



INTERIOR DESIGN FOR THE ECOLODGE: UTILIZING DESIGN TOOLS IN ECO-TOURISM

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ABSTRACT

Nowadays, the emergence of eco-tourism as a factor of sustainable development has significant impacts on hotel industry. Eco-tourism is a concept that integrates local environment and building resources to create healthy interior design spaces; it goes further to offer both passive and active interior as well as exterior structures. The term “Ecolodge” has been introduced in the tourism industry to promote harmony between habitation and the natural facilities satisfying the principles of ecotourism. This research describes the influence of Ecolodge, as a small-scale hotel, on the interior design elements. It also aims to search for means to assess the influence of different types of eco lodges on interior design elements. In fact, this research paper outlines a research methodology for studying the elements of interior design integrating local surroundings, cultural features, furnishings and construction materials. The research hypothesized that interior design elements of the eco lodge should be integrated and connected harmoniously with the site’s natural characteristics. Fayoum and Siwa Oases are used in this case study research to understand to what extent interior design elements of ecolodge need to grow from the physical surroundings of the region interacting with the architectural patterns as well as the cultural setting around. Furthermore, it addresses how ecolodge interiors may reflect the ecology of the place and the use of materials for its needs achieving the foundation of community, economic, and environmental sustainability.

Keywords: *Eco-friendly interior design, Sustainable design, Green principles for Ecolodge, Eco-tourism*

I. INTRODUCTION

Eco-tourism is a concept, which originated in the early nineties. Ties (1990) has defined it as “responsible travel to nature areas that conserves the environment and improves the well-being of local people”. Nature based tourism industry involves visiting natural areas in the remote wilderness or urban environments in a responsible travel manner.

In addition, visitors are expected to conserve the environment and improve the well-being of



local people (Khalifa, 2011). Consequently, it is simply about unity, conservation, communities, and sustainable travel. Being environmentally responsible, eco-tourism is the quickest growing sector of tourism. It paves the way for visitation to relatively undisturbed natural areas in order to enjoy and appreciate nature that promotes conservation and provides for beneficially active socioeconomic involvement of local populations (Ceballos-lascurain, 2008). Such a trend established as a feasible option for conserving the natural and cultural heritage of local regions and for providing solutions that the relationships and intersections between the three elements of sustainability, social and environment can be viewed. It has addressed in recent literature that eco-tourism has a huge effect on the environment of the setting it is in. In many cases it can help protect wide range of ecosystem. However, most of the biologically wealthy ecosystems are suited poorly for eco-tourism. Places are difficult to access; they contain elusive wildlife, in addition to uncomfortable accommodations (Filho, 1998, Timonhy, 2000, and Salafsky et al. 2001). From another perspective, the principle of eco-tourism depends on maintaining attractive natural landscapes and to maximize the use of sites' natural renewable resources. In other words, the environment of the region and the culture of community can be considered as a valuable that serve the sustainable tourism efforts. As indicated by Bonn and Dai (2005), the environment is the main base for the natural and cultural resources for attracting tourists worldwide. Hence, there is a great need for introducing "green ideas" to the construction elements of hotel building and considering the dimensions of surrounded environment during the process of creation the exterior and interior spaces.

As result of the huge demand for eco-tourism and natural oriented hotels is the ecolodge as tourism industry label launched on the market at the First International Ecolodge Forum and Field Seminar held in the 1994 at Maho Bay Camps in the U.S. Virgin Islands (Wood, 2002, and Mehta, 2007). The ecolodge, according to World Tourism Organization in 2001, is a tourism accommodation that satisfies the principles of eco-tourism and responds to the highest standards of sustainable architecture and site planning. Consequently, it must reflect the quality of surrounding environment using local design and local construction methods.

The ecolodge should also guarantee:

- Abolition of hazardous materials
- Assessment of life-cycle environment impacts of all building materials



- Significant contributions to local economic development and cultural experiences. (Ecolodge Business Plan of Costa Rica, 1996)

Ecolodges are usually small-scale hotels that offer opportunities for interaction with local environment; they are locally owned businesses (Moscardo et al., 1996, P. 32). To address this approach, Mehta et al. (2002) formulate the following definition: “An ecolodge is a five –to 75-room, low-impact, natural-based, financially sustainable accommodation facility that helps protect sensitive neighboring areas; involves and benefits local communities; offers tourists and interpretive and interactive participatory; provides a spiritual communication with nature and culture; and is planned, designed, constructed and operated in an environmentally and socially sensitive manner”.

Eco-design is the main tool of architects and interior designers to create ecolodge projects. They utilize green features exist in the surrounding environment such as natural systems for ventilation and temperature control to create healthy interior spaces with natural light and by using natural and recycling materials. Green design in ecolodges maximizes the use of sites’ natural renewable resources and provides different experiences where there are opportunities for relaxation, experiencing nature and cultural activities. As a result, there is an urgent need for understanding the natural patterns and characteristics of surroundings that would have impacts on interior design items of the ecolodge and how interior designers could be able to recognize the importance of integrating environmental factors into their design processes, such as site analysis, climate, and organic building materials, etc.

Objectives

In fact, this research paper outlines a research methodology to, first, study the elements of interior design integrating local surroundings, cultural features, furnishings and construction materials. Second, it describes the influence of ecolodge, as a small-scale hotel, on the interior design elements. Third, it aims to search for means to assess the influence of different types of ecolodges on interior design elements. Such evaluation of the sustainable design solutions is reflected in two famous ecolodges in Egypt: Fayoum and Siwa Oasis. It addresses how ecolodge interiors may reflect the ecology of the place and the use of materials for its needs achieving the foundation of community, economic, and environmental sustainability. The research hypothesized that interior design elements of the ecolodge should be integrated and connected harmoniously with the site’s natural characteristics. To achieve these objectives,



the research methodology depends on explaining how the interior and exterior spaces can be integrated harmoniously with the natural landscape.

Methodology

In order to reach satisfying results, the research methodology proposed in this paper is framed around the basic concepts of the interior design items of ecolodges as a reflection of natural context of the project site. This means that design, more specifically interior design, is able to integrate the site's natural characteristics into environmental implications. The evaluation was conducted through a field survey of eco-friendly interior design items through research based on image together with qualitative content analysis of the two areas to visualize and represent the layers recorded of interior items and to transmit experiences of exterior and interior space and products that significantly could utilize design as tool for positive impacts on guest experiences of the ecolodge.

2. ECOLOGE INFLUENCES ON THE INTERIOR DESIGN ELEMENTS

The process by which ecolodge constructed over the world is a map of region's characteristics that empower conversation, interaction, spread awareness and encourage the targeted market of eco-tourism. Thus, the planning process of an ecolodge requires the adoption of the surrounding environment, natural and cultural, to exterior architecture and interior design elements, commonly termed as eco-design. This approach describes a type of unconventional design process that is based on four guidelines and that should be taken into account while designing ecolodges, according to Salama (2000):

- Design solutions should grow from the physical surroundings of a place and its interaction with the cultural setting around it;
- Design should be based on environmental criteria and environmental constraints;
- Local communities should be involved in the design and implementation processes since they have acquiring knowledge and expertise in design and building over the years;
- All interior designs should be integrated harmoniously with nature and architecture forms should not compete with, but should complement, the natural landscape.



Designing an ecolodge is a new and critical challenge not only for architects and planners but also for interior designers. Such difficulty results from the absence of knowledge and/or experience in dealing with natural resources, ecological character of the region, and sometimes the local culture.

The approach of place-based design is already known and defined in the field of architecture and urban planning that refers to design communities or buildings to include, integrate, and connect, the site's natural characteristic resources into design (Williams, 2007). However, this approach of ecological design thinking about the interior design spaces and elements has not been considered practically in most of the recent projects and it is not placed as the top of priority of most of interior designers. Generally, interior spaces have emerged from the exterior lines of architecture either from freer plan forms or from pure geometrical forms such as square, rectangle, hexagon or circle. In the context of ecolodge project, interior space is much more than a surface on which to distribute furniture pieces; a unified use of materials and functions – in and out - will provide identity of the used patterns and offer new experiences of guests of the ecolodge. The interior space of the ecolodge has seasonal change, so it should rely more on passive systems like window shading, thick walls, and vegetation. It is very important that the three-dimensional interior space and its elements create the form and the skin of the structure in a manner that identifies physical features of local materials. Below are some examples of international ecolodges, see Figure 1.



Figure 1. Interior and exterior examples of ecolodges from different countries that show different opportunities to be connected to nature.



The design layout from inside should be in harmony with nature, it should eliminate the sense of confinement. It has to be dynamic: it should be an expression of connecting with attractive views that promote the aesthetics of the outside environment. Using of local construction materials with an authentic language is necessary without any dogmatic symbols. Careful interior and exterior planning of the ecolodges offers an excellent opportunity of private areas for relaxation and meditation, where every indoor space experiences reflect an outdoor accessibility. In addition, the language of vernacular architecture can be utilized in the interiors of Ecolodges through patterns, colors and textures to be in harmony with image of the region. These traditional items play an important role in shaping the mood of interior environment and can be used as a source of local design concepts.

Furthermore, there are considerable impacts from surroundings on the interior space, such as winds and sun, so the integration of different functions of a window could work more efficiently and the arrangement in the indoor space to control the climate and how the sun angle, intensity, and duration (Williams, 2007, P. 105). Also, arrangement of the interior space of ecolodges has to enhance the connection between guests and external environment by bringing natural and cultural items in. This is central to the spatial plan and interior design scheme. Figure 2 below principally attempts to illustrate and to highlight the major potentials fields influencing the interior design elements of the ecolodge from different perspectives.

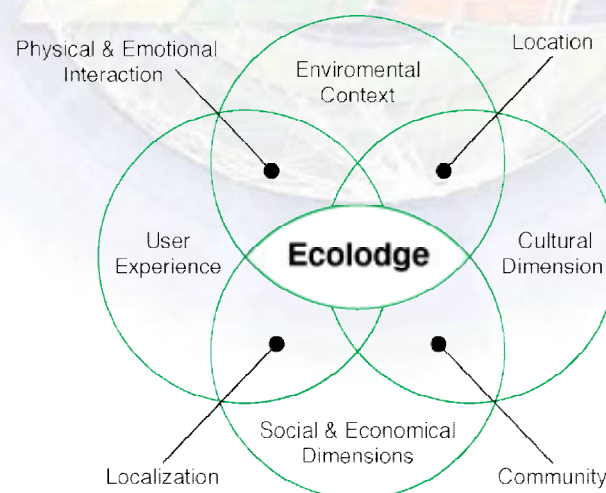


Figure 2. Ecolodge is illustrated as a result of four intersecting circles connecting environment, culture, social and economical dimensions and user experience.



3. THE CREATION OF ECOLOGES

Ecotourism is in the core of the tourism development strategy in Egypt and there are considerable efforts to promote such type of tourism. According to Whaba, 1997 and Eraqi, 2007, this strategy provides an important consideration that is given to the protection of the unique heritage of Egypt beside the protection of the resources of ecotourism. Egypt is well positioned to offer ecotourism conditions to the environmentally responsible national and international tourist. Some areas in Egypt have become very famous in the field of ecotourism such as the Red Sea ecolodges and the Western Oasis of Siwa. Fayoum Oasis is also a promising area that has all potential to be a famous ecotourism area in Egypt. (USAID, 2008).

A case study of Fayoum and Siwa Oasis

The following are the main results of the field survey of Fayoum and Siwa oasis conducted through analysis of eco-friendly interior design items through research based on image – and qualitative content analysis of the two areas, along with the fact that interior design is not just a walls, it has the power to portray the beauty of the place. This approach is becoming one of the crucial topics in interior architecture discourse today.

Ecolodge case study: Fayoum

The ecosystems of Fayoum has a wide range of potentials combining different types of tourism products and a unique blend of climate and geology create a fascinating landscape in this desert region where the sandy desert, lush green oasis and lakes of Fayoum meet. Fayoum oasis contains three protected areas declared as a UNESCO World Heritage Site (EEAA, 2004): Qaroun Lake; Wadi El-Rayan and Wadi El-Hitan.

Basically, the most interesting starting point for the creation of ecolodges in such areas is the green local materials such as palm trees, reed, bamboo, rice straw, stone, sand, reed, and wood. According to the survey conducted in these areas, healthy interior environment is very important by making sure that building design from outside and inside do not emit substance and gasses into the interior atmosphere, this is one of the major principles of an environmental building design, according to Fisher, 2005. Also, a key feature of the interior space of an Ecolodge is that the orientation and location of the functions within the spaces and the connection with daylight and having natural ventilation. From the aesthetic perspectives, it is fundamental to the guests to offer a design language by which an understanding of the natural



elements of the region such as using unusual placements of products allows the viewer to think twice about the known usage of the surrounding environment such as plates as part of the architecture, or ropes in the placement of the curtains to be more controlled and add function to something that is usually just available for shade nothing else. Most of walls of ecolodges in Fayoum are made of limestone, the domes structure is very popular and inclined vaults were made of bricks, and load-bearing masonry has been used as methods of applying construction. Figure 3 illustrates a scheme of traditional materials used in environmental buildings.



Figure 3. Scheme traditional materials used in the field of Environmental design

Another green idea that has been implemented is having the villagers participate in the construction and for building furniture due to the fact they living and well settled in the area. Due to the wide availability of palm trees all over Fayoum, the furniture used inside the ecolodges are made locally by the hands of craftsmen, mostly created are interlocking seating objects and also using wood and ropes materials are found easily in the area and are used out of their context to create unique natural look furniture pieces. Furthermore, the most interesting part in all accessories used in furnishing all ecolodges in Fayoum is pottery, See Figure 4.



Figure 4. Natural patterns and dome structures is very popular and are seen in many areas in Fayoum to increase sustainability of the form and functions.

Ecologde case study: Swia Oasis

The desert surrounds the main Siwa Oasis, with unique landscapes and geological formations as well as other features such as natural springs with opportunities for swimming. The scenery varies with its spectacular elements such salt lakes, rock formations, dunes, opportunities for sand, etc. In addition, local communities with unique culture, interesting custom, handicrafts local festivities, traditional architecture, building materials, all have made the area a destination for an increasing influx of visitors. Both Egyptian and foreigners equally are interested with the beauty and uniqueness of the place, (Bah El Din, 2002). Such opportunities would no doubt be the best criteria to create an ecolodge; the visitors will explore a unique experience utilizing a lot of stories and images of the fantastic wilderness of the area. Using local natural material with creative ideas to make use of the benefits of the available materials is the main issue of designers to provide comfortable living interior spaces inside the ecolodge.

Through this research, several meetings took place with experts from tourism management in order to recognize the importance of integrating site analysis into interior architecture planning. The way interior designers may expand their knowledge of problem solving to include local organic building materials such as Kershef– a mixture of rock salt and mud in the Siwan language - and natural systems for ventilation. These environmental factors are applied in several projects; for example, Adrère Amellal, 17 kilometers from Siwa City. In the AdrèreAmellal ecolodge, the interior design items of accommodation units, food and beverage service and utilities are growing at the natural context of the site. Furthermore, the conservation value of the site is considered in the exterior and interior architecture. The ecological building



concept in Adrère Amellal ecolodge creates environmental friendly and energy efficient interior spaces including the walls built out of Kershef to give a moderate temperature throughout the day and it is non-intrusive to the environment and supportive to the local economy. Various stakeholders working and aware very well of Adrère Amellal (Figur 5) indicated that using Kershef and salt blocks in building ecolodges offers appreciation and respect to the environment and its culture. There is an extremely strong sense in building that the ceiling are made from dried palm beams, optimal for maintain cool in the heat. From inside, the ecolodge is very simple and is also rich in using handicrafts as traditional cultural techniques in doors, widows, fixtures and furniture.

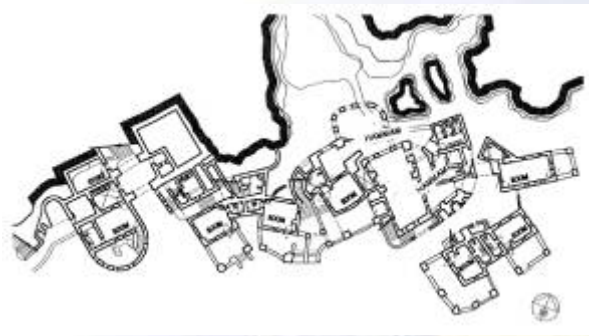


Figure 5. Adrère Amellal ecolodge is using the style of vernacular architecture in Siwa – Form and Materials

Basically, the underlying principle is the premise that all interior design items should be designed from natural materials and to work with climate and natural energy sources. The ecolodge has no electricity; it depends on beeswax candles at night. It designed to minimize the use of new resources through upgrading of existing materials or through recycling material or recycling spaces, i.e. “adaptive re-use”. This is very obvious in using raw salt rocks for creating lighting units out of it. Embroideries, which is also used, definitely add beauty to interior design atmosphere.

The authenticity of the place and heritage are considerable for interior design items of the Adrère Amellal ecolodge. On the one hand, the physical interior spaces accomplish an authentic experience through the relationship with handmade patterns of traditional Siwan products. On the other hand, interior space reflects a particular pleasure of going nature and adding sophisticated allure to the organic life. Within the context of cultural heritage, interior items of



the ecolodge is expressing the relative integrity of the site by which ornaments and palm leaves are used, while doors and windows are ideally positioned to capture the desert breeze. The entire construction of the ecolodge has been carried out by local materials and local craftsmen. Adrère Amellal ecolodge offers a unique user experience with a full of inspiration of nature, organic design, organic food and different health programs. Figure 6 illustrates the style of the ecolodge form inside.



Figure 6. Interior design of bedroom and restaurant style of the Adrère Amellal ecolodge.

Utilizing design tools in Adrère Amellal ecolodge starts with the premise that interior, architecture, nature and environment cannot be thought separately. Optimum forms and functions are growing from the dialogue that exists between natural materials and traditional techniques used to create relaxing and comfortable interiority. The proper interior design planning that integrated perfectly with exterior environment gives the Adrère Amellal ecolodge a great impact on the field of Eco-tourism around the world. It was awarded the “Best Resort” at Global Vision Award, 2006.

4. GREEN PRINCIPLES OF INTERIOR DESIGN FOR THE ECOLODGE

In the context of the rise of ecolodge as the new trends in the eco-tourism industry in recent years, this research points out a set of green principles through the eyes of interior designer. However, the topic of the ecolodges and even eco-tourism is much broader than interior designers or architects may think. The suggested green principles of interior design items for



such trend is not intended as a plan or set that must be followed, but they have been selected to focus on achieving true balance, interior and exterior, in terms of the site's natural characteristics as well as natural resources.

Site and environmental analysis

Here, the underlying principle is that the green interior design process of an ecolodge should be started by linking facts of the site and all aspect of the regional environmental conditions. An analysis of site in terms of location, geological history, anthropology, and climate should provide significant information that would help not only the architects, but also interior designers. Therefore, such information provides understanding to how building form of ecolodge and how the disposition of interior spaces can alter internal comfort conditions. In other words, the interaction of building, inside and outside, and its site in terms of space orientation, sun angle, natural ventilation, natural light, landscape, and topography all determine physical contact with guests and visitors. Thus it would become a major and essential factor for designing ecological buildings. The site and environmental analysis can be considered from separate perspectives and different professions, however, there should be a strong overlap between them to offer information that are unique to each region and site to eventually connect them.

Local culture and authenticity

Culture appears in the social context when people interact with each other in a form of community and in their manner of clothing, lifestyle, traditions, and through the everyday products. The distinctive features of the local culture and cultural heritage are the basic principles of ecolodge that the local community can offer to tourists allowing them to be in close contact with the traditions of the region. Preserving the unique character of the place is necessary and should be considered in all details of interior items of the ecolodge to attract tourists. It is the expression of culture authenticity through handmade products such as furniture pieces and interior accessories that reflect the value of the place and its community. This means that interior design process should integrate and connect the patterns of origins into objects. From the perspective of local culture and authenticity, ecolodge should promote a conversation of the region's rich natural and cultural heritage, such as using palm trunks and palm leaves on the walls and roof, sitting on local Kilim carpet or date palm leaflet weaved carpet. This type of authenticity gives a sense of originality.



Maximizing the use of organic building materials

Ecolodge is the type of organic architecture that seeks to maximize the use of natural resources. The main primes in this context that ecolodge is structured from the use of local organic materials that are environmental friendly and are part of the surrounding landscape. The built structure and local materials of the ecolodge appears as an extension of the natural environment and grow from the surroundings of the place. Traditional building materials and techniques lead to practical and comfortable living interior spaces. Inside the ecolodge using organic materials provide harmony with nature achieving an emotional conversation with nature. Interior furnishing should utilize of local materials and hand labor to promote the skills of local people. In addition, the traditional approach of ecolodge with natural materials to produce low waste and re-use different material and object, thus ultimate recycling. Using biodegradable materials is very important; examples from the Egyptian context include date palm trees trunks, leaves, bamboo and reed.

Sustaining the aesthetic quality of the local surroundings

The ecolodge is the core of ecotourism experience that reflects the environmental aesthetics of the place. It is not only about size of the ecolodge unit or the building type and height, but it is about demonstration the beauty of traditional styles that convey nonverbal messages for expressing the value of local surroundings. Such effect can be reflected through traditional styles of building, vernacular architecture, and craft products. Consideration of the optical values of these elements raises a value of the aesthetic quality. This can be illustrated in the context of interior design of the ecolodge through a particular attention to forms of interior spaces, colors, and textures. Interior forms of walls and ceilings are important items of the interior space of the ecolodge to give an emotional experience to feel the wildlife of the exterior environment. In the inside spaces, natural patterns should draw on the beauty of the exiting landscape as a unique and vital to the region and site of the ecology. There are also considerable impacts from the local surroundings on the interior space, such as color and texture combinations inspired by natural environmental such as rocks, desert sand, plants, the sea, and mountains. The extensive use of natural colors and variable textures causes comfort and evoke soothing pastel tones inside the lodge. Colors of furnishings should be warm and blend with the surroundings, utilizing warm natural wood, local gauzy linen, and pottery, etc. to create a relaxed intimacy in natural harmony with the surroundings.



Below Figure 7 presents the approach of four principles of interior design for ecolodge.





Conclusion

The paper concludes that ecolodge is an important trend and it is the core component in field of eco-tourism nowadays that integrates local natural environment, and connects the site's natural characteristics into the exterior and interior design items. This research described first the influences of the concept of ecolodge as eco-friendly resort on the interior design elements, as the main concern of this research. It was argued without doubt that interior space of the ecolodge unites should follow the natural physical context in terms of climate, history, site landscape, and culture of the community. An important opportunity for interior design to be connected to natural context achieving functional interior layout that should grow from the physical surroundings of the place and should not compete with the natural landscape. These findings were interpreted through analysis study of two ecolodges in Egypt: Fayoum and Siwa oases. The visualized layers of interior design items that reflect the positive impact of surroundings on the every interior design details used. Such local traditional building forms and materials, region's natural and cultural heritage, and how the style of the interior creates the proper conversation of natural and cultural resources. This implies that the ecolodge look form inside should be synchronized with the landscape and the environmental conditions outside. The study points out a set of four green principles of interior design items that are seen important to be integrated into the design process of an ecolodge. The site and environmental analysis, local culture and authenticity, maximizing the use of organic building materials, and sustaining the aesthetic quality of the local surroundings were all explained in the research. Understanding the intersections between these principles would enable interior designers to incorporate new knowledge and new criteria, achieving both functional design layouts as well as aesthetic elements of ecolodge accommodation to contribute towards unique use of the natural beauty of landscape and the experiences of interaction with culture artifacts from local community for more culture awareness and respect for natural values. To conclude, this research constructs a multivalent bridge between interior and exterior design element of the ecolodge, bridging the gap between interior and exterior architecture fields.



Outlook

The intention of this research paper is to show the potentials of ecolodge as a natural based hotel unit and the role of interior design to translate traditional materials and techniques with respect to the special character of the surroundings and natural resources. However, there is a need to pay special attention to other factors that are also part of the design process of ecolodge such water management, organic waste treatment, and waste-reuse. These factors are more related to the overall planning of the design program of eco-tourism.

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