

An urban design approach to coastal eco-tourism development

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One important element in much contemporary tourism is a concern for the environment. The paper provides insights into an urban design approach to ecological tourism development projects. The experience from practice is drawn from two schemes for planning and urban design of new tourist developments proposed in coastal sites as places of natural beauty. They include the planning of Rossetta-Edko coast for potential tourist development and an urban design scheme for the master development of a multiple resort center in Sharm-E-Sheik. The role of urban designer in analyzing and manipulating the visual and ecological characteristics of the site and in selecting the appropriate tourist activities and development types is suggested and applied in the two case studies. The paper emphasizes the close relationship between physical planning and landscape planning in dealing with ecological tourism projects and stressed the need to provide an integrative landuse-landscape planning concepts to achieve an environmentally appropriate tourist development, and avoid physical degradation and environmental loss of natural assets

يعتبر الاهتمام بالبيئة الطبيعية احد العناصر الاساسية في حركة السياحة المعاصرة. يناقش البحث مدخل تصميم حضري لمشروعات التنمية السياحية المتوافقة مع البيئة. وقد تم استقراء المبادئ الاساسية لهذا المدخل من الخبرة والتجربة العملية لمشروعان تم اقتراحهم للتنمية السياحية في مواقع شاطئية ذات بيئة طبيعية متميزة. ويشمل البحث استعراض لمشروع التنمية السياحية الاقليمية للشاطئ الممتد بين مدينتي رشيد وادكو واحد مشروعات التصميم الحضري لمركز سياحي متعدد المنتجعات في شرم الشيخ. وقد اظهر البحث اهمية دور المصمم الحضري في تحليل واستغلال الخصائص البصرية والايكولوجية للموقع وفي اختيار انسب الانشطة ونماذج التنمية السياحية. وكذلك اظهر البحث اهمية العلاقة الوثيقة بين عناصر التخطيط الجسدي وعناصر تنسيق المواقع الطبيعية في مشروعات التنمية السياحية الايكولوجية. كما اوضح الحاجة الي تطوير مفاهيم متكاملة لمخططات استعمال الاراضي ومخططات تنسيق وحماية وتطوير البيئة الطبيعية في المناطق المحيطة بمشروعات التنمية السياحية مما يؤدي الي تنمية سياحية متوازنة وتجنب التدهور البيئي للموقع نتيجة للتنمية السياحية.

Keywords: Urban design, Landscape design, Eco-tourism, Coastal tourist development, Design methodology, Environmental resources protection.

1. Introduction

Tourism has been the fastest growing sector of the Egyptian economy during the recent few years. The number of tourists visiting Egypt in recent years has been increasing steadily reaching 4 million visitors in 1999 and contributing some 11 % to the national GDP.

Tourism in Egypt has traditionally focused on cultural tourism, namely the presence of ancient Egyptian antiquities. However in the 1980s and 1990s, new regions were being developed for a recreational type of tourism. This include the shorelines of Sinai with its strips along the golfs of Suez and Aqaba, the Red Sea coast and finally the undeveloped areas along the Mediterranean coast. The natural assets of these regions are the key

motivation for tourist development as they offer unmatched locations for relaxation as well as recreational and sporting opportunities [1].

The paper focuses on identifying the basic components of an environment-sensitive urban design model that should be utilized to inform a sustainable tourist development in areas of natural beauty. The paper draws on the experience of two case studies of practice in which the author participated. The study areas, located in two of Egypt priority zones for tourist development, concern urban planning/design schemes for tourist coastal development of Rossetta-Edko coast to the East of the city of Alexandria, and the Montaza Sharm Center at Ras-Nasrany 20km east of Sharm-El-Sheikh city.

2. Ecotourism: an approach to tourist coastal development

It is suggested that a key feature of "Post-industrial" societies is their interest to explore and witness untouched places and their natural lifestyle and life cycles [2]. Eco-tourism or Ecological tourism is a state-of the art theme of current tourist industry. With the increasing awareness, especially among advanced societies, of the needs to protecting the environment and to explore natural areas and unspoiled landscape, ecological tourism increasingly takes over other established forms of tourism. Lash & Urry, 1994 suggest that;

One important element in much contemporary tourism is a concern for the environment- that in some ways the current environmental consciousness is inconceivable without large-scale mobility. Many visitors are becoming increasingly skilled at evaluating landscapes and townscapes, at building up their cultural capital so as to be able to form more sophisticated aesthetic and environmental judgement [3].

Ecological tourism can be narrowly defined as a special type of tourism directly interested in visiting unique natural landscapes. In a broader definition it is a discipline of tourism development that integrates such development in the natural ecology and local character of a preserved natural or manmade host environment. The Eco-tourism approach necessitates therefore a rather environment-sensitive planning/urban design model that is able to fit with and sustain the aims of tourist development. Development should pay particular attention to environmental consideration including the protection and preservation of environmentally sensitive areas, and seek to maintain the natural attractiveness of the site proposed for development

In the following two case studies, aimed at a global tourist market, ecological tourism was suggested by the patrons of the development to be the framework of the proposed tourist development that influence and integrate other tourism activities including recreational and cultural tourism.

3. Case study 1: edco-rossetta plan for costal tourist development

The first case is concerned with a planning scheme sponsored by the Tourist Development Authority for a new tourist development along the 30 km Mediterranean coast between the towns of Edko and Rossetta [4]. The Rossetta-Edko coast & lake district has very good tourism potential based on its natural resources and planned new facilities. The weather is very pleasant most of year. Rain season is not very long extending mainly from November to February. In other months it is always sunny and cool due to the fresh breeze of the Mediterranean. Some characteristic sites are ideal for maritime sports (wind serving), recreational and safari activities. In addition to lake exploring and ecological tourism, fishing and canoeing can be best practiced in surrounding lake area. Furthermore, the intermediate location between the two cultural-historical centers of Alexandria (60km) and Rossetta (15km), day tours to Greek, Roman, and Islamic archeological sites and museums can be easily organized.

Major capital investment projects financed by the central government are already in progress. The new International Mediterranean Highway road (currently under construction) which extends along the Mediterranean from Libya to Israel will directly serve the district. It will provide potential tourist development with easy access to the nearest airport, (Alexandria International Airport 60 km to the west) and to the North-south highways network to Cairo and Upper Egypt. In addition a new fishing harbor/boat marina is also being built in the fishing town of Madiya and can accommodate tourist yachts and will include a fishing and recreational center on Lake Edko.

At the outset of the project, it was suggested that

- A conventional approach towards extensive recreational tourist development can harm the resources of the area and are unable to capitalize on its assets.
- The level of natural quality can best be appreciated by a high level of tourists that want to enjoy the beautiful beach and, in the same time, the natural and untouched landscape of the environment. Examples should be drawn from very popular

destinations at Zanzibar and Madagascar where such approach was achieved.

Therefore, the development strategy aimed to promote a high quality development pattern based on collective centers and not stretched development. This can be achieved through a limited intervention policy directed towards achieving three aims:

- To preserve the natural beauty of the site as the key resource of tourist development and to suggest a sensitive policy that benefits from existing resources without exploiting them in order to make proposed development sustainable.
- To integrate Tourist Development plan with the existing local communities as key elements in the ecology of the region and as key beneficiaries of the development through community development scheme and job creation.
- To invent an urban design and settlement physical planning system for tourist development that harmonizes with the qualities and characteristics of the area (a system of small village settlements similar to those exist in the hinterland)

3.1. Identifying existing resources and opportunities

In order to suggest an integrative ecological-tourism model for development, basic environmental analysis studies was undertaken to identify specific key natural zones that are visually and physically identifiable. Five zones were identified each with a characteristic and identifiable individual ecological and visual identity. These include Maadia Fishing port, Palm Plantations Zone West of Rozetta, and Natural water bonds zone, Sand dunes zone in Bossily, and finally the coast. For each zone, the elements of existing character and its potential development were highlighted (See Table1).

3.2. Major issues for consideration in development plans

As a part of the study of the potential tourist development, current facilities, land uses and activities were critically evaluated in respect to the unique and high quality of the natural resources that the area is endowed with.

3.2.1. Accessibility

Current level of accessibility from local road is not very efficient and needs an upgrading and re-planning scheme. However further development of road network in the area; namely the project of the International Coastal Motorway, has not taken in consideration the qualities of the area and the needs of Tourist development. If it is to be executed to go through the area it will lead to increased traffic and may spoil the natural beauty of the area. However, at the level of the coastal tourism development site, accessibility should be restricted to a smaller and environmentally responsive scale. The major circulation network suggested for the proposed tourist development depends on local scenic roads to help preserving the natural beauty of the area.

3.2.2. Protection of development assets

A. Green belt of palm trees

Existing hundreds of acres cultivated in palm trees and surrounding the proposed development are important assets for tourist development. Acting as an existing green belt around the site, they are not only key contributor to its local identity, character, and tranquillity of its natural beauty, but also separates it from nearby urban settlements and road system giving it a paradise feeling that should be utilized in its tourist development

B. Unique community-based fishing activity

The area is still the center for a local fishing activity that has hardly changed over hundreds of years. This activity, depending on a small-scale labor -intensive operation,

is rarely found in other countries, which have moved to mechanical large-scale fishing. Therefore it is essential to preserve the current fishing system and life style as an environmental responsible and culture specific activity to the middle northern coast of the Delta. Native Sea fishermen with their handmade and colorful large boats or Lake Fishermen with their much smaller boats are part of the ecology of the area and its cultural identity.

It is therefore essential to capitalize on such activities by upgrading the Maadeiyah harbor and the whole village to benefit from its unique location and very beautiful urban form. Exploration of local lifestyle and popular activities such as Edcu-Madiyah fishing community, local cuisine and art. Madeiyah village and harbor could be upgraded through a community development and urban design scheme to a real center for popular life style (not just artificial inside a hotel) the harbor could be surrounded by a walking esplanade where restaurants and cafes designed on the local character are distributed each gives its client a view of the fishing market and the harbor.

3.3 An integrative tourist development strategy

The integrative strategy undertook the following tasks

1. Providing a general zoning for different uses including the tourist development areas- existing settlement borders and likely extensions preserved agricultural zones and natural conservation areas. It also suggests a hierarchical road system and communication network, Basic infrastructure system and Major Tourist infrastructure components.
2. Providing an implementation strategy that includes Information system and project management- regional environmental control system- urban planning system and models for involving local government units and community representatives. The Implementation strategy will depend on defining a coordinating role and jurisdiction of a specific Development

Corporation for Tourist Regional Development of the site.

3. Providing a development tools for integrating tourist development into overall development of the region through community development and urban upgrading projects for existing settlements and coordinating the efforts undertaken already by Ministry of local administration and the non-governmental organizations in the area.

The concept of ecological tourism influenced the planning/ design process in reference to the formation of three sub-concepts; the appropriate tourist activities, the physical planning concepts, and the environmental protection policies.

3.3.1. Eco-tourist activity development concepts

Identifying and suggesting the nature of tourist activities is a key element in planning new tourist development. A sustainable activity plan would be able to utilize environmental resources without exploiting them and integrate tourist development in the host environment. The study area is the meeting point of three key ecological features of Northern Egypt, the Mediterranean coast with its sandy beaches, the river Nile and its delta valley agricultural lands and the northern lake Edko with its marshland landscape. The suggested development strategy integrates these activities in an ecological tourism model that gives a special character to every aspect of tourist development and guarantee its fit and appropriateness to the area. Three main groups of activities are suggested to utilize the three main ecological components of the development area; Coastal ecology- Lake ecology- and River ecology

A. Coastal ecology development

Coastal ecology depends more than the other two elements on the development strategy since it will be integrated in tourist development areas and created by man-made efforts. Development is suggested to keep a

landscape as it is with limited intervention on the part of the developer. The ribbon is used for bathing, walking, hiking, horse riding and other similar activities. This is followed by a development zone that can be envisaged as an ecological park integrated with tourist settlements of medium density and connected to each other with pedestrian- walking & cycling roads in addition to the access road to the back of development.

Location of settlements will be selected on the safest areas from being invaded by the winter sea waves (through remote sensing). Areas in-between which is left for the ecological parks could be planted by local flora and fauna (extension to southern palm tree green belt). Where sea invades the coastal area, such zones will be treated as a natural marshland keeping its natural landscape and organize a walking route through that. Pedestrian and hiking routes will also be connected to a system of historic fortification that currently exists and connects the proposed ecological park with the coast.

B. Lake ecology

Lake Edcu is endowed with a wealth of natural landscape that should be integrated in tourist activities plan. Day trips could be seen as the best possibility to explore the lake. Small scale Marina center from Madeiyah or Edcu should be developed where tourist can take traditional lame boat to explore the landscape and the fishing activities.

C. River ecology

The River Nile and its delta agricultural belt represent a great opportunity for ecological exploration and enjoyment of natural beauty. Day trips are also suggested to start from the proposed Marina center in Borg Rachid harbor. Tourist should be taken to see the meeting point of the river and the Mediterranean and can go south to visit the delta and villages and can reach Edfina area and the surrounding villages.

3.3.2. Physical planning concepts

A key issue for physical planning was to identify Tourist Profile and ceiling for the number of tourist. This ceiling should be determined in order to prevent shortsighted and conventional modes of development, which would exploit the resources of the area and destroy its assets eventually. It is suggested that the Development site area itself should not accommodate more than 15000-20000 tourists. Expected client is therefore of a high level, which cares more about the quality of the environment and can appreciate the natural beauty of the area.

Within this overall limit, the distribution and density of tourist development sites is a key question. The disadvantages of a low-density stretched plan was evaluated *vis a vis* a preferred plan of dense individual centers. The latter depends on groups of tourist settlements located on the edges of the most scenic spots were more appropriate. The rest of the landscape was treated as natural parks, which are only preserved for site visiting and desert activities.

As an example of this physical form, Fig. 1 shows an urban design concept for an resort collective center: Boussily Desert Coast Center. Planning concepts of this area are based upon a strictly linear plan, directing views mainly towards the existing natural sites of dunes and palms plantation zones. The thin configuration of the plan enables tourist resorts to enjoy a high degree of exposure to the breeze of the beach. The plan introduces light tourist activities & sports into the natural site area, including camping, birds watching, safaris, ...etc. The architectural treatment of tourist facilities and building design in this area is suggested to be based upon developing a local vernacular character depends on intimate urban scale traditional spaces and simple buildings with the local style and identity of a village in the desert. Fig. 2 shows a proposed architectural treatment characterized by small openings, mixture of Rossetta brick and extensive use of bay windows in upper floors. These elements enable users to enjoy the desert mild and sunny climate.

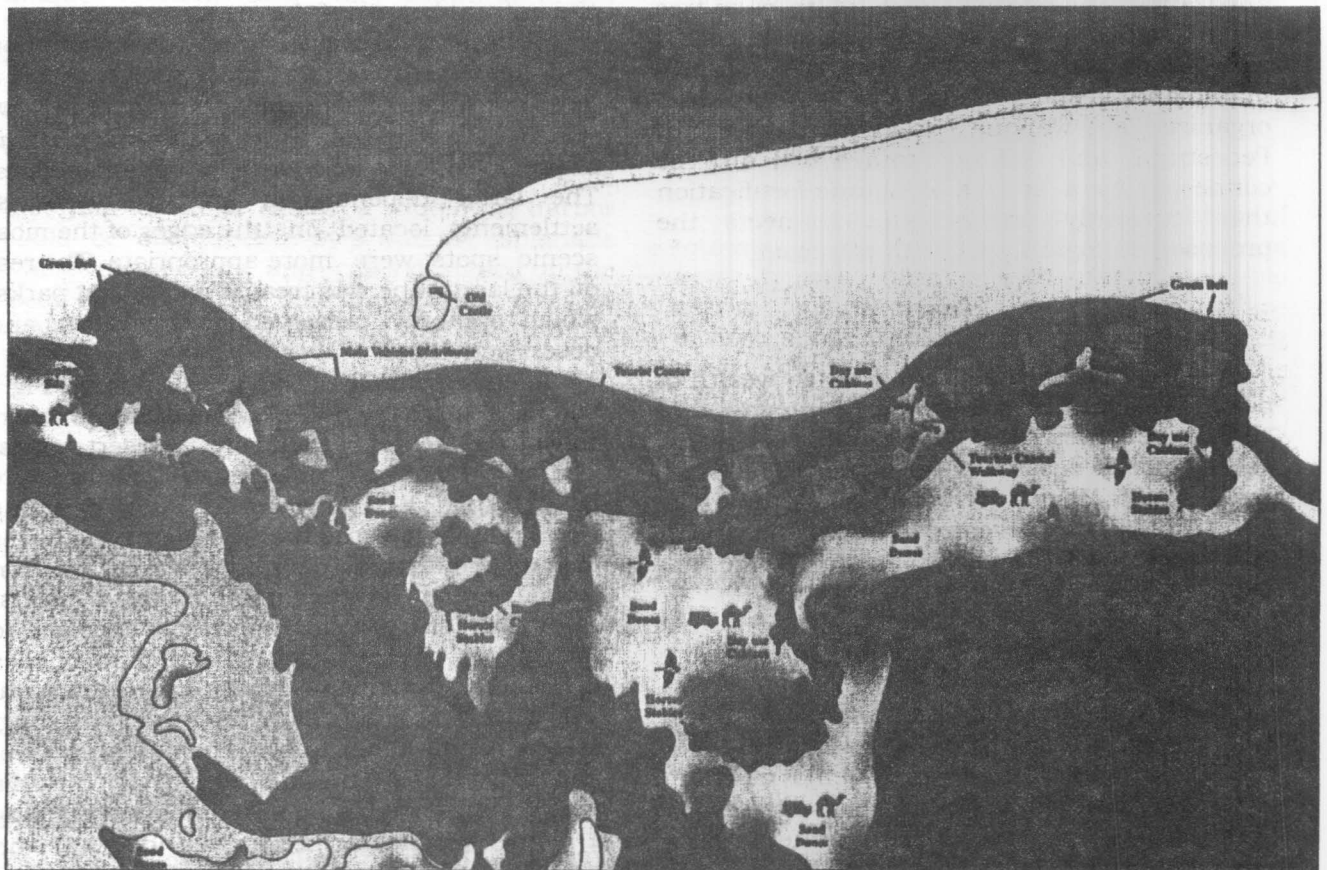


Fig 1 A conceptual urban design scheme for a multi-resort tourist center at the edge of boussifly sand dune beach (source: ressetta-Edko tourist development planning project-tourist development authority).

Table 2: Summary of development program in tourist development Zones divided into physical development and environment protection/upgrading projects.

Physical investments:	Environment improvement program:
<p><u>1) Tourists settlements:</u></p> <p><u>1- A) EDKO LAKE CENTER:</u></p> <ul style="list-style-type: none"> • A tourist settlement with different degrees of accommodation & facilities. • Recreational facilities & water sports serving centers. • Organizing canoeing, bird watching, wild-life studying trips & other activities depending on the existing nature & ecosystem. • Connecting the settlements to the main access routes: the international coastal highway, the existing road leading to Rossetta. <p><u>(1-B) BOUSSILY DESERT-COAST CENTER:</u></p> <ul style="list-style-type: none"> • Establishing new tourist settlements, overlooking the natural sand dunes & the coast. • Organizing camping, bird watching, wildlife studying tours. • Other activities can take place by the shore; yachting, surfing & other water sports can successfully take place under the management of a water sports center. <p><u>(1-C) ROSETTA COAST CENTER:</u></p> <ul style="list-style-type: none"> • Establishing new tourist settlements with self-contained recreational facilities accommodation. • Recommended International golf courses, recreational gathering spots for tourists & visitors. • Investments are expected to be higher for creating artificial means of attraction & taking advantage of the existing nature 	<ul style="list-style-type: none"> • Total preservation of the existing nature & wildlife, palm trees, immigrant birds...etc. • Prevention of industrial air & water pollution in the soil water ponds, Edko lake & plantations. • Taking the most advantage of existing natural & man-made resources in developing the new settlements. <ul style="list-style-type: none"> • Preserving the desert nature & wildlife in the sand dunes area & by the shore & only introducing light activities into these areas (safaris, bird-watching,...etc) • Organizing international visiting programs during different seasons of bird's immigration. • Decreasing degrees of water & shore pollution <ul style="list-style-type: none"> • The site provides a satisfying area of land to introduce artificial & man-made investments without any harmful effect on nature. • The shore can easily be used in water sports & golfing.
<p><u>2) Recreational zones</u></p> <p><u>2-A) MAADIA FISHING PORT:</u></p> <ul style="list-style-type: none"> • Creating a zone of recreation for travelers, tourists & locals based upon observing local activities & industries. • A tourist center is recommended in this particular area, as it is considered the main access point to the area of development. • Improving & supporting the local activities & industries (fishing, yacht building,...etc.). 	<ul style="list-style-type: none"> • Preservation of the strong & unique local identity in the area. • The area is one of the richest spots for fish breeding in the Mediterranean. • Prevention of air & water pollution in Edko lake southwards, & improving the local human activities in the area.
<p><u>(2-B) EAST BREAKWATER PUBLIC RECREATIONAL PARK:</u></p> <ul style="list-style-type: none"> • Establishing a recreational park for the benefit of both tourists & locals, in the unique spot where the Nile pours in the Mediterranean. • Considering the park as a major recreational open area for locals, & a unique pole of attraction for tourists. • Establishing a marina for tourists yachts in the Nile & adjacent to the potential park (where the proposed tourist walkway terminates). 	<ul style="list-style-type: none"> • The site is of a very unique character, where the Nile pours into the Mediterranean. Many environmental programs can be hosted.

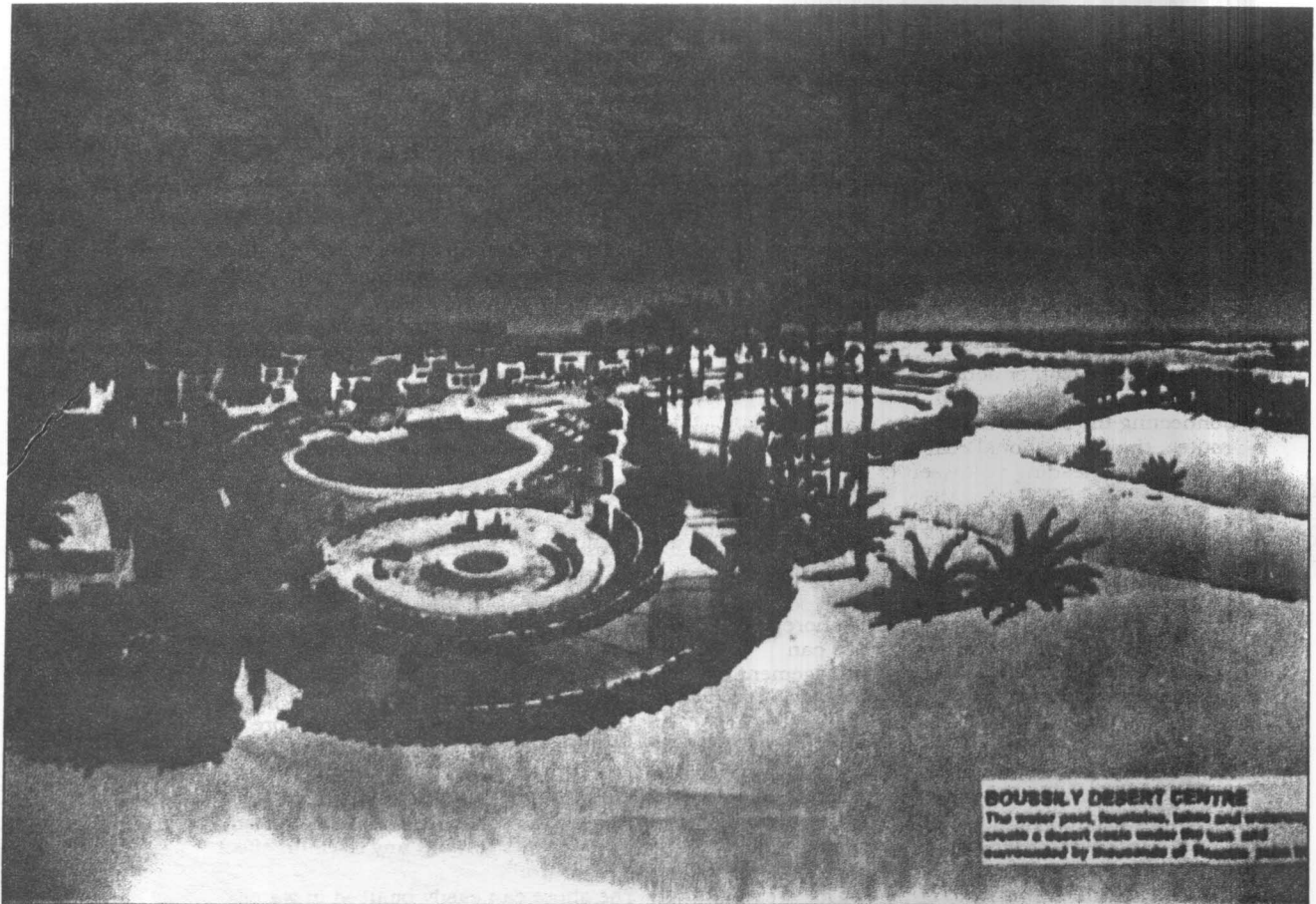


Fig 2. An oasis atmosphere can be achieved through careful utilization of nature, landscape and physical characteristics of proposed development (Source: Rossetta-Edlko tourist development planning project-tourist development authority)

The recommended urban design ideas of each resort is based upon a central piazza as a main gathering area which distributes to the main facilities & services, also to branched pedestrian alley ways that lead to smaller urban spaces distributing to the accommodation units. A main access scenic road (12m wide) is introduced into the site to connect it to the existing Rosetta-Alexandria local road & the international coastal highway (currently under construction). The proposed access road was designed as a scenic road via the natural sites & palm trees plantation. A main distributor local road is proposed northwards the site, which services proposed resorts and camping site and distributes to the day use cottages & sports areas.

3.3.3 Environmental protection and improvement

Another important issue was related to the scope of intervention and investment strategy. Tourist development is dependent on the region's natural, cultural and environmental resources. Therefore, a strategy that focuses only on development site will not be able to guarantee a sustainable tourist development. Nor will it be able to maintain the environmental resources that brought tourists in the first place. A more general scope should integrate the outcomes of such development into the communities around it to achieve an overall and well distributed regional economic growth. Investment opportunities were therefor organized in two groups; physical

and environmental investments (Table 2). Physical Investments is concerned with Establishing new tourist resorts, and recreational while environmental improvement program is concerned with preservation of the existing nature & wildlife: trees, immigrant birds. . Etc. and organizing tourist activities to enjoy such environmental assets. In such projects, financed by the community of developers, full respect must be paid to human resources and local labor, for these will be the ones who will provide aid and support to investors, authorities and-in the future-tourists.

4. Case study 2: montazah center-sharm EL-Sheikh

The second case study investigates an Eco-tourist development scheme in a different environment. In addition, the aims and agenda of the scheme patron, as a master developer, differ from the government agency who sponsored the planning scheme examined in the first case study. The Monatazah Co. For Tourism is a master developer responsible for providing infrastructure, services and landscaping of the 5 million square meter development site located on Ras-Nasrany gulf 20 kilometers East of Sharm El-Sheikh. The aim of the scheme discussed in this case study was to guide such investment and identify appropriate form of future development.

4.1 Analysis of previous Montazah-center planning concept

The analyzed scheme include the re-planning of the tourist center, updating an earlier planning concept that has been partly implemented, in order to integrate undeveloped land and to create a sustainable form of tourist development in the center as a whole [2]. Two main concerns were examined related to physical planning and landscape planning

4.1.1 Physical planning concerns

The detailed examination of the previous plan showed little awareness with the value of

the place and its resources. The site was divided to large plots, each allocated to individual developers mostly along the coast. Each plot or sub-development site is fully independent and is or will be occupied with a hotel or a resort and surround with large areas of an undefined space, fences. The clear disintegration of the development diminishes the opportunity to create a clear definition of space and an identifiable sense of community and liveliness. The overall services were to be provided by specialized sites such as a commercial center, a staff-housing site, and a utility service site. All of them are physically isolated of the rest of the development.

This particular basic land subdivision scheme was successful in the following

- A good & efficient circulation pattern provide good accessibility to development zones
- Sufficient provision of infrastructure and utilities.
- The attraction of first class tourist resort companies provide an asset for proposed plan

However, the scheme bear clear disadvantages to tourist potential of the site including

- Private Water front tourist development monopolize the beach line leaving very limited public beaches areas that are essential to back development.
- Enormous wastelands that are uncoded and did not associate with a short or long term role.
- Isolated mono-use center is not quite appropriate for a sustainable tourist development point of view
- Isolated landscaping large zones that are financial burden on the part of the master developer
- Isolated staff housing have a potential of environmental degradation and the creation of a ghetto environment
- Generally, there is a lack of integration of land uses parties leading to the failure of the center in creating a sense of resort community and identity.

4.1.2. Ecology and Landscape Planning Concerns

From an ecological point of view, waterline where water bodies with their aquatic environment meet the terrain environment of the dry land resembles an ecological edge or hinter zone. Such edges have an utmost importance for life cycles in both the environments. In fact it is the richest in life form production per area compared to neighboring environments.

In a dry arid area this becomes most apparent. Such ecological edges are also the most attracting for human activities under the names water line- beach...etc. In the case of El-Montazah Sharm El-Sheikh Tourist center and from an ecological point of view, the major concerns on developing the land would be :

- 1- Most of the natural edges are already developed leaving dry desert behind starting to loose identity because of near-by urbanization.
- 2- Natural water supply is very limited, almost non-existent.
- 3- Supplied water needed for development especially after use can be a polluting agent, besides that due to the large area of the site, enormous supplies will be needed for developing in the conventional urbanization manner.
- 4- Conflict between human needs and natural state is quite apparent because of the fast rate of growth in southern Sinai
- 5- An ecological "compensation" would be needed to undo or decrease the negative effects of urbanization.
- 6- Traditional manner of land use and landscaping carries with it the seeds of environmental disorder " e.g. traditional landscaping and plants species carries with it diseases and insects foreign to the local environment that soon wipes indigenous fauna and flora" besides the fact that such landscaping is very costly, concerning at least water, energy and human and physical resources.

4.2. An eco-tourism urban design concept

The main idea of the proposed planning concept is to concentrate physical tourist

development along a circular spine that symbolizes a river of space linked together with orchards of palm trees. The Space River starts from public beach and ended to another linking tourist development to the coast. As a mixed-use town center endowed with a variety of recreational, entertainment, and commercial places, it could complement the coast in attracting tourist development projects (hotels, motels, and apartment building). The dense and well-defined urban form of the circular spine contrast with the surrounding emptiness of the desert parks. Housing development was preferred to be located next to the main roads to save the cost of new infrastructure to provide a linear edge to the plan. A green belt of orchard palm trees provides a nice vista for them. Desert park zones are enhanced by groves of desert plantation and used for Bedouin villages, camel riding and as a natural reserve area

4.2.1 Space organization & visual structure

The spine of the linear center is a pedestrian pathway connecting intervals of nodal spaces where major tourist development activities are located, including five star hotels, theme parks, shopping centers & commercial areas. The bulk of the connecting urban form is shaped by a mixed use housing block typology and 3-4 star hotels. The green "rivers" of palm trees concentrated together provide a visual & seine linkage of these spaces. Perpendicular on this axis, entry spaces from pedestrian & vehicular can be easily identified & linked directly to nodal spaces.

The vehicular access ways provide direct & easy access to major tourist development component & to a public parks lots that serve the center as a whole. Pedestrian alleyways also link the center to surrounding desert parks & to the residential developments and other tourist developments Fig. 3.

A. Integrating architectural and landscape design;

The integration of architectural design and landscape design of open spaces can create a unique character and a strong sense of place [6]. The manipulation of land forming through

A. Integrating architectural and landscape design:

The integration of architectural design and landscape design of open spaces can create a unique character and a strong sense of place [6]. The manipulation of land forming through manmade intervention can be used to emphasize certain areas along the development spine. These are areas devoted to main buildings. This also is expected to create a picturesque skyline of the tourist development area. The spatial void of the desert park provide a unique foreground that enhance the character of the place especially as it is combined with the palm trees orchards of the spine.

B. Nodal spaces:

Nodal spaces are areas located in front of major tourist development sites. The space of the two pedestrian spines is widened and the recreational activities of the hotel take place. This provides recreational and exciting and memorable places that operate as intervals along the pedestrian spine. The proposed scheme provides a variety of styles. Each nodal space along the pedestrian esplanade is associated with a unique style to emphasis its identity and avoid monotony. This also increases the node's role in orientation

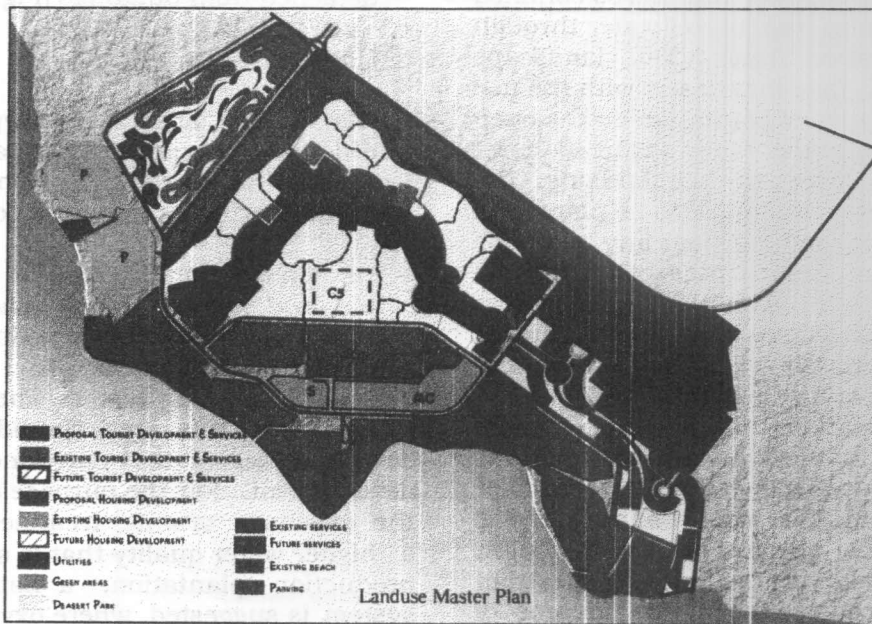


Fig 3. Montazah-sharm proposed land use plan (Source: Montazah-Sharm Re-planning project-1999-Montazah Co. for tourism).

and enables users to easily memorize the visual characters of the center. These innovative styles contrast with a more harmonious Middle Eastern style that is used in the housing blocks along side the pedestrian esplanade

C. Mixed Use Housing block Typology as a linkage urban form

The major building typology that is utilized is a mixed use-housing block. This rather large building symbolizing a traditional middle eastern settlement or piece of it includes studio housing for more permanent residents small flats, shops, diving centers, galleries, cafes, restaurants, and discotheques and night clubs. This mixed-use development type is located alongside the main spine to ensure a lively and active environment day and night

A. The Housing Belt

The residential plot subdivision surrounding the area from main roadside is in fact- from the economic and ecological point of view- an appropriate arrangement as it can with little cost and marketing effort subsidize the rest of the project especially that it overlooks a rich belt of desert fruit orchards and medical herbs plantations. Plants selected for this belt include date palm trees, olives and figs combined with protective belts of tamarix and desert shrubs. This belt of total area of 90 000 m² represents a tender environment neighboring housing areas among which light recreation for dwells can be located. The belt will be cultivated in a rather natural grove like manner with herbs confined within to maximize the use of water through slowing evaporation rates. The landscape would gradually fade into desert with the use of more desert types of plantation on the open edge while putting the more tendered care-needing types closer to the housing. The selected plants are suitable to be planted in the site's existing soil without any additions and will need minimum rates of water and maintenance. This would also be more suitable to endogenous fauna and flora of which natural growth will be encouraged and can form an attracting design aspect [7].

The drip irrigation that would be mostly used- provided that proper concealment of its parts will take place- will also help to minimize the consumption. The whole landscape will serve as a vista for users of the middle tourist development. Links in the form of pedestrian alleyways connecting the "two streams of greenery; the central spine of the tourist development site and the residential belt." This pathway will be made of natural local materials such as soft gravel and shaded on intervals with small groves of acacias native and characteristic to Sinai. Fig. 5.

B. Inner Spine

As for inner stream which include three interrelated landscaping concepts used for these stripes:

- Zone 1: Main stream winding and travelling between desert areas and sometimes

touching open dessert landscape with little protecting greenery so as it can protect users without closing the view.

- Zone 2: Areas for development where building under ecological consideration is permitted leaving open space plated with low water consumption plants. Landscape for such areas which mostly have a recreational character can also be as productive as possible, through the use of fruit trees of tolerant types. In open green areas, lawn is substituted with succulent or draught tolerant ground covers.
- Zone 3: Outer belts surrounding and at the same time interrelated with zone 1 and zone 2 being the outer belt are much thinner than housing belt and less detached from buildings (Fig. 6).

C. Golf Course

As for golf area a dry type of golf where traditional lawn is excluded and replaced by fived sand and gravel combined with desert trees and shrubs and ground covers.

4.2.3 An Integrative ecological recycling and natural energy scheme:

The previously described landscape concept is combined with an integrative ecological recycling system. The water used for planting all this area should be of treated sewage water of the surrounding residential development. For the purpose of cutting down the expenses of water treatment and to reach a higher water quality that is suitable for food production plantation, a natural treatment system is suggested, where oxygenation ponds built in green houses would be used, thus avoiding their side effects while enhancing water quality. The efficiency of the water treated in this area can be indicated by its storage in small ponds where fish is grown helping in supporting the local population living and working in the site while it functions as an instrument of testing water qualities.

Such a scheme is being utilized in several Eco-villages around the globe especially in arid areas such as southern California, Arizona, USA and Australia where ecological consideration and human needs for tourist

production plantation, a natural treatment system is suggested, where oxygenation ponds built in green houses would be used, thus avoiding their side effects while enhancing water quality. The efficiency of the water treated in this area can be indicated by its storage in small ponds where fish is grown helping in supporting the local population living and working in the site while it

functions as an instrument of testing water qualities.

Such a scheme is being utilized in several Eco-villages around the globe especially in arid areas such as southern California, Arizona, USA and Australia where ecological consideration and human needs for tourist and housing developments are very much the same as the resort city of Sharm El-Sheikh [8].

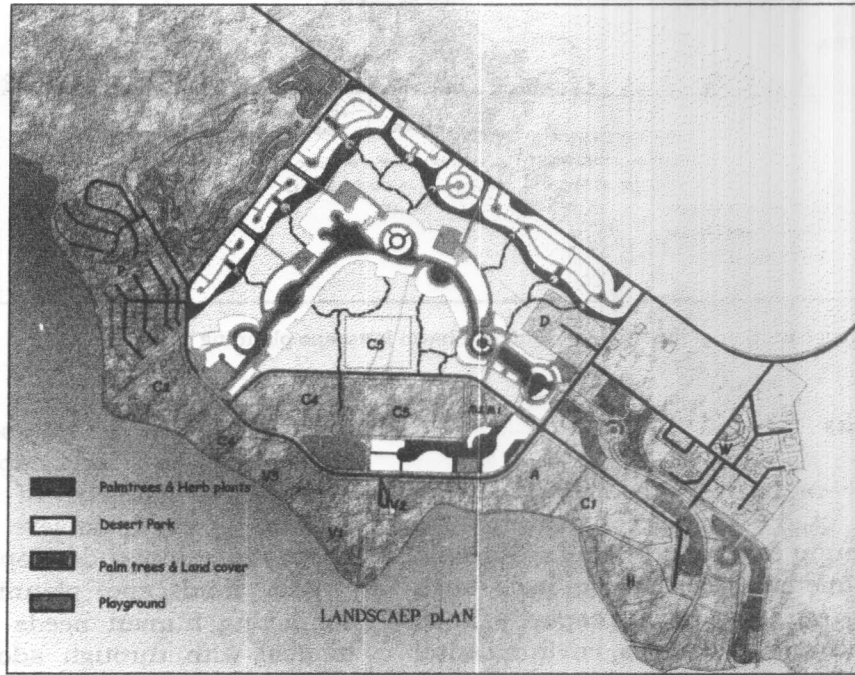


Fig. 4. Montazah-Sharm center proposed landscape master plan (Source: Montazah-Sharm Re-Planning project-1999 Mobntazah Co. for tourism)

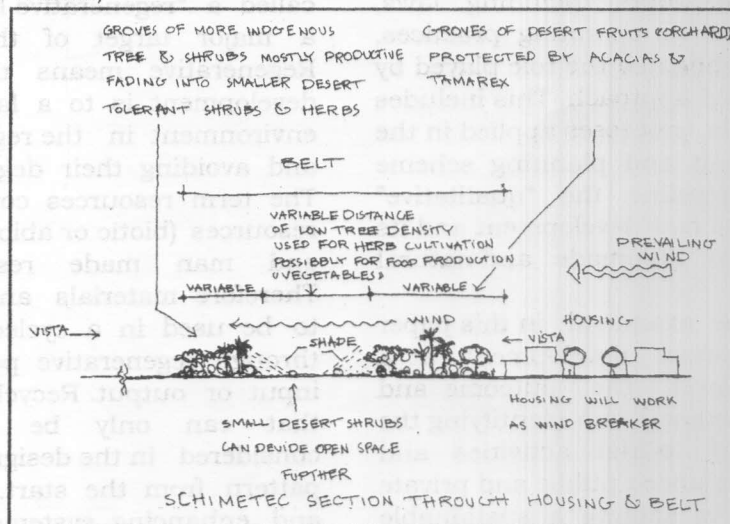


Fig 5. Landscape scheme section through housing plantation belt. Montazah-Sharm center landscape plane.

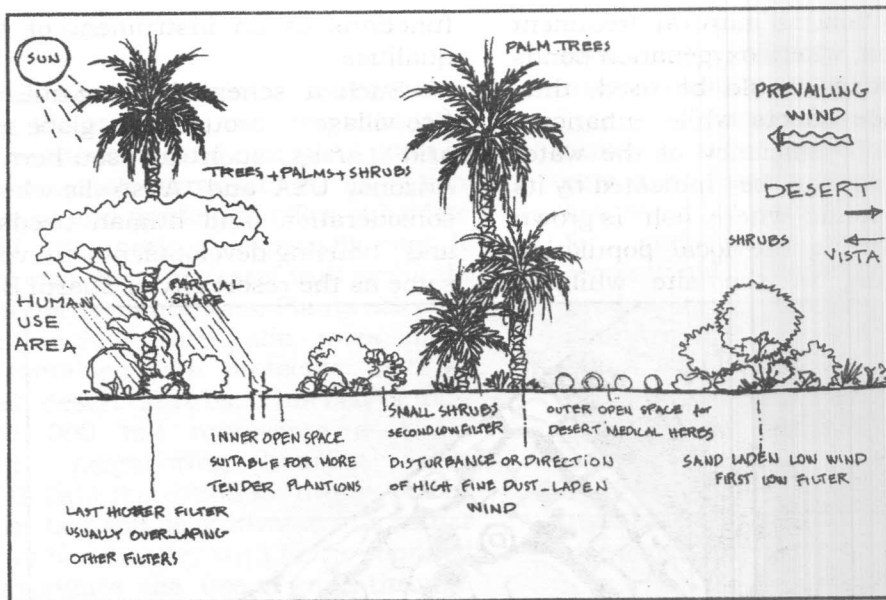


Fig 6. Typical scheme section of inner belts-Montaza Sharm landscape planning concept

5. Conclusions

A variety of factors contribute to the sustainability of tourism development in areas of environmental excellence. Some are related to the economic nature of tourism itself, such as natural resources carrying capacity, hotel capacity, infrastructure needs, environmental impacts, labor and destination image and others are related to the overall legal and administrative frameworks including laws, regulations, policies or operating practices. The paper also highlighted the role played by the "design-planning" approach. This includes the principles, tools, processes applied in the applied urban design and planning scheme which usually determine the "qualitative" characteristics of the new development and its relationship with the manmade and natural "host" environment.

The first scheme examined in this paper deals with Eco-tourism development at a general planning level. The outcome and products are more related with identifying the nature of potential tourist activities and organization of a balanced public and private investment plans to achieve a sustainable development. The second case, a grand but

typical urban design scale, the physical concept and landscape planning were essential component of the ability of the scheme to achieve environmentally appropriate tourist development.

All landscape planning concerns with conflicting human needs were made possible to deal with through adopting a *regenerative ecological policy* to inform a sustainable tourist development plan. The creation of what can be called a "regenerative human ecosystem" was a major target of the planning concept. Regenerative means that proposed tourist development is to a large extent helping the environment in the regeneration of resources and avoiding their degeneration or depletion. The term resources covers all items; natural resources (biotic or abiotic), human resources and man made resources and energy. Therefore materials and energy were planned to be used in a cycled manner in the site through regenerative policies with minimum input or output. Recycling is a major concern that can only be adopted properly if considered in the design concept and landuse pattern from the start. Accordingly creating and enhancing systems that is human but acts like natural ones were the prime

ecological concept of the planning scheme. This was applied on different levels of concern and through the different disciplines to creating a pleasant environment to both man and nature.

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