

A COLLABORATIVE PROCESS FOR PLANNING AN ECOLOGE DEMONSTRATION PROJECT IN A BIOLOGICALLY SENSITIVE DESERT DESTINATION

Ashraf Salama, Ph.D.

Adams Group Consultants LLC, Charlotte, North Carolina

Department of Architecture, Al Azhar University, Cairo (on leave)

(A) ABSTRACT

An ambitious strategic plan for tourism development in the Red Sea region is currently implemented. Without adequate concern for environmental protection this development could cause ecological threats. Problems resulted from conventional tourism corroborate the need for a culturally and environmentally responsible alternative, namely ecotourism. Consequently, ecologically sensitive facilities are in high demand that can be met with ecolodges. This paper reports on a collaborative process for developing an ecolodge demonstration project. The process was initiated and tested involving a number of experts and encompassing participatory mechanisms, site analyses, and interviews. The results of this process were incorporated into a final planning alternative that is envisioned as a tool that guides the professional community in Egypt toward the development of sustainable tourism facilities in the region.

Ecotourism; Ecolodge; Collaboration; Participatory Design; Charette; Gaming Techniques

(A) INTRODUCTION

Sustainable tourism is emerging as a positive reaction to the overall environmental degradation. It generates foreign exchange, creates local employment, and increases environmental awareness, while preserving natural and cultural resources tourists travel to experience and enjoy. Uncontrolled mass tourism contributes to the degradation of many areas of natural and cultural significance, encompassing the loss of natural and cultural diversity. Literature on sustainable tourism asserts that although tourism can be a good

source of revenue for an area or a region, it produces negative impacts on soil, water, vegetation, wild life, marine life, aesthetics of the landscape, and the cultural environment (UNEP, 2001; World Ecotourism Summit, 2002). On the one hand, overcrowding, misuse of natural resources, the construction of large scale buildings and infrastructure produce negative impacts on the environment. On the other hand, problems arise if the number of tourists is large and the resource is overused.

An ambitious tourism development plan for the Red Sea region is currently implemented. Without adequate concern for environmental protection and safeguards this development could cause ecological threats. According to Tourism Development Authority-TDA reports, results of environmental audits to a number of resorts along the Red Sea coast revealed that hotel operations could inevitably cause environmental damage to the ecological sustainability of the Red Sea. As well, diving activities and desert safaris malpractice pose tremendous pressure on the sensitive environment of the region (Salama, 1998 a). Problems resulted from conventional tourism mandate the need for an environmentally responsible alternative. Concomitantly, well-planned, ecologically sensitive facilities are in high demand that can be met with ecolodges. These are small-scale facilities where activities, water, waste, and energy systems are all managed with conservation as a top priority.

This paper explores the decision making process of an ecolodge demonstration project. Based on a grant from the Tourism Development Authority in Egypt, an ecolodge collaborative planning process was initiated and tested involving a number of experts representing different professional disciplines. The process began with site selection and analysis where the environmental and cultural contexts were systematically surveyed. Utilizing gaming techniques a charette process was established in which experts were involved. The process was intensive and multi-layered, encompassing an evaluation of two planning alternatives against a number of environmental and contextual measures. A follow-up visioning session was conducted in which environmental, socio-cultural, and economic objectives were defined. Participants were involved in a process of identifying a list of activities that support the objectives. Group discussions for generating alternatives took place. The results of this process were incorporated into a

planning alternative, conceived as a tool that guides the professional community toward the development of sustainable tourism facilities in the Red Sea region.

(A) PROBLEM STATEMENT: THE TRUE NEED FOR ECOLOGES

Conventional tourism in biologically and culturally sensitive destinations produces negative impacts on natural and cultural resources. It constitutes barriers between tourists and the host culture at several levels. The problem of traditional resorts in environmentally sensitive destinations is the way in which they are developed and supported. The typical development pattern is that an outsider develops a property; profits go to the developer while locals are hired at minimal wages for the service of tourists. This immediately creates a barrier between the locals and the tourists. Other critical environmental questions arise: What is done with the waste that is generated? Where do water and food come from? How do people arrive to the site? Is overuse destroying the immediate surroundings? What overall impact has this resort made? All these questions are challenging traditional tourist facilities.

The problem is multifaceted where the socio cultural impact of traditional tourism appears to be a crucial issue. When tourists arrive at their destinations, they take with them different beliefs and behaviors that influence the host culture. The influence of tourists on the societies they visit is much stronger than the opposite (Anton, 1999). The majority of tourists are from affluent countries and dominant cultures. The visitors’ culture as portrayed by tourists’ behavior appears out of context. On the other hand, tourists while on vacation, change their styles of socializing and interaction. Thus, the view that local people receive of the culture of the visitors is not only strange to them, but also inaccurate. The ecolodge is a building type that overcomes these obstacles and removes those barriers.

(A) METHODOLOGY

The methodology adopts the case study approach by analytically describing a collaborative process for planning an ecolodge demonstration project. As a method of qualitative research a case study can accommodate a variety of epistemological orientations and data collection techniques. Thus, the structure and

the content of the case study are derived from site surveys, interviews, and group interaction techniques. These have been employed in an interdisciplinary charette process that involved visioning, goal setting, and alternative generation sessions. This process is envisioned as a feedback mechanism that invigorates planning decisions toward the development of ecolodge facilities in biologically sensitive desert destinations.

(A) ECO-DEVELOPMENT AND SUSTAINABLE TOURISM

Ecological design stems from “ecodevelopment” as an umbrella field. It is a package of concepts, ethics, and programs that provides designers and planners a criterion of social and ecological rationality that are different from the market logic. It is rooted in the real need to fit human settlement within the patterns of nature. Recent literature corroborates the multi-layered aspects of ecodevelopment (Capra et al., 1992; Sacks, 1987). Politically, ecodevelopment is decentralized and democratic. Socially and culturally, it reflects the diverse reality of human affairs and the tapestry of life. Economically, it adopts the premise that economy and ecology are both essentially to do with the flow of energy and materials through a system of values that represent social and cultural constructs. Ecodevelopment can be envisaged in terms of sustainable architecture philosophy that can be labeled as “ecotecture” for tourism facilities. Such philosophy is regarded as an approach that demands an understanding of the consequences of certain decisions and actions. Aspects of ecotecture development process can be understood when comparing them with the development process of conventional architecture in terms of goals, means, resources, and politics as shown in Figure (1)

Terms of Comparison	The Development Process of Conventional Architecture	The Development Process of Ecotecture
GOAL	- Greed driven - To make a large profit	- Community driven - To meet community needs and social expectations
MEANS	- Land speculation - Community exploitation	- Land stewardship - Community empowerment
FINANCIAL RESOURCES	- Borrowing from investors, banks, bonds - Profit oriented	- Ethical investment - Profits benefit the community
MATERIALS AND HUMAN RESOURCES	- Arbitrary gain / constraint - Market driven - Capital intensive - Nature and people are treated as the fuel of economic activity	- Carefully selected - Environmentally responsible - Labor intensive - The economy is in the service of community and ecology
POLITICS	- Exclusive - Top down	- Inclusive - Flat control

Figure 1: Comparative analysis between the development processes of conventional architecture and ecotecture.

The question that can be raised at this point is how the concept of ecotecture for tourism facilities can be transformed from policies and strategies into actual practices? The Ecolodge as an emerging building type can be the answer.

(A) THE ECOLOGE: DEFINITION AND NEED

It is critical to establish a working definition of the term “Ecolodge”. According to Hawkins et al. (1995), the term is a tourism industry label used to identify a nature dependent facility that meets the principles of sustainable tourism. Such a facility is developed and managed in an environmentally sensitive manner (Ceballos Lascurain, 1996 & 1997). Other critical concerns include the nearby natural and cultural attractions and the way in which local people are involved in the process of developing and operating ecolodges.

With a design that respects the environment and that is in harmony with the landscape and the cultural setting of a locality, an ecolodge is constructed using recycled and locally produced building materials while employing solar or alternative energy strategies, recycling the waste and the wastewater it generates, and serving locally grown and produced food (Salama, 1998 b). The ecolodge is a small-scale facility that blends in with its surroundings, offering visitors an environmental experience of the natural and cultural world around them (Salama, 2000).

The beginning of official efforts toward recognizing the ecolodge concept in Egypt started in 1996. Efforts involved the recognition that all concerned parties should be involved in the development of sustainable tourism policies and strategies. A concept report on ecolodge development was developed, presenting measures on design and economic feasibility of ecolodges. Although the document was enlightening, it was overwhelming since it has adopted a “top-down” approach that was criticized of being more evaluative than informative. As a result, a decision was taken by the Tourism Development Authority-TDA to develop a set of guidelines that corresponds to the local environment and the cultural and economic contexts. The author was subcontracted as a consultant for this activity, the result of which was three workbooks that clarified the value of sustainable tourism, and outlined requirements for ecolodge development in Egypt. A

series of meetings were conducted to envision ways in which further steps can be taken toward the promotion of the ecolodge concept. Discussions resulted in a decision for transforming the workbooks into a demonstration project. In the summer of 2001, TDA contacted the author to develop a demonstration project that acts as a guiding example for future ecolodge planning and design.

(A) CONTEXTUAL ANALYSIS OF AL QULA'AN: A BIOLOGICALLY SENSITIVE DESTINATION

Field trips to the Southern Red Sea region have been conducted with special focus on the coastal area between the South of the city of Quseir and Shalateen community toward the borders with Sudan. This step resulted in identifying several environmentally sensitive areas that were regarded as potential sites for sustainable tourism development. In collaboration with experts in marine biology, geology and environmental planning, Al Qula'an Bay was selected as a site for the demonstration project.

Al Qula'an is located 320.00 km south of the city of Quseir and 40.00 km. north of the town of Bernice. It enjoys unique richness in terms of natural and cultural resources. Natural features include distinctive fringe coral reefs, sandstone dunes with slight slopes, and biological diversity. The site encompasses dense mangrove trees, desert shrubs, and few desert acacia trees. It enjoys a variety of wild life exemplified by migrating birds, lamer falcons, black kites, and plovers. Cultural features include a traditional settlement of about 150 people of families descendent of Al Ababda tribe. The settlement has its own cultural life style and speaks both Bishariya language and Arabic. Most of its members work in fishing and animal breeding, and live in very poor conditions. Preliminary interviews with members of this settlement revealed their needs and aspirations.

Intensive site analysis studies were conducted utilizing five major factors. These are: the overall environmental context, topographical features, climatic conditions, natural and cultural attractions, and positive and negative views. Each factor has been constituted in terms of design constraints and responses, thereby establishing a set of planning imperatives specific to the site. The response to topographical constraints confirms that water creeks should be avoided; hilly areas are appropriate for

accommodation units while other flat areas are appropriate for larger one-story service buildings that support the activities. In order not to compete with the physical setting all buildings should be less than 4.00 m. high (Figure 2). However, light structures and pergolas were proposed for certain recreational activities on building roofs.

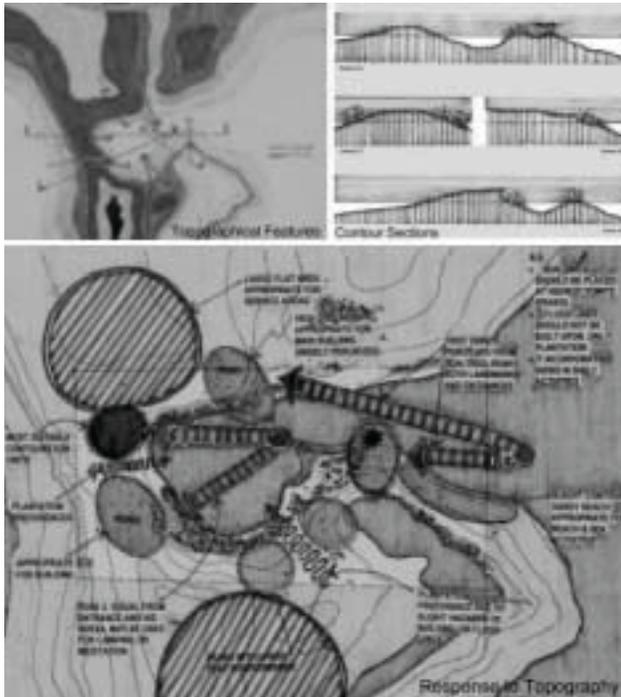


Figure 2: Constraints and responses to topography

The response to the environmental context accentuates the ultimate respect to the physical context, while utilizing the existing acacia trees as landmarks, and avoiding the introduction of buildings or dense activities around the mangrove trees. Placing accommodation units apart was one of the important responses to the overall environmental context so that wild life movement is not disturbed. Integrating the traditional settlement into the new project was conceived of as an important value that should be considered while at the same time preserving their traditional life and providing them with employment opportunities. These aspects were expressed during the interviews that were conducted with the surveyed individuals representing the settlement. Additional responses included minimizing building openings in southern facades, while exposing large amounts of building surfaces to the North breeze, and utilizing traditional building techniques and using local materials. In order to reduce the consumption of energy, cross ventilation is emphasized including the

spatial distribution of buildings within the site and the distribution of openings in interior spaces. A matrix of design responses was established, acting as a guiding tool for defining planning and design imperatives.

(A) THE ECOLOGE CHARETTE PROCESS

Literature on participatory design asserts of the value of collaboration (Hester, 1990, Forester, 1999, Sanoff, 2000). A design charrette can be defined as a process that convenes interest groups in intensive interactive meetings. The charrette process refers to the rapid pace at which design decisions are made. Sanoff argues that it is a remarkable participatory design strategy when applied to a specific goal oriented objectives of a clearly defined problem. Participants in the process represented different specialties of local and international experts including policy planners, architects, environmental planners, geologists, environmental management experts, economists, and marketing specialists. The process involved two two-hour events: The first was a visioning session that aimed at exploring the project vision while evaluating layout alternatives. It was regarded as a catalyst for interactive discussions. The second event was a goal setting and alternative generation meeting that aimed at defining the project's objectives and activities while generating alternatives utilizing gaming techniques.

(A) THE VISIONING SESSION: ASSESSMENT OF LAYOUT ALTERNATIVES

Visioning sessions are critical to the success of collaborative planning and design. It is believed that a vision should present a picture of what the future that we intend to create might be and that participants should give direction to a vision. Without visioning designers will not be able to comprehend what the true goals of the project really are and what is expected from a project in a specific community or context.

Based on a preliminary architectural program for the demonstration project two-layout alternatives were prepared. The session was preceded by a kickoff short event allowing participants to get to know each other and to understand the purpose of the process. A presentation was delivered to sensitize participants toward understanding the planning and design intentions. Layout alternatives were presented and a checklist was used where each participant compared

the alternatives against a number of measures (Figure 3). This was followed by a group discussion where site issues were elaborated and the merits and disadvantages of each alternative were explored. Participants contributed new ideas while narrowing down the range of options. The diversity of backgrounds and disciplines represented by the participants helped forming a comprehensive vision toward developing another alternative. While architects and planners introduced specific recommendations for actions, other specialists provided ideas for establishing a framework within which design decisions are made, including feasibility and marketing issues. The visioning session resulted in a consensus decision on developing a third alternative that combines the merits of the initial alternatives.

Assessment Criteria	Alternatives	
	A	B
Distribution of units		
Clustering of units		
Relationship of accommodation units to other main facilities		
Attitude towards traditional settlement		
Attitude towards the natural context		
Relationship of buildings to main site features		
Suitability and diversity of activities		
Visual experience		
Functionality of buildings in relation to the activities		
Interaction with Mangrove trees		
Overall interaction with the bay		
Interface with coastal line		
Structural integrity		
Relationship between the main building and main highway		

Figure 3: Criteria used to assess and compare the proposed layout alternatives

(A) GOAL SETTING AND ALTERNATIVE GENERATION SESSION

Goal setting is regarded as the guiding process necessary for successful planning. The primary inputs to goal setting are the collective knowledge, skills, abilities, and experiences of the participants. The results of the visioning session and the assessment of the ecolodge layout alternatives served as a prelude for the identification of the project objectives.

A design game was devised for the goal setting session. The game is based on the belief that objectives generate activities and activities generate spaces and places. It included a set of sheets handed out to the participants to work in groups of three, forming a total of five teams. The first sheet outlined a list of objectives classified in environmental, socio-cultural,

and economic terms. The second sheet was a list of possible activities that may take place in an ecolodge project. The third sheet was to record a few number of objectives and the corresponding activities. The fourth sheet contained building blocks representing the activities (Figure 4). The final sheet was a spatial layout game board and a site map illustrated on the board using a grid. The process followed the procedures outlined below:

- Participants were involved in a group discussion for identifying the most important objectives that they believe they are critical to the success of the project.
- Defining different types of activities that match the identified objectives.
- After extensive discussion among the participants, they were asked to record the objectives and the activities they have selected.
- Teams were asked to generate design alternatives using the building blocks and the spatial layout game board, based on the objectives and activities each team has defined.
- Each team produced an ecolodge layout alternative representing their conceptions and thoughts based on their understanding of the site, and the project purpose. This was followed by extensive collective discussions, elaborating on the alternatives while debating the merits of each alternative, and the way in which those merits can be incorporated into a final planning and design scheme.



Figure 4: Game materials used in the goal setting and alternative generation session.

(A) DISCUSSION: THE ECOLOGE DEMONSTRATION PROJECT

The results of Al Qula'an contextual analysis and the charette process led to a clearer definition of the final list of project objectives that are outlined below:

(B) Environmental Objectives:

- Provide the simplest technology that incorporates energy conserving strategies.
- Educate visitors that knowledge of local environment represents a valuable experience.
- Provide awareness and education for visitors on traditional and natural features, wildlife, and local culture.

(B) Socio-Cultural Objectives:

- Provide a sense of belonging and ownership among the tourists.
- Provide opportunities for interaction between domestic and tourists cultures.
- Provide the most relaxing environment for tourists.
- Provide opportunities for the demonstration of local crafts and traditional arts of the region.

(B) Economic Objectives:

- Raise the local standard of living by involving the local population in the operations of the ecolodge.
- Enhance economic awareness through the most efficient use of local resources.
- Offer opportunities that achieve a self-reliant local economy "self contained community."
- Provide research opportunities for the visitors toward interpretation and development of projects that minimize human impacts on the environment.

A set of activities was identified based on the objectives. In turn, it was translated into the ecolodge architectural program. The program included: 1) the main building that encompasses reception space, administration, restaurant, and lounges; 2) two types of accommodation units; 3) a crafts and cultural center integrated with the existing traditional settlement, 4) environmental research center for training and interpretation; 4) waste recycling unit and the site central utilities; 5) camping area; 6) staff housing; 7) observation tower for bird watching, in addition to

outdoor areas designated for outdoor recreation and nature-based activities (Figures 5-7).



Figure 5: Final proposed project

Figure 6: Organic clustering of accommodation units

In order to develop the final planning alternative, the results of the assessment process together with the site analytical studies were incorporated to establish a layout adjacency matrix that map out the required proximity relationships between the buildings. Building designs were developed with two principles in mind: The first is building "less;" the minimal required areas that accommodate the ecolodge activities. The second is integrating traditional building materials and construction techniques. Building materials included sand-stone "hokkak" that can be extracted from nearby mountains for walls, and reed, dried palm trunks, and tent fiber for roofs. The proposed construction techniques included a wall-bearing system with vaults and domes for the roofing of larger spaces.

(A) CONCLUSION

The collaborative approach to planning and designing an ecolodge demonstration project clearly emphasizes that the process has influenced the quality and acceptance of the final project. TDA officials reported previous unsuccessful attempts at initiating collaborative planning processes. Engaging the key players together with experts in a structured process provided the support base necessary to move forward through a pilot project; an idea that is currently under debate, particularly since funding can be raised through international grant programs and the private sector.



Figure 7: The main building and cultural center. Accessibility and integration into the existing traditional settlement were determining factors in the final planning scheme.

The techniques utilized in the process represent a dramatic departure from conventional planning practices. Research findings that are integral parts of the ecolodge planning and design process are transformed into a plan of action. Typical approaches that direct the efforts only toward the development of guideline documents require exhaustive interpretation by the professional community involving gaps between the guidelines and their implementation. The structured collaborative process resulted in a valuable knowledge base that is directly utilized in the planning scheme. Using collaborative techniques for decision-making should be seen as a strategy for involving all key players where creativity and innovation can be achieved by having all concerned parties involved in the process while identifying the best collaboration strategy that acts as a feedback mechanism.

(A) REFERENCES

- Anton, D. 1999. Tourism, Biodiversity, and Culture. Online Document. www.idrc.ca/books/reports/1996/21-04e.html
- Capra, F. Steindel-Rast, D., and Matus, T. 1992. *Belonging to the Universe: New Thinking about God and Nature*. Harmondsworth: Penguin Books.**
- Ceballos Lascurain, H. 1996. Tourism, Ecotourism, and Protected Areas. Gland, Switzerland: IUCN Publications.
- Ceballos Lascurain, H. 1997. Concept Report: Ecolodge Development in Egypt: Desert and Coastal Zones. EST Project. Washington, DC: USAID Publications.
- Forester, J. F. 1999. *The Deliberative Practitioner: Encouraging Participatory planning Processes*. Cambridge, MA: MIT Press.
- Hawkins, D. E., Epler Wood, M., and Bittman, S. (Eds). 1995. *The Ecolodge Source Book for Planners and Developers*. Washington, D.C.: The International Ecotourism Society (TIES).
- Hester, R. 1990. *Community Design Primer*. Los Altos, CA: Ridge Times Press.
- Sacks, J. 1987. *Development and Planning*. New York: Cambridge University Press.
- Salama, A. 1998 a. *Ecolodges: Meeting the Demand for Sustainable Tourism Development in Egypt. Traditional Dwellings and Settlements. Working Paper Series. Vol. 108*. IASTE: Berkeley, California: University of California Press.
- Salama, A. 1998 b. *Ecolodge Concept and Design Criteria*. Ecolodge Seminar. Cairo: Tourism Development Authority.
- Salama, A. 2000. *Ecolodges: A Futuristic Epic for Ecotourism Development in Egypt*. Position Paper and Presentation. Ecolodge Forum. Cairo: The Tourism Development Authority in Egypt-TDA and the Red Sea Sustainable Tourism Initiative-RSSTI.
- Sanoff, H. 2000. *Community Participation Methods in Design and Planning*. New York: John Wiley and Sons.