Irresponsible Eco-tourism Practices Flanking the Best National Park in India: A Multivariate Analysis. (ICBER) Conference, 1901- 1928.
- Bob, U., Swart, K., Maharaj, B. & Louw, P. (2008). Nature People and Environment: *Overview of Selected Issues*, 15(1), 17-44. Retrieved on 25 July 2018, from https://www.researchgate.net/publication/239856246_Nature_People_and_Environment_Overview_of_Selected_Issues
- Brandon, K. (2013). *Eco-tourism and Conservation*. New York U.S.A: Van Nostrand Reinhold.
- Briedenhann, J. & Wickens, E. (2004). Tourism Routes as a Tool for the Economic Development of Rural Areas-Vibrant Hope or Impossible Dream: *Tourism Management*, 25, 71-79. doi:[10.1016/S0261-5177\(03\)00063-3](https://doi.org/10.1016/S0261-5177(03)00063-3)
- Catibog-Sinha, C. & Wen, J. (2008). Sustainable Tourism Planning and Management Model for Protected Natural Areas: *Pacific Journal of Tourism Research*, 13(2), 145-162, doi:10.3390/buildings3030639
- Ceballos-Lascurain, H. (1996). *Tourism, Eco-tourism and Protected areas: The State of Nature-Based Tourism around the World and Guidelines for Its Development*. IUCN Publications, Cambridge, 301.
- Cheia, G. (2013). Eco-tourism: *Definition and Concepts*. *Journal of Tourism*, 15, 56-59. Retrieved on 25 July 2018, from <http://www.revistadetourism.ro/rdt/article/view/44>
- Chessworth, N. (2009). Eco-tourism Seminar paper delivered in the Institute of Environmental Studies and Management. UPLB. College, Laguna 12-15.
- Choi, H. S. & Sirakaya, E. (2006). Sustainability Indicators for Managing Community Tourism: *Tourism Management*, 27, 1274-1289. Retrieved on 25 July 2018, from https://www.academia.edu/10149197/Sustainability_Indicators_for_Managing_Community_Tourism

- Dorobantu, M. R. & Nistoreanu, P. (2012). Rural Tourism and Eco-tourism – The Main Priorities in Sustainable Development Orientations of Rural Local Communities in Romania: *Economy Transdisciplinary Cognition*, 15(1), 259-266.
- Dowling, R. K. (2008). Plans for the Development of Regional Eco-tourism: *Theory and Practice*. In *Tourism Planning and Policy*, 34,110–126. Retrieved on 25 July 2018 from https://cdn.intechopen.com/pdfs/45414/InTechRole_of_eco-tourism_in_sustainable_development_.pdf
- Elliott, J. (2012). *An Introduction to sustainable development*. Abingdon, Oxon: Routledge Press.
- Ekanayake, E. M. & Lonng, A. E. (2012). Tourism Development and Economic Growth in Developing Countries: *International Journal of Business and Finance Research*, 6(1), 61-63.
- Fung, T. & Wong, H. (2007). Eco-tourism planning using multiple criteria evaluation with GIS: *Geocarto International Journal*, 22(2), 87–105. doi: [10.1080/10106040701207332](https://doi.org/10.1080/10106040701207332)
- Google Maps (2018). Retrieved 26 November 2018, from <https://www.google.com/maps/place/Miango+Rd,+Jos/@9.8629281,8.8638545,17z/data=!3m1!4b1!4m5!3m4!1s0x10537490869826d9:0xc1f442d82d3b0bca!8m2!3d9.8629281!4d8.8660432>
- Gultekin, P. (2010). Determination of eco-tourism potential of Duzce Uğursuyu and Aksu watersheds and landscape management. (*M.Sc. Thesis*). The graduate school of natural and applied sciences, Düzce University, Landscape architecture department. Düzce Turkey.
- Hill, J. & Gale, T. (2009). *Eco-tourism and Environmental Sustainability: Principles and Practices*. Britain: Ashgate Publishers. 261.
- Honey, M. (2008). *Eco-tourism and sustainable development: Who Owns Paradise?* 2nd ed. Washington, D.C.: Island Press, 3-390.
- Hovardas, T. & Stamou, G. P. (2006). Structural and Narrative Reconstruction of Representations of Environment, Nature, and Eco-tourism. *Society and Natural Resources*, 19(3), 225-237. doi:10.1080/08941920500460724
- Hughes, G. (1998). *Tourism and the Semi Logical Realization of Space*. In G. Ringer (Ed.), *Destinations: Cultural landscapes of tourism*. London: Routledge. 17-32.
- Kiper, T. (2011). The Determination of Nature Walk Routes Regarding Nature Tourism in North-Western Turkey: Şarköy District. *Journal of Food, Agriculture & Environment*, 9(3&4), 622-632. Retrieved on 25 July 2018 from https://www.researchgate.net/publication/287894447_The_determination_of_nature_walk_routes_regarding_nature_tourism_in_north-western_Turkey_Sarkoy_District
- La Campagne Tropicana Beach Resort, (2018). Gallery, Retrieved March 24, 2019, from <https://www.lacampagnetropicana.com/home/facilities>

- Lasansky, D. (2004). Introduction. *Architecture and Tourism: Perception, performance and place* (1-12). Oxford: Berg.
- Li, W.J. (2006). Community Decision-Making Participation in Development. *Annals of Tourism Research*, 33(1), 132-143. Retrieved on 25 July 2018 from https://www.researchgate.net/publication/280143571_Community_participation_in_development_
- Mabutt, J. A. (2012). Review of the Concepts of Land Classification. *Journal of environmental management*, 20:295-319.
- McLaughlin, M. J. (2011). Eco-tourism Assessment: Applying the Principles of Eco-tourism to Paddle Based Recreation in St. Lawrence Islands National Park and Environs. (*M.Sc. Thesis*). Queen's University, Kingston, Ontario, Canada, 142.
- Moss, M. R. (2011). Bio-physical Land Classification Schemes: A Review of their Relevance and Applicability to Agricultural Developments in Humid Tropics. *Journal of environmental management* 3:287-3907.
- Myburgh, E. & Saayman, M. (2012). Eco-tourism in Action. Potchefstroom: *Leisure Consultants and Publications*. National park Gesäuse in Austria –Comparison, p.170. Retrieved 23, September 2018 from: <http://www.npeaeuse.at/download/forsch/ObenausJEEco-tourism.pdf>
- Obudu Mountain Resort (2018). Gallery, Retrieved March 24th, 2019, from Obudu Mountain Resort: <http://www.obudumountainresort.com/#media>.
- Patterson, C. (2012). The Business of Eco-tourism: *The Complete Guide for Nature and Culture- Based Tourism Operations*, Rhineland: Explorer's Guide Publishing Second Edition.
- Price, G. & Murphy, P. (2010). *The Relationship between Eco-tourism and Sustainable Development: A Critical Examination*. La Trobe University, Bundoora. 1-14.
- Quick Start Guide to a Tourism Business, (2011). Eco-tourism vs Nature Based Tourism, Western Australia Retrieved 15, September 2018 from [http://www.tourism.wa.gov.au/Publications%20Librar20\(final\).pdf](http://www.tourism.wa.gov.au/Publications%20Librar20(final).pdf)
- Rahman, A. (2010). Application of GIS in Eco-tourism Development: A Case Study in Sundarbans, Bangladesh, (*A Master's Thesis*). Mid-Sweden University, Sundsvall.
- Raymond, Y. C. (2001). Estimating the Impact of Economic Factors on Tourism; Evidence from Hong Kong. *Tourism Economics*, 7(3), 277-293, doi: [10.5367/000000001101297874](https://doi.org/10.5367/000000001101297874)
- Ross, S. & Wall, G. (1999). Eco-tourism: Towards Congruence between Theory and Practice. *Tourism Management*, 20(1), 123-132. Retrieved 20 June 2018 from <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1069.8707&rep=rep1&type=pdf>

- Roxanna, D. M. (2012). Considerations about Eco-tourism and Nature-Based Tourism – Realities and Perspectives. *International Journal of Academic Research in Economics and Management Sciences*, 1(5), 215-221. Retrieved on 20 April 2018 from <https://pdf4pro.com/cdn/considerations-about-eco-tourism-and-nature-ac2c.pdf>
- Soykan, F. (1999). A type of A Tourism Integrated Natural Environment and Rural Culture: *Rural tourism. J. Anatolia Tourism Res.* 10: 67-75. Retrieved 20, July 2018 from <https://www.intechopen.com/books/a-type-of-a-tourism-integrated/role-of-eco-tourism-in-sustainable-development>
- Stueve, A. & Cook, S. (2002). Geotourism Study: Phase I executive summary. The Research Department of the Travel Industry Association of America, New York. Retrieved 20, July 2018 from <http://www.tia.org/Pubs/GeotourismPhaseFinal.PDF>
- Tripadvisor (2018). Gallery Retrieved 24, March 2019, from https://en.tripadvisor.com.hk/ShowUserReviews-g1760497-d4282420-r185257003-Olumo_Rock-Abeokuta_Ogun_State.html
- UNEP, United Nations Environmental Program. (2007). *Building and Climate Change: Status, Challenges and Opportunities*. United Nation Environment Programme, United Nation.
- UNWTO. (2007). International Recommendations on Tourism Statistics (IRTS). Provisional Draft, Revision 5, September, 2007. Madrid.
- Weaver, D. B. (2015). Magnitude of Eco-tourism in Costa Rica and Kenya. *Annals of Tourism Research*, 26(4), 792-816. Retrieved 23 July 2018 from [https://www.scirp.org/\(S\(vtj3fa45qm1ean45vvffcz55\)\)/reference/ReferencesPapers.aspx?ReferenceID=695487](https://www.scirp.org/(S(vtj3fa45qm1ean45vvffcz55))/reference/ReferencesPapers.aspx?ReferenceID=695487)
- Weaver, D. B. & Lawton, L. J. (2007). Twenty years on: *The State of Contemporary Eco-tourism Research*. *Tourism Management*, 28: 1168–1179.
- Wikitravel (2018). Gallery, Retrieved 29 September, from https://wikitravel.org/en/Yankari_National_Park
- Yogi, H.N. (2010). Eco-Tourism and Sustainability - Opportunities and Challenges in the Case of Nepal. (*Master's Thesis*) Department of Sustainable Development University of Uppsala, Sweden.
- Zawawi, A. A., Shiba, M. & Jemal N. J. N. (2014). Landform Classification for Site Evaluation and Forest Planning: Integration between Scientific Approach and Traditional Concept. *Sains Malaysiana*, 43(3), 349–358.

APPENDICES

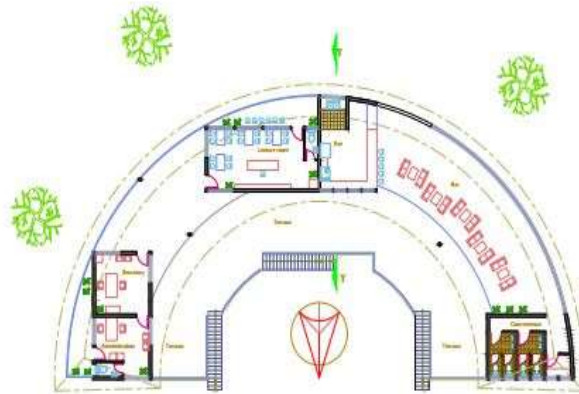
Appendix A: Site Plan



Appendix B: Administration and Services (Ground Floor Plan)



Appendix C: Administration and Services (First Floor Plan)

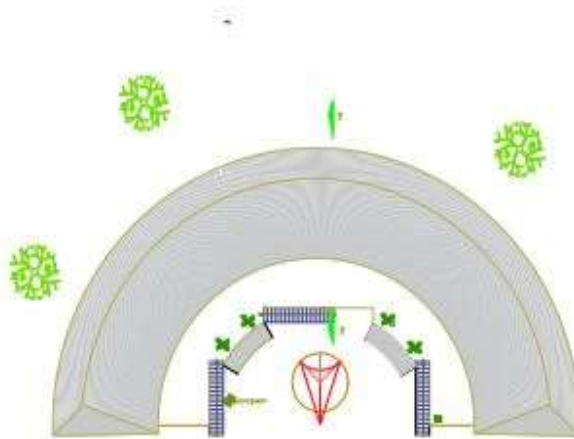


first floor

**ADMINISTRATION
AND SERVICES**

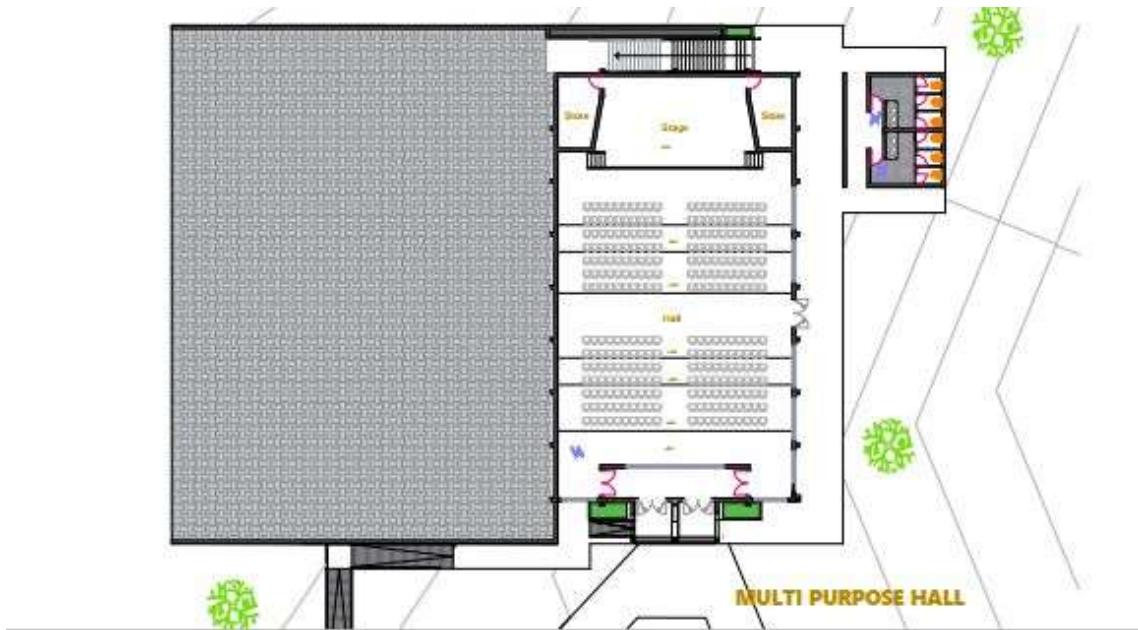
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Appendix D: Administration and Services (Roof Plan)

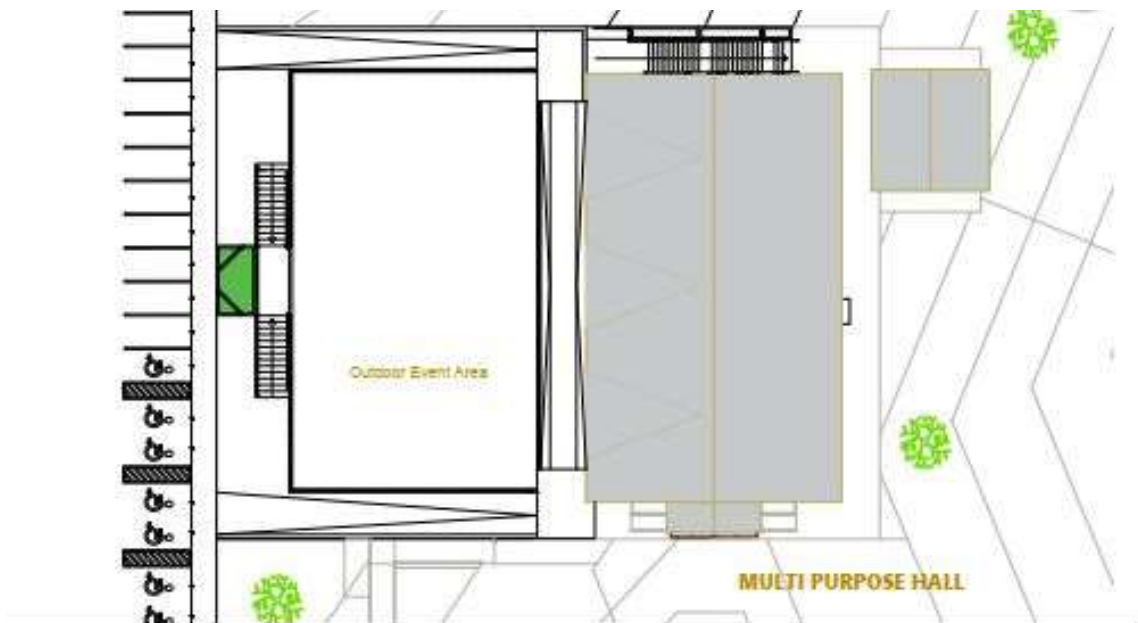


**ADMINISTRATION
AND SERVICES**

Appendix E: Multipurpose Hall (Floor Plan)



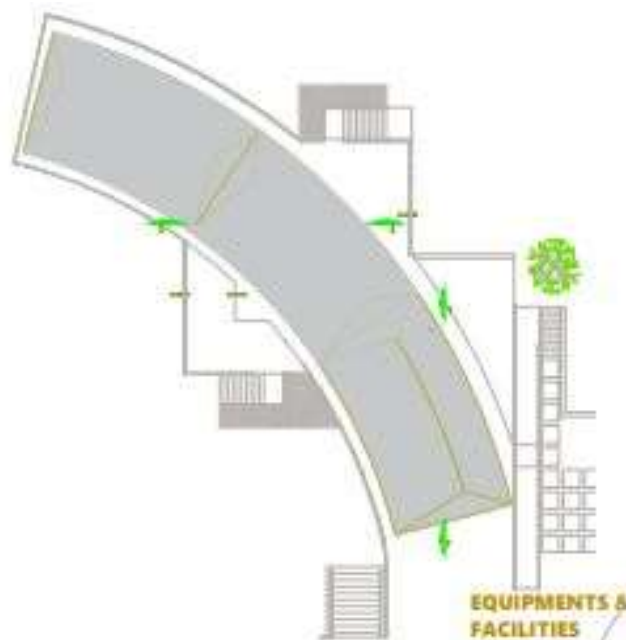
Appendix F: Multipurpose Hall (Roof Floor Plan) and Outdoor Event Centre



Appendix G: Equipment and Facilities (Floor Plan)



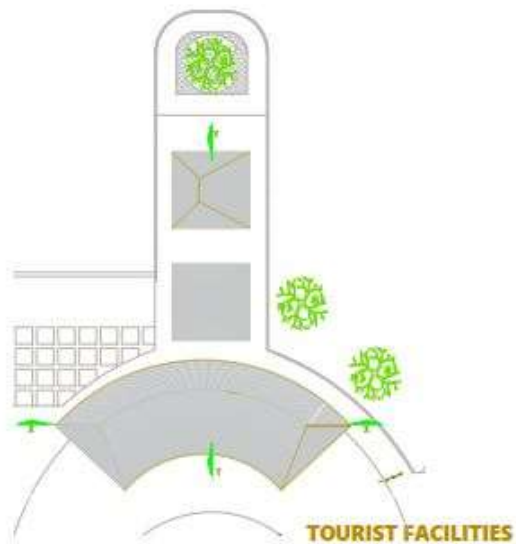
Appendix H: Equipment and Facilities (Roof Plan)



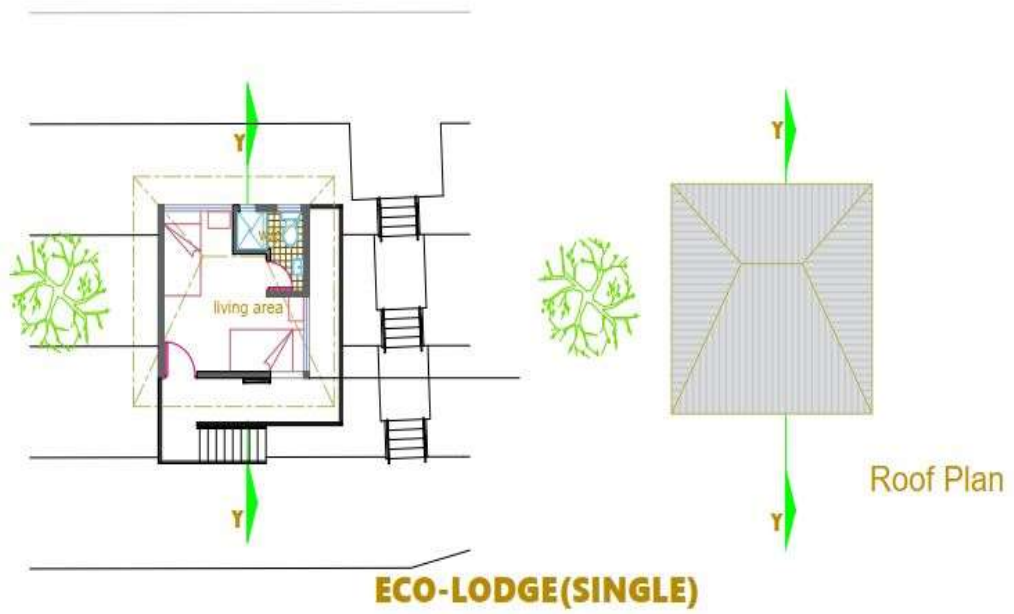
Appendix I: Tourist Facilities (Floor Plan)



Appendix J: Tourist Facilities (Roof Plan)

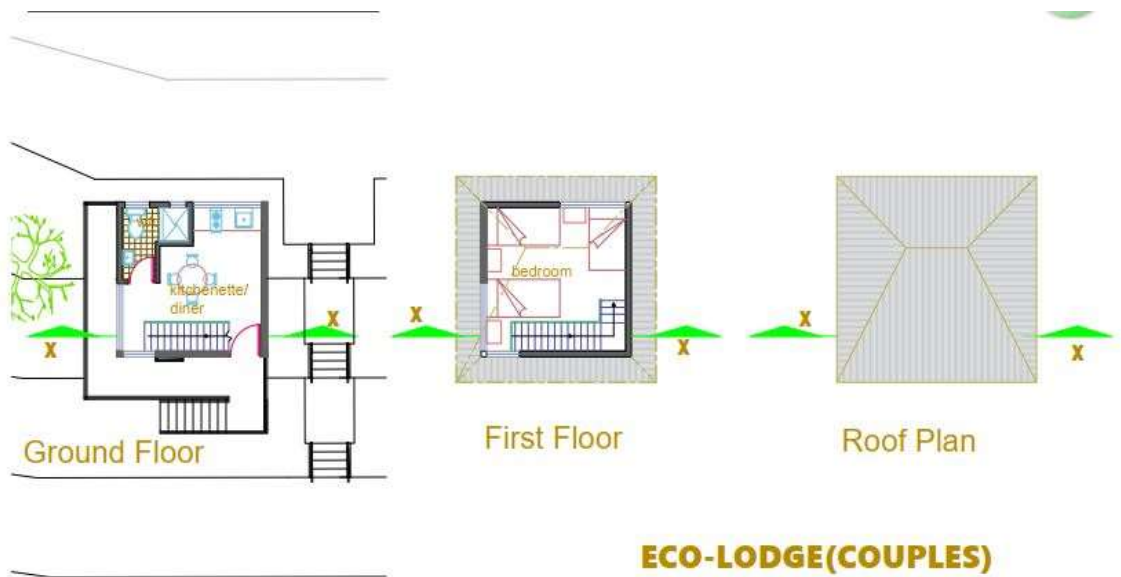


Appendix K: Eco-Lodge Single (Floor and Roof Plan)



Acti

Appendix L: Eco-Lodge Couple (Floor and Roof Plan)

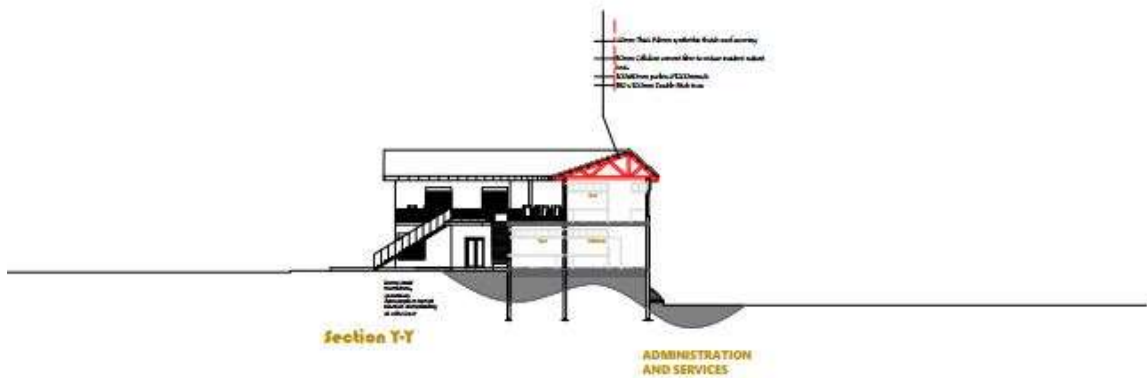


Acti

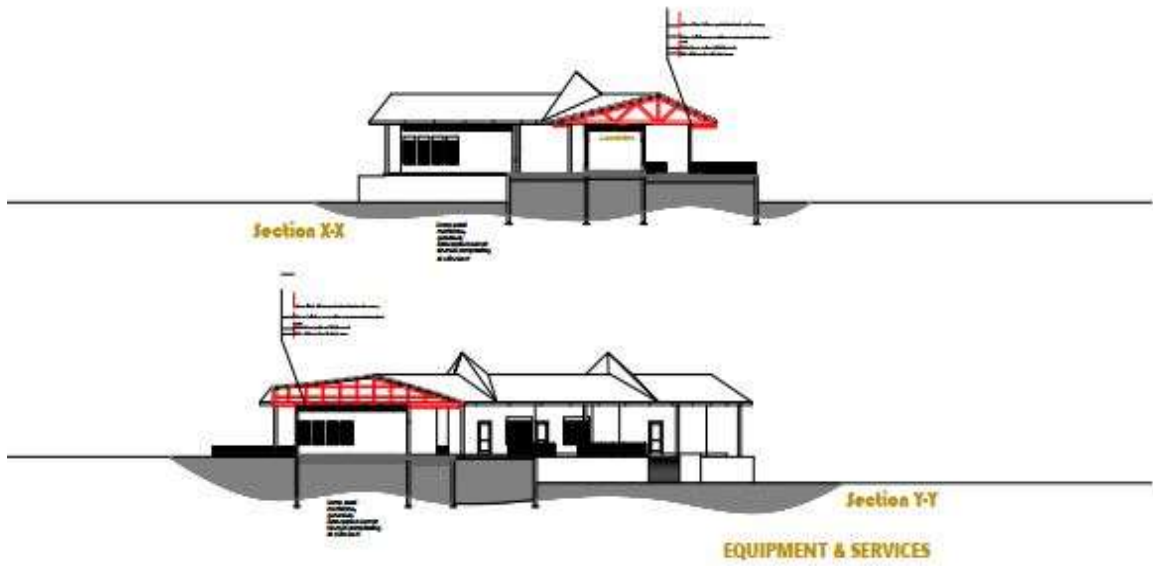
Appendix M: Eco-Lodge Family (Floor and Roof Plan)



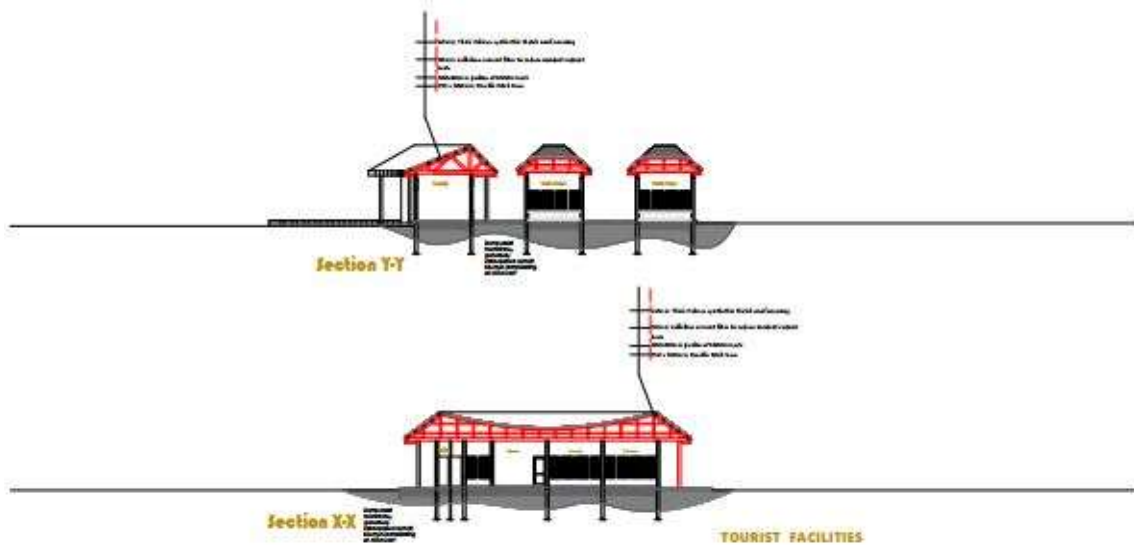
Appendix N: Administration and Services (Section)



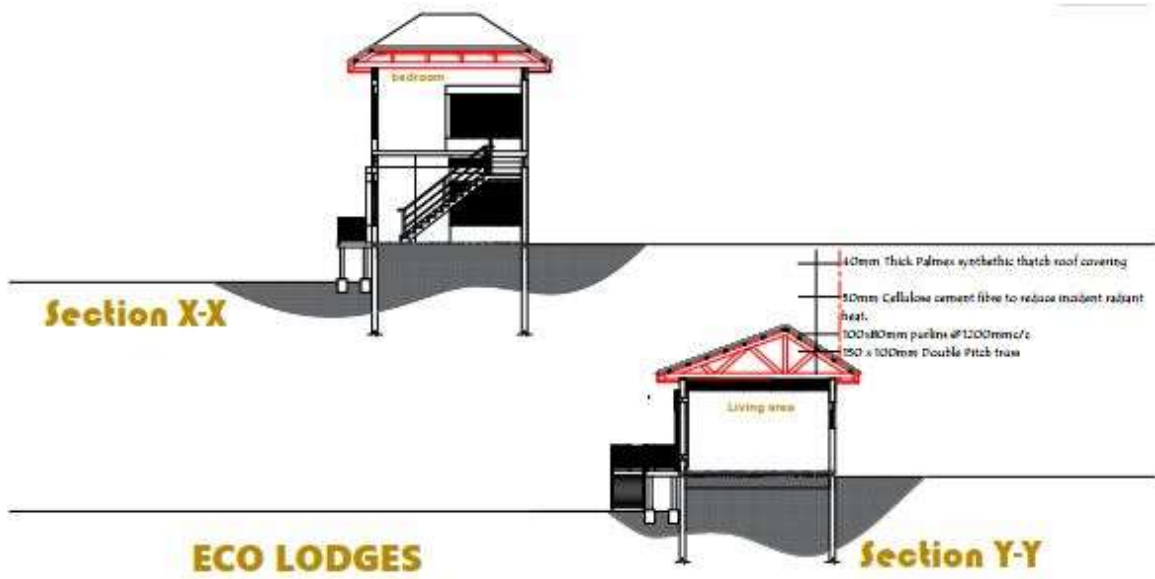
Appendix O: Equipments and Services (Section)



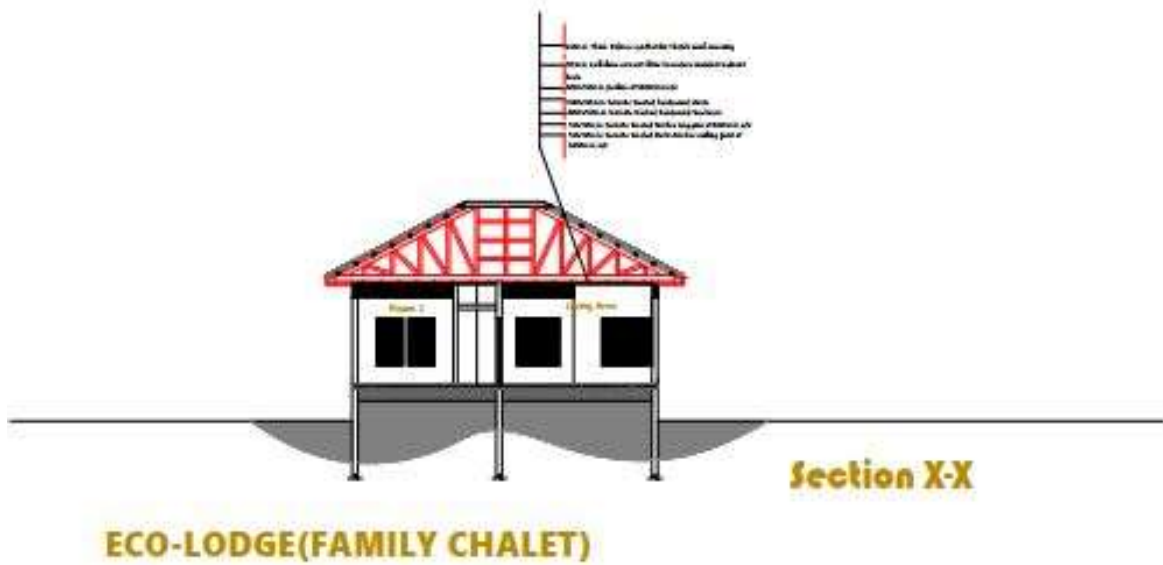
Appendix P: Tourist Facilities (Section)



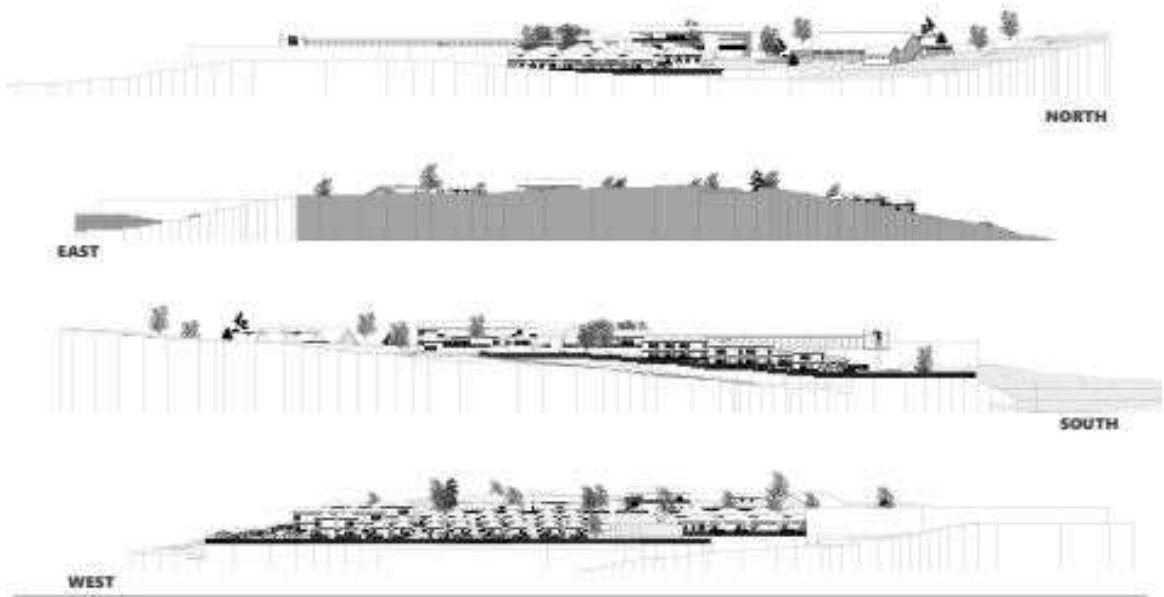
Appendix Q: Eco-Lodge Single and Couple (Section)



Appendix R: Eco-Lodge Family (Section)



Appendix S: Site (Elevation)



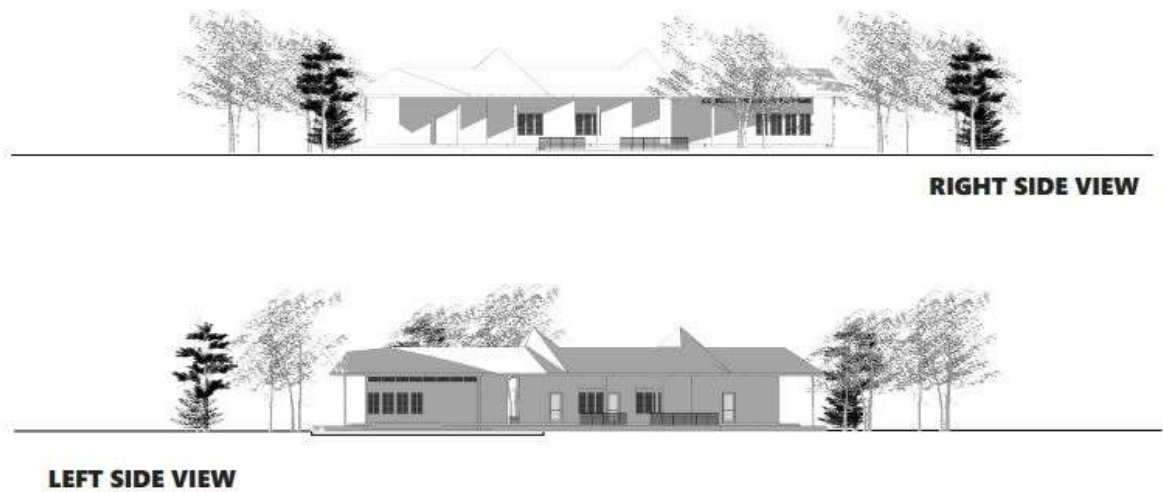
Appendix T: Administration and Services (Elevations)



Appendix U: Multipurpose Hall and Outdoor Event Centre (Elevations)

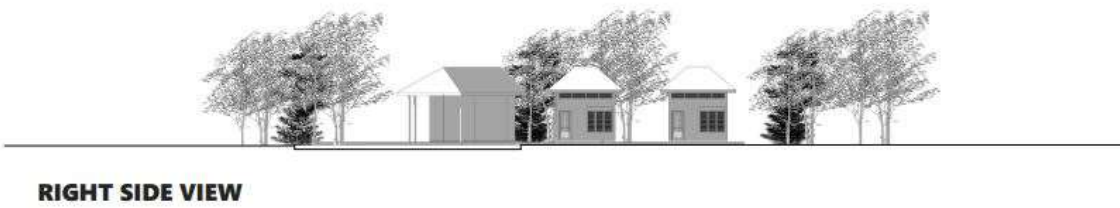


Appendix V: Equipment and Services (Elevations)



- **EQUIPMENT AND SERVICES**

Appendix W: Tourist Facilities (Elevations)



• TOURIST FACILITIES

Acti
City

Appendix X: Eco-lodge Single (Elevations)

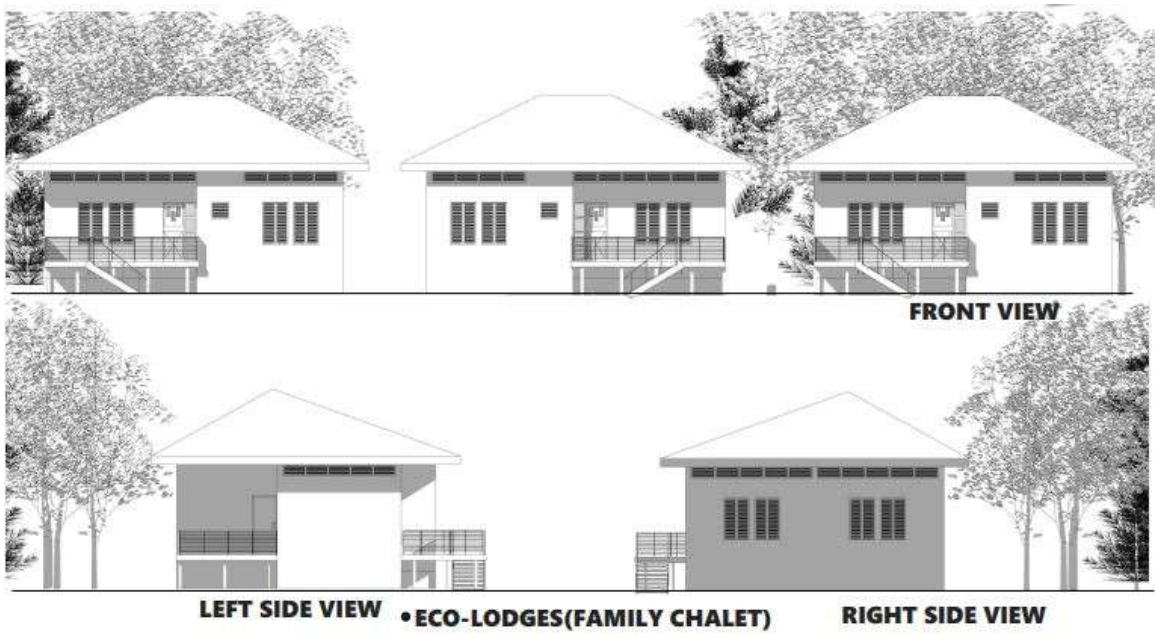


• ECO-LODGES

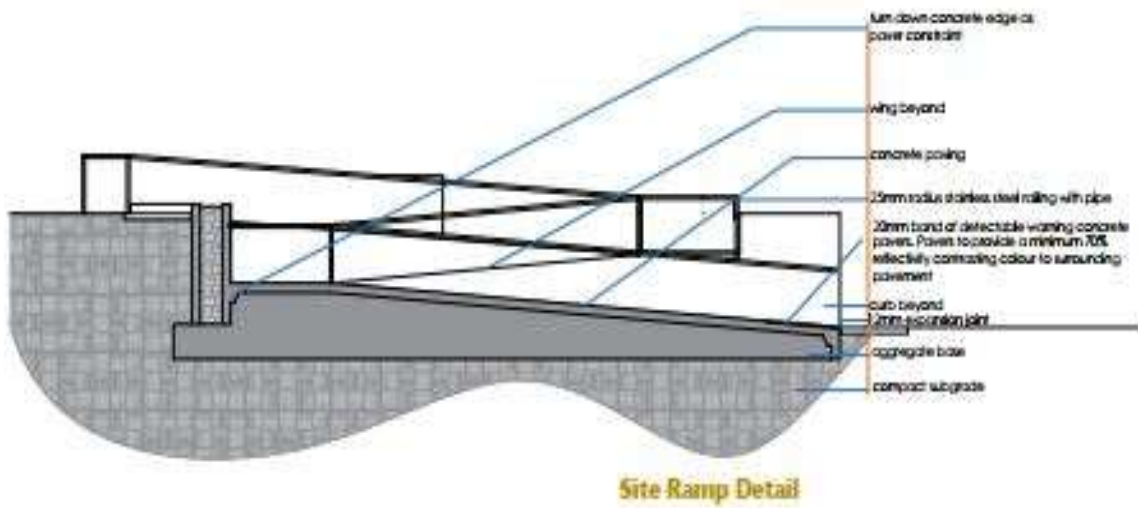
Appendix Y: Eco-lodge Couple (Elevations)



Appendix Z: Eco-lodge Family (Elevations)



Appendix CC: Ramp (Detail)



Appendix DD: Site (Perspective)

