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Dedication

In memory of my paternal grandfather

Here I am following your path and realizing our dream.....Becoming an Architect.

May you rest in the lord's paradise "Pa"

To my loving grandmotherfor her support and all her prayers for me.

To my dear parents.....for all their sacrifices, their love, their tenderness, their support, and their prayers throughout my studies.

To my dears, Mohamed El Saleh Racim, Bibia and Maya.....for their constant encouragement and moral support.

To Baka.....for the support, the guidance, and the encouragements during these past five years.

To Saraia and Rihab.....for going through this together.

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I would like to sincerely thank the jury members:

- Mr. **Ayoub BOUDOUKHA**, for agreeing to review this work.
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General Introduction

Introduction:

Over centuries, the oasis by its strong ecosystem has constituted a perfect survival area and healthy microclimate inside the desert territories.

Nowadays, the oasis and the Saharan cities has several transformations where many settlements are entirely abandoned, caused by environmental factors, human activities as well as socio-economic issues.

Accordingly, summer circumstances seem to be more difficult and have significant consequences for energy efficiency as well as negative effects on the ecological balance.

Among the new approaches worldwide, of the local development. We can find numerous strategies and approaches such as the ecological approach.

Therefore, the Saharan regions represent a large part of the world and display numerous challenges in local life, particularly in the oases that run across the arid lands, where the Ziban oases in the Algerian Sahara take a part of our current study.

The oasis constitutes a unique ecosystem, rich in biotic components, favored for a long time by rigorous management of natural resources.

i. Problematic:

In the Saharan areas, the oasis ecosystem has played a key role in the creation of a well-being environment and takes advantage of water and the shading areas, the oasis system works as a real ecosystem in the biophysical sense and at the same time as a very diverse socio-economic and cultural organization throughout the Sahara Ziban region.

Tourism presents a key of economics life which should be not neglected, as it allows a cultural development of the individual, and gives the importance of its socio-economic, cultural, and political impacts.

Tourist resorts are a place used for relaxation, recreation and attracting visitors for vacations. One of the essential characteristics of a tourist resort is the unit of place, where all the components must be grouped within the same land.

Although, tourism activities have considerable negative effects on ecosystems, natural resources, and biodiversity. Following this situation, the Ecotourism has become a requirement for greater environmental preservation.

Ecotourism generally describes all forms of alternative tourism that respect, preserve and sustainably enhance the heritage resources (natural, cultural, and social) of a territory for the attention of tourists, to minimize the negative impacts they could generate.

ii. Study Question:

- What ecological- strategies should be provided to design a tourist projects that respects the oasis components?

iii. Study Objectives:

The objective of our study is to establish a dialogue between tourism and ecology through the oasis's lands where the form of a pleasant welcoming resort without having the slightest negative influence on environmental respect, by:

- Definition of the real meaning of Eco-tourism and its relationships with oases lands.
- Elaboration of design's scale for the tourism projects following an ecological approach.
- Proposition of a program for a Tourist Resort project that respects the oasis components.

iv. Study Methodology:

In order to achieve the objectives of our research, we adopted a methodology based on two approaches:

- **Theoretical Approach:** A bibliographical research based on books, works, theses and websites in order to identify the various concepts related to the subject and the project.
- **Analytical Approach:** Based on different case studies of the project, the concept and the site, in order to set the project's program and the concept strategies that we will apply in our project.

v. Study Structure:

In order to understand the problematic subject and achieve the precise aims on which the topic of this study is based, we arranged and structured it into a general introduction and a three main chapters:

We present in the general introduction the problematic, which we follow by the study question, to specify the objectives that we seek to achieve, and the methodology used.

The first chapter of the current study is divided into two parts: one in which we explain everything related to the theoretical concepts and definitions of the subject, and the other in which we used to study the project's concepts, specifics, and regular standards.

The second chapter covers various case studies, project examples, concept strategies used in projects, and the site, as well as the proposed program for the Tourist Resort.

In chapter three, we define the several conceptual processes of our design project based on concepts and objectives.

vi. Study Framework:

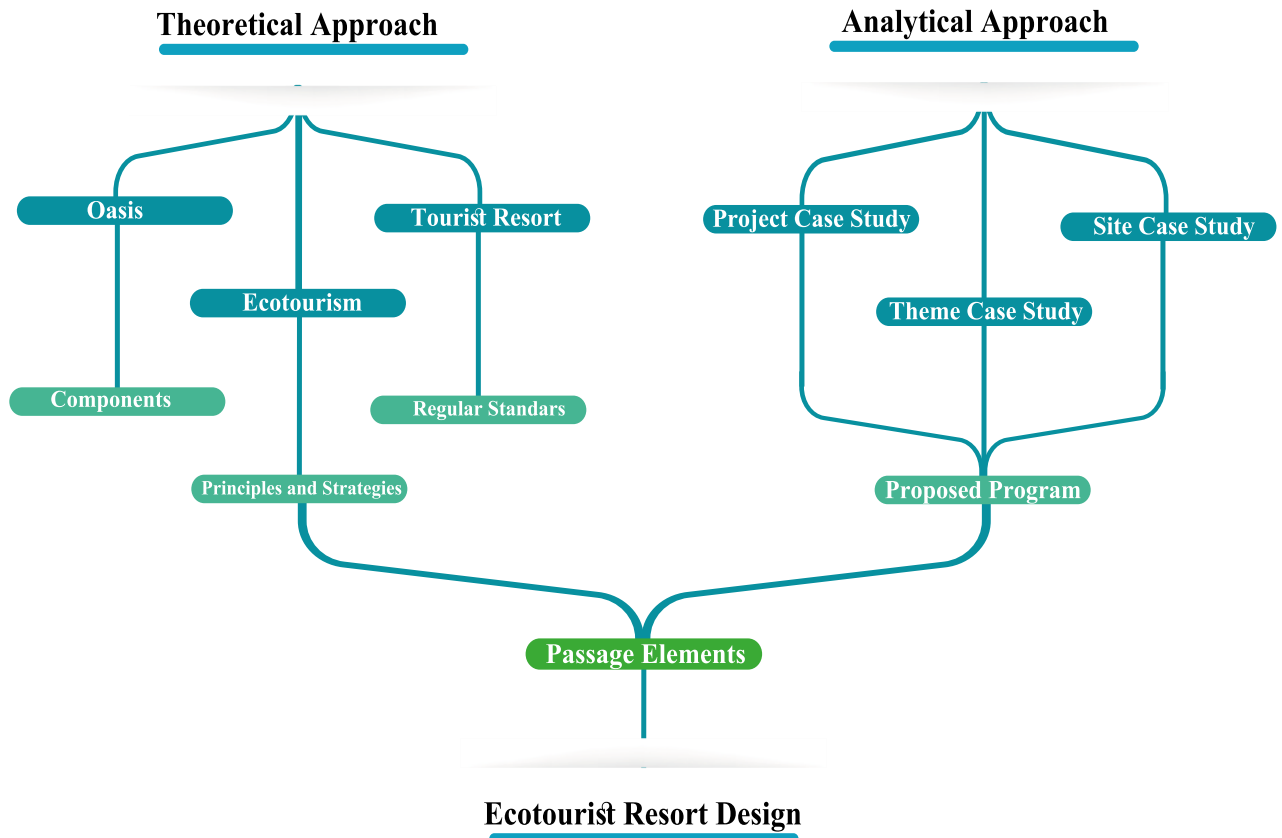


Diagram N° 1: Ecotourist Resort Conception Study Framework

Source: Author, 2021.

Chapter One: Theoretical Approach

Introduction

The first chapter covers the theoretical aspects of our research, in which we will attempt to define the basic concepts present in the study's subject so that we could establish a theoretical basis that we could use later in the design process.

The first concept is related to the **Oasis**, where we are going to focus first on the various types of it, depending on multiple features, and then on its environmental impacts, which can help us in the second concept of the study **Ecotourism**, we will first introduce it and give a brief historical review of it, then we will mention its important principles and characteristics.

Finally, we are going to highlight the project, its most significant facilities, and sectors, as well as the most critical urban and architectural requirements, where these theoretical studies should be applied in our project.

I. Oasis:

I.1 Etymological Aspect:

According to Capot. R (1953), the term 'Oasis' is a Greek word of Egyptian origin (-484 B.C -425 B.C). It was used as a proper name, then Strabo (16th century historian and geographer), used it as a common name when comparing sets oasis like islands lost in the middle of the ocean.

Bernard. A (1939) argues that the word 'Oah' means 'place inhabited'. Its equivalent in Arabic is 'Ouaha' whose plural is 'Ouahat' which means 'Oasis'.

I.2 Definition:

According to Cambridge Dictionary, Oasis is a place in a desert where there is water and therefore plants and trees and sometimes a village or town.

Lévy. J and Lussault. M (2003) consider the Oasis as "an inhabited place. Isolated in an arid environment or more generally hostile location, linked to the possibility of exploiting a resource, particularly water, for the practice of irrigated agriculture".

While Côte. M (1998) defines the Oasis as an agro-system whose foundations are not agricultural.

The oasis is an artificial bioclimatic environment developed from a pre-existing natural site that breaks with the surrounding aridity by transforming the climatic atmosphere at ground level and in the lower atmosphere (M. Mainguet, 2003)

Oases have been defined and characterized according to different approaches:

- a. Geographically: the oasis is defined as an island of survival (or prosperity) in an arid environment.
- b. On the bioclimatic level: the oasis is a micro-climate created by man in the middle arid and induced by the layering of crops.



Figure N° 1: Siwa Oasis, Egypte.

Source: www.pinterest.com

- c. At the agronomic level: it is an intensified agro-system established, in an isolated space located in a desert environment. (L. BOUDJELLAL, 2009)

I.3 The Geographic Distribution of Oases:

I.3.1 Around the World:

The oases are found mostly in North Africa and the Middle East, and more marginally in Asia, Australia, and America. Their distribution concerns arid zones, which represent nearly third of the planet's land.

However, these are underpopulated regions (1 to 2% of the world population) but with a high urban density (300 to 1000 inhabitants / km²).

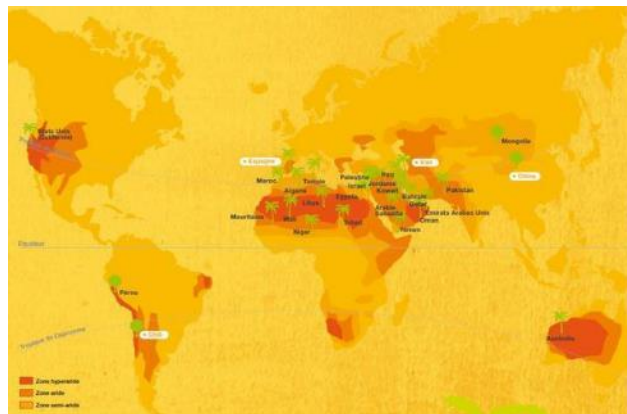


Figure N° 2: The distribution of oases lands around the world.

Source: www.raddo.org

I.3.2 In Algeria:

Oases in Algeria represent the largest area of North Africa, approximately 93,000 hectares. They are mainly divided between two regions:

- a. To the northeast with the oases of Zibans (Biskra, Province), Oued Righ, El Oued and Ouargla.
- b. To the southwest with the oases of M'zab (Ghardaia), Touat (Bechar) and Gourara (Adrar). (L. Zell and D. Smadhi, 2006)

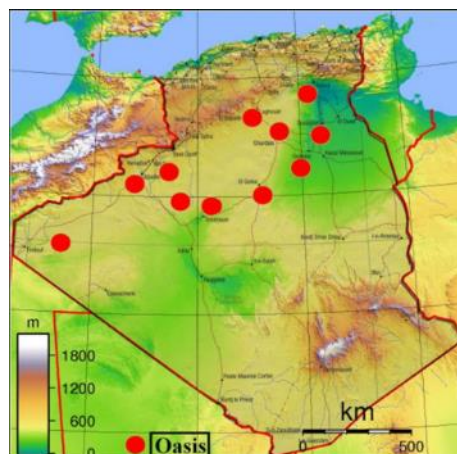


Figure N° 3: The distribution of oases lands in Algeria.

Source: FARHI. BE, 2015

I.4 The Main Components of Oases:

The Oasis has often been associated in the different definitions of the presence of water, the cultivation of dates and to the microclimate they generate. (**Dictionary of Anthropology, 1983**).

Each Saharan region's oasis ecology has a unique and distinct configuration. Despite their distinctions, these oasis ecosystems are all based around three basic elements: water, the agricultural environment, and the constructed environment.

I.4.1 Water:

Water is the essential factor, which is the origin of the oasis concept. In arid oasis zones, surface water is uncertain and rare, so the groundwater is the main water resource. For ages, oasis inhabitants have employed strategies for obtaining groundwater to support the residential needs of the Ksar people as well as garden irrigation, and the most common strategy is Foggara.

Foggaras: A Hydraulic Heritage

Traditional hydraulic system consisting of a gently sloping gallery draining groundwater by gravity to the surface of the soil to feed the kser and irrigate the palm grove.

The foggara ends with a water accumulation basin from where exists the main seguias, these seguias are terminated by a secondary network, which distributes the water to the plots. The flow of the source varies according to the season and the rainfall. (B. Remini, 2018)

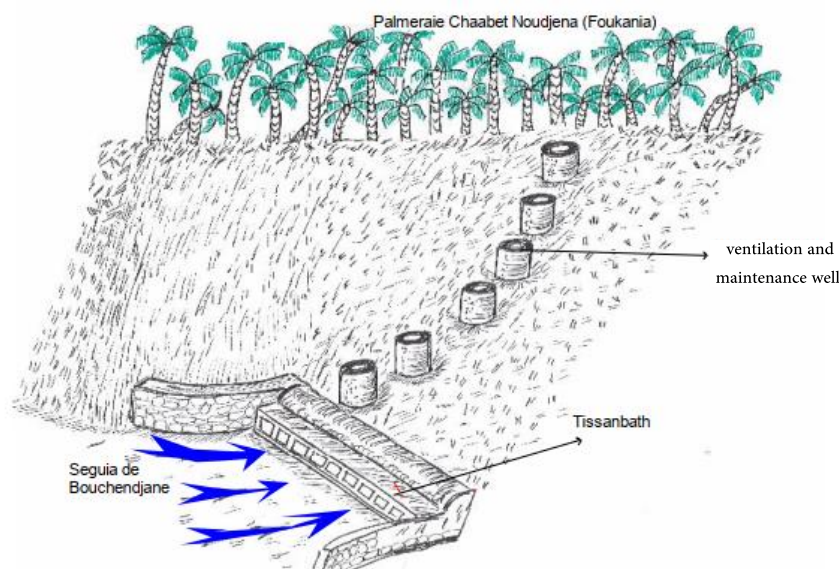


Figure N° 4: Synoptic Diagram of the Foggaras network for the Irrigation of the Palm Grove of Ghardaïa.

Source: B. Remini, 2018.

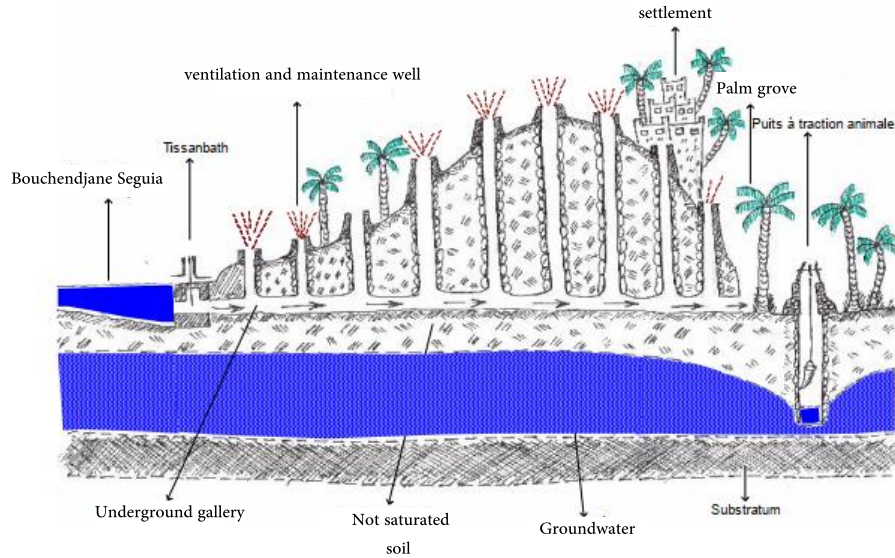


Figure N° 5: Diagram of a Longitudinal Section of an Irrigation Foggara in the Eastern Palm Grove of Ghardaïa
Source: B. Remini,2018.

I.4.2 Cultivated Environment:

It is an integrated agriculture which is carried out with the superposition (in its typical form) of two or three layers.

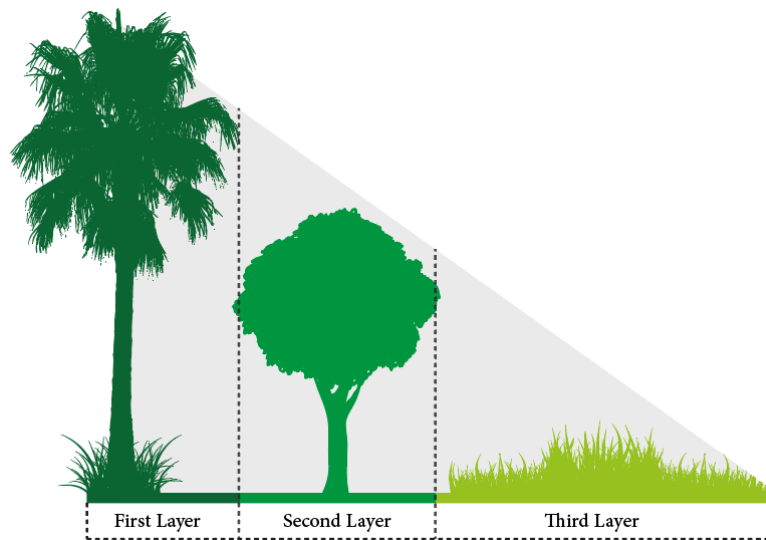


Figure N° 6: The layers of Cultivated Environment in Oases.
Source: Author,2021.

I.4.2.1 Palm Grove:

The palm grove is the frame of the oasis ecosystem (S. Bouzaher, 2015).

The first layer, the highest, is formed by date palms, it makes most of the landscape, with a very dense vegetation which can be established in three frames: square, in line, staggered.

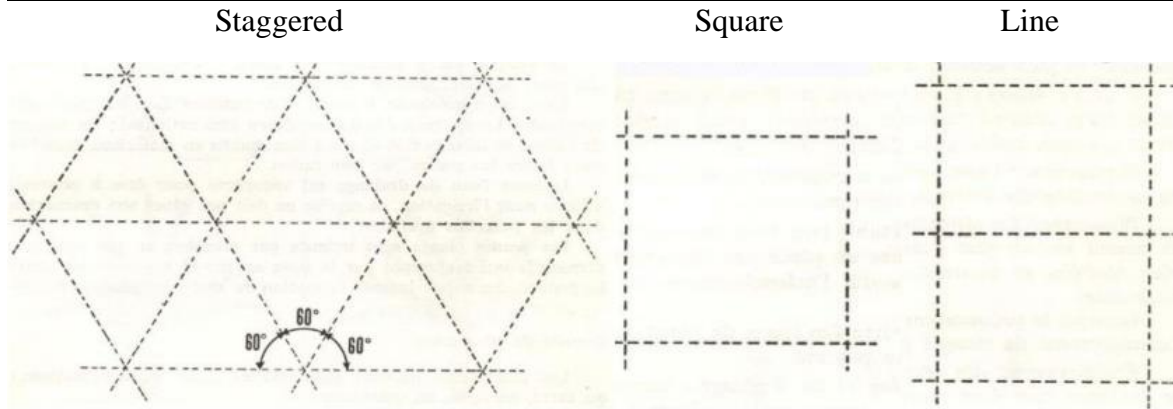


Figure N° 7: Palm Tree Implantation Grid.

Source: P. Munier, 1973.

I.4.2.2 Fruit Trees:

An intermediate layer includes diversified fruit trees (orange, banana, pomegranate, apple, etc.).

I.4.2.3 Annual Cultivation:

The third layer, in the shade, of low plants (market gardening, fodder, cereals).

I.4.3 Built Environment:

The constructions in the desert lands reveal the adaptation of human to the surrounding environment, in the Sahara for example, the traditional settlements meet the climatic requirements through ingenious construction methods and reveal models of vernacular habitats in several architectural forms.

I.4.3.1 Built Environment patterns:

- a. The Medina:** Which was built over centuries, as a space for social activities and a space for the urban construction.
- b. The Ksar:** Is a village surrounded by walls with a few watchtowers at different points and one or more monumental entrances, in addition to houses, there is always a mosque in the center of the village, as well as a meeting space and Souk.
- c. The Dechra:** It represents the countryside aspect of dwellings in the Algerian desert. Using the same conceptual, functional and technical principles through the precedent oases settlements, they are a true agro-system.

(S. Bouzaher, 2015).

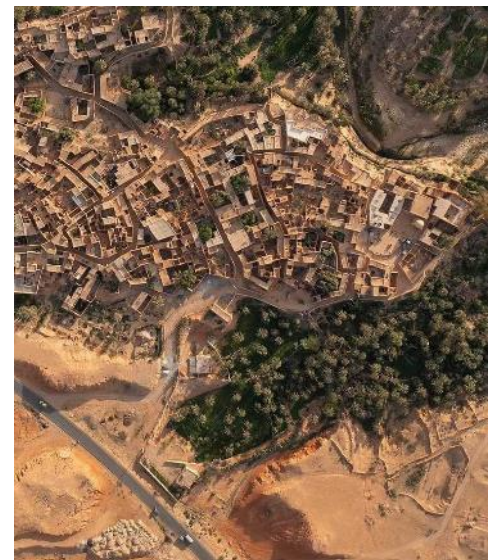


Figure N° 8: Dechra Al Hamra, Al Kantara

Source: B. Belahmer, 2021.

I.4.3.2 Position of the built environment in relationship to the palm grove:

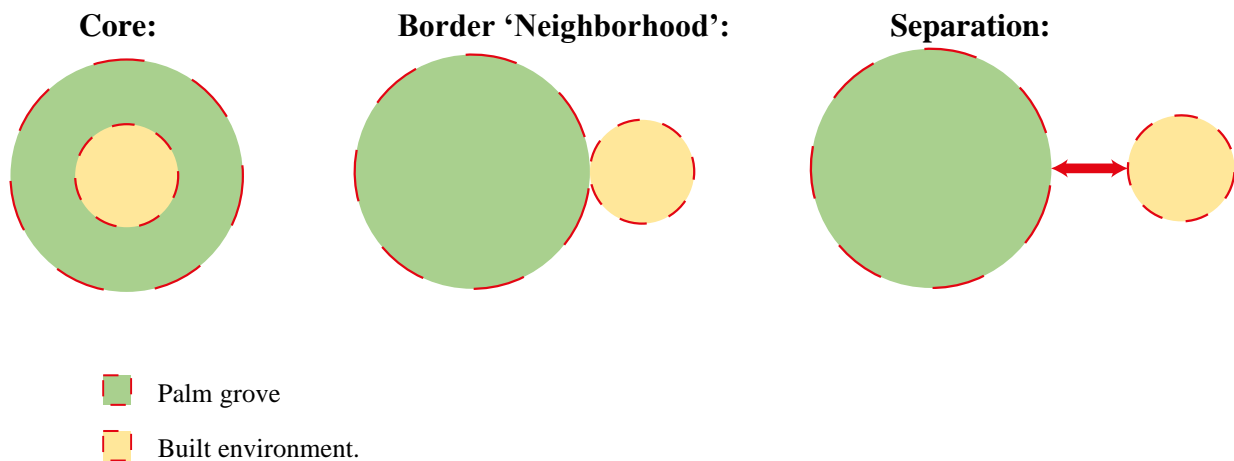


Figure N° 9: Position of the Built Environment in Relationship to the Palm Grove.

Source: Author, 2021. (L. BOUDJELLAL, 2009)

I.5 Oases Classification:

I.5.1 According to Typology:

a. Oasis of Rivers:

Oasis on the edge of the river, on both banks. A great know-how in hydraulic planning to manage rivers and floods. (P. Munier, 1973)

b. Oasis of Dunes:

Oasis in the large dune formations of Sahara. Type of oasis that can plant palm trees between spaces dunes without changing the topography of the land. The palm trees are irrigated at from traditional wells. (P. Munier, 1973)

c. Oasis of Mountains:

Oasis on the edge of Saharan and mountainous space, in deep valleys. the water is generally permanent. (P. Munier, 1973)

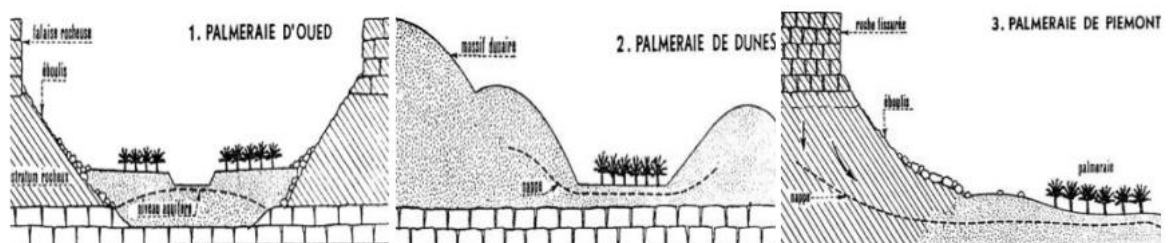


Figure N° 10: Classification of Oasis according to Typology.

(From the left to the right: a) Oasis of rivers, b) Oasis of dunes, c) Oasis of mountains)

Source: P. Munier, 1973.

I.5.2 According to Site Morphology:

a. The Oases in the Shape of a bowl or alveoli:

It is in the sandy areas of the desert where no water point is available without human effort. We simply dug the sand in order to approach the level of the water table. (C. Cournoyer 2004)



Figure N° 11: Mini Oasis, El Oued

Source: Godart, 1954.

b. The Oases in Depressions:

In the center of the less regular topography of the mountainous regions, man chooses a depression from which water can be pumped and brought back by gravity thanks to the foggara systems. These irrigation systems make it possible to circulate the water inside the oases by following the paths of the irrigation canals designed by man. (C. Cournoyer 2004)



Figure N° 12: Tiffoultoute Kasbbah

Source: Bernard Joliat, 1970.

c. The Oases Next to a Water Source:

This form of oasis benefits both from the shape of the land and the availability of a seasonal water source creating alluvial zones perfect for crops. (C. Cournoyer 2004)

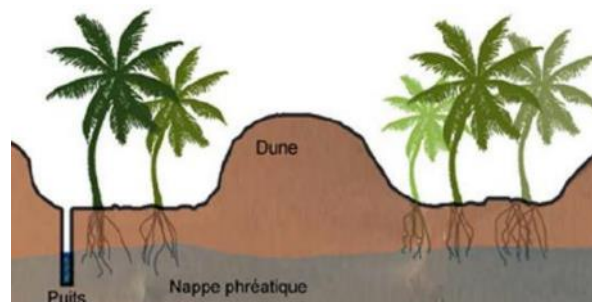


Figure N° 13: Dades Valley.

Source: www.maion.com.

I.6 Environmental Benefits of Oases:

The oasis is a distinctly different area from the surrounding space, and the change in surface properties is accompanied by a change in the properties of the lower atmosphere in contact with the oasis. Therefore, there is a local modification of the surrounding climate which is the most often hot and dry (with high thermal amplitudes), due to strong solar radiation and the scarcity of rainfall, and wind speed.

I.6.1 The Impact of Vegetation in Solar Control:

The date palm is used in desert areas as a parasol to protect plant species below it from atmospheric aggressions such as sunlight, and to create favorable conditions for their life.

The presence of dense vegetation forming several levels and intercepting any ray of light, as is the case in the traditional oasis. The solar energy that reaches the ground will depend on the leaf area index (LAI); the calculation of the total area of the leaves of the plant over the area of soil covered by this plant. (L. Boudjellal, 2009)

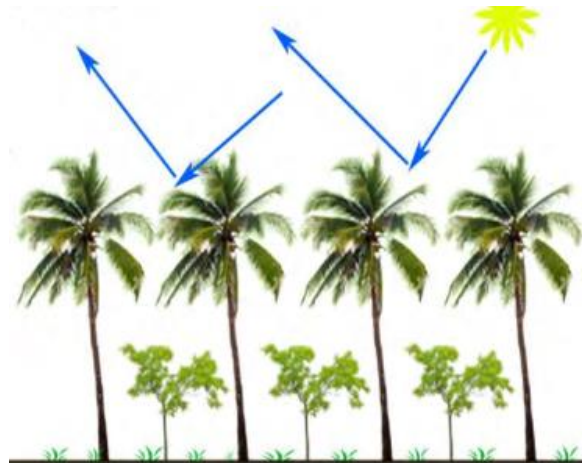


Figure N° 14: Impact of Vegetation in Solar Control.

Source: L. Boudjellal, 2009

I.6.2 Impact of Vegetation on Wind Control:

Wind has a direct effect on air temperature and humidity and therefore human thermal comfort, vegetation is an essential aspect of wind management because it provides an orientation impediment, diversion, and infiltration, as well as a variety of options based on its height, width, and density.

In hot and dry climates, green belts are critical to increase convection cooling and increase evaporation, they must be installed perpendicular to the dominant direction of the unwanted wind for them to be effective and they can direct the wind upwards or on the sides.

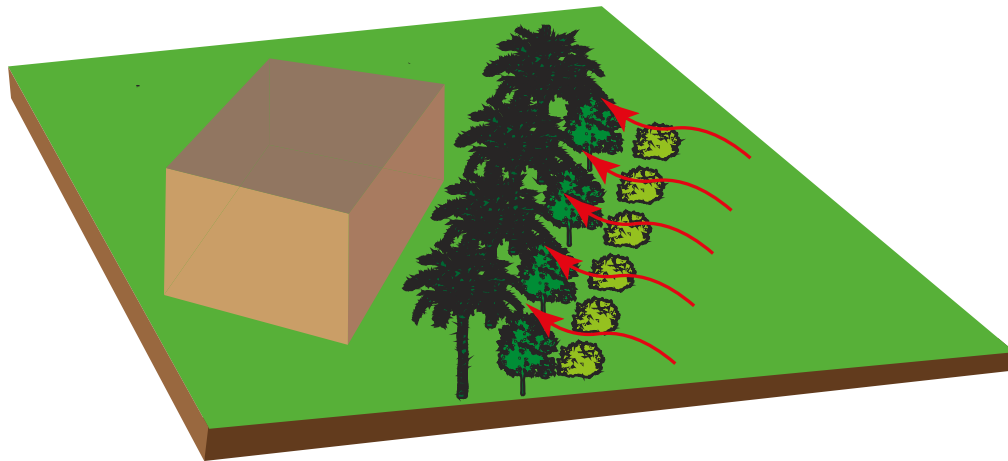


Figure N° 15: Green Belts Impact on Wind.

Source: Author,2021.

I.6.3 The Impact of Vegetation on Humidity and Temperature:

Vegetation works as an air conditioner; it absorbs water existing in the soil and releases it into the atmosphere and therefore the air in contact with it cools. A tree evaporates about 100 gallons in a sunny summer day and consumes 660,000 British thermal units of energy and gives an exterior cooling effect equal to cooling produced by five air conditioners each with a capacity of 10,000 units. (Moffat and Schiler, 1981).

I.6.4 Oasis Effect:

We can resume all the precedent environmental benefits in one element called ‘The Oasis Effect’.

Microclimates created by wetlands surrounded by desert or arid regions. It is also defined as a change in micro climatological conditions in the green sector compared to another without vegetation, this change is manifested by lower temperatures and a higher relative humidity rate. (L. Boudjellal, 2009)

So, it's a green sector with high humidity rate and therefore cooler than its environment due to the process of evapotranspiration, in addition to the vegetation shade that prevents direct radiation from reaching the ground surface and heating it.

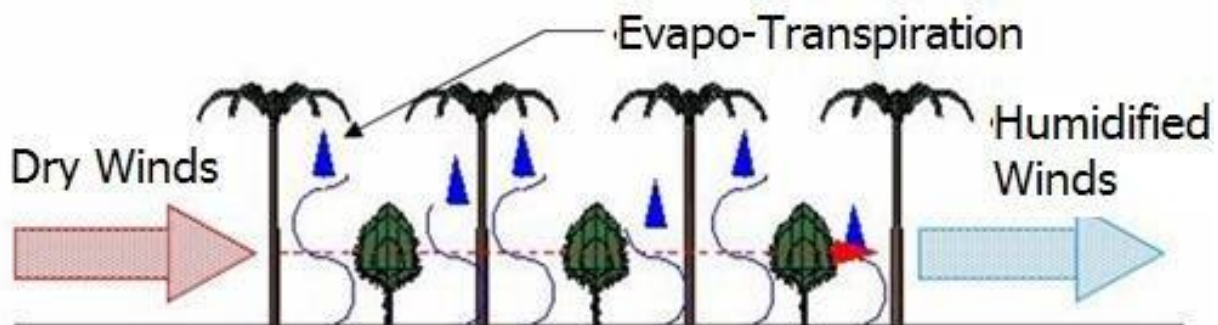


Figure N° 16: The process of moisturizing dry winds by the oasis effect phenomenon.

Source: A. Ahriz, 2003.

II. Ecotourism:

II.1 Tourism:

Tourism is an activity which cuts across conventional sectors in the economy. It requires inputs of an economic, social, cultural and environmental nature. In this sense it is often described as being multi-faceted.

II.1.1 Definition:

The word tourist was used in 1772 and tourism in 1811. It is formed from the word tour, which is derived from Old English turian, from Old French torner, from Latin tornare; 'to turn on a lathe,' which is itself from Ancient Greek tornos (Griffiths, Ralph).

In 1941, Hunziker and Kraft defined tourism as 'the sum of the phenomena and relationships arising from the travel and stay of non-residents, so far as they do not lead to permanent residence and are not connected with any earning activity'.

In 1976, the Tourism Society of England's definition was: "Tourism is the temporary, short-term movement of people to destinations outside the places where they normally live and work and their activities during the stay at each destination. It includes movements for all purposes."

In 1981, the International Association of Scientific Experts in Tourism defined tourism in terms of activities chosen and undertaken outside the home.

For the World Tourism Organization (UNWTO), tourism includes the activities carried out by people during their travels and stays in places outside their usual environment for a consecutive period not exceeding one year, for leisure, business and other purposes.

The Cambridge dictionary defines tourism as the business of providing services such as transport, places to stay, or entertainment for people who are on holiday.

II.1.2 Tourist:

"Someone who visits a place for pleasure and interest, usually while on holiday" Cambridge Dictionary.

"The tourist is a person who travels to and stays in a place outside his usual environment for at least one night but less than a year is in the main motivation of the trip is not remunerated inside the visited place" The World Tourism Organization (UNWTO).

II.1.3 Historical Development of Tourism:

Tourism has a remarkable evolution because it is closely linked to, technological progress and socio-economic development of the different countries in the world.

During ancient civilization when these three conditions are met, gave trips for pleasure: safety, ease of communication and a wealthy class.

Travel began in the pre-historic times, but tourism is a recent phenomenon after industrial period. The stages of travel development are:

II.1.3.1 Pre-Historic Period Travel:

Travel began from early man from 2 million to 20 thousand years ago. Homo erectus traveled in search of food, escape enemies, expand territory, search for warmth etc.

The characteristics of travel in this time is that it involved few participants that were not organized, involved explorers and was not meant for leisure.

II.1.3.2 Ancient Time Travel:

Travel was confined around Europe, Middle East, N. America and North Africa. During the 3rd century BC, the Greek traveled to visit the sites of healing gorge and their motive was to engage in religious festivals.

Tourism could have started 3000 years ago when the ancient pyramids were developed by Egyptians. Egyptians had many religious festivals and built museums, pyramids, hard buildings which visitors came and saw.

The Greek also enjoyed the festival by 5th B.C, Athens town was very popular for music, dance and entertainment and magic art.

In the 8th century B.C money was developed by Sumerians and people could use it for trade; this promoted travelers.

People started visiting Britain after the development of the British Sea Birth, which was accommodation facility with medicinal value to cure diseases.

II.1.3.3 Middle Ages:

During this time there was the collapse of the Roman Empire and there was great insecurity in the world due to fear. People traveled to religious centers in order to appease God. Jerusalem and Mecca became popular destinations. In Rome there was establishment of hotel and guidebooks used by tourists.

Main motivation for travel was religion. Hospitality facilities were established to cater for accommodation. This was called charitable offer.

II.1.3.4 Renaissance Period Tourism:

This time was characterized by great invention of art and more importantly architecture, better styles of hotel construction were innovated, and Hotels became tourism attractions. Hotels were concentrated close to each other, resulted to growth of early towns as a multiply effect.

II.1.3.5 Industrial Period Tourism:

Industrial cities which created large urbanization, need for labor, rural urban migration, and growth of middle-class citizens employed in industries, and more leisure time as a result of paid leaves as well as the demand for recreation.

Industrialization contributed invention of technology like railways, steamships and automobiles which made transport easier.

II.1.3.6 Modern Tourism:

Today tourism is an activity involving many participants, more educated, richer markets and it is growing at faster rate. It is today regarded as an industry due to its contributions to socio-economic welfare of citizens in form of direct and indirect employment, revenue to government, infrastructural development, etc.

Today tourism involves leisure. It is more organized due to many operations like principals, tour agencies, ground operators. (www.worldtourisminformation.com)

II.1.4 Types of Tourism:

There are different types of tourism in the world as well as different means of classifying them, Tourism can be defined according to:

II.1.4.1 Motivation:

- a. Leisure Tourism:** Any leisure activity practiced by tourists during their stay in tourist sites and tourist establishments such as leisure and amusement parks, mountainous sites and cultural and sports buildings.
- b. Business Tourism:** It refers to travel for professional purposes. It combines the classic components of tourism (transport, accommodation, catering) with an economic activity for the company. Business tourism includes four types of activities:
 - Corporate congresses and conventions.
 - Fairs and exhibitions.
 - Meetings, seminars and business meetings.
 - Individual business trips.
- c. Cultural Tourism:** It is a form of tourism centered on culture, the cultural environment (including the landscapes of the destination), values and lifestyles, local heritage, visual and performing arts, industries, traditions and recreational resources of the host community.
- d. Religious Tourism:** Is a type of tourism with two main subtypes: pilgrimage, meaning travel for religious or spiritual purposes, and the viewing of religious monuments and artefacts, a branch of sightseeing.
- e. Health Tourism:** The goal of medical tourism is to provide natural treatment at a lower cost in a country other than the one in which they reside or to seek treatment abroad and that this type of tourism cannot be treacherous at home. treatment in an environment equipped with relaxation and leisure care facilities.

II.1.4.2 Destination:

- a. Seaside Tourism:** It is a seaside vacation tourism. It is the most widespread form of tourism in the world. The coast, the beach, the sea and the sun are undeniable attractions for tourists. Moreover, seaside tourism is the first form of tourism to appear.
- b. Mountain Tourism:** There are two types of tourist frequentation in contrasting characteristics: one linked to winter sports which concerns a small population, over a limited period and an area developed for skiing. The other, mainly summer, concerns the entire mountain territory, in particular protected areas and attracts a wider audience for hikes or campsites.
- c. Urban Tourism:** It is one of the oldest forms of tourist activity Urban tourism now appears to be a real challenge for cities, by producing rewarding images. However, the city is a complex destination, difficult to understand, because it is multifaceted.
- d. Rural Tourism:** It is a diffuse type of accommodation for populations hosted in rural areas. It appeared in the 1970s in reaction to the construction of large tourist concentrations.
- e. Saharan Tourism:** It is any touristic activity in a Saharan environment built on the exploitation of the different potential natural, historical and cultural potentialities is accompanied by leisure and relaxation activities and specific discovery in this environment.

- f. Oasis Tourism:** The touristic potential of the oases of the South is considerable: landscape and magnificent panorama of the oases, city built in adobe under the traditional glass product of specific territories, local gastronomy quality of hospitality.

II.1.5 Tourist Facilities:

II.1.5.1 Seaside resort:

Located by the sea and has accommodation facilities and various leisure and entertainment services.



Figure N° 17: Miami Beach Resort, USA.

Source: www.nikkibeach.com.

II.1.5.2 Winter Resort:

Generally located at the top of the mountains allowing accommodation offering good living conditions.



Figure N° 18: Breckenridge Ski Resort, Colorado.

Source: www.breckenridge.com

II.1.5.3 Thermal Resort:

Located near thermal springs offering medical services as well as relaxation services.



Figure N° 19: Rixos Eskişehir Spa and Thermal Resort, Turkey.

Source: <https://www.archello.com>

II.1.5.4 Motel:

Is a concept of tourist hotel accommodation, it is initially a hotel comprising a single building with rooms on the ground floor in each door facing a parking lot.



Figure N° 20:Lincon Motel, Los Angles, USA

Source: www.booking.com

II.1.5.5 Camping:

Is an individual activity practiced in tents, it is possible to practice it in the forest or on the coast.



Figure N° 21: Camping tent. Australia

Source: www.decathlon.fr

II.1.5.6 Hotel:

Is an establishment offering a paying tourist accommodation service in a hotel room or suite, generally for short periods.



Figure N° 22:Marriot Hotel, Constantine, Algeria.

Source: www.trivago.com.

II.1.5.7 Tourist complex:

Set of hotel facilities and leisure facilities arranged in one place.



Figure N° 23: The Sands at Grace Bay, Turkey.

Source: ww.thesandstc.com

II.1.5.8 Tourist Village:

Is a holiday village where the visitors stay in villas. There is a central area with shops, entertainment, and other amenities.



Figure N° 24: Tahanouat Tourist Village, Morocco.

Source: www.trapadvisor.com.

II.1.6 Tourism Impacts:

Tourist destinations have both positive and negative effects as a result of Tourism. Economic, Socio-cultural, and Environmental factors are the conventional dimensions of tourist impacts.

Table N° 1: Tourism Impacts

Source: UNEP, 2006

Types of impacts / Nature of impacts	Positive impacts	Negative impacts
Environmental/ Ecological	<p>Creation of the possibilities of maintaining the existing heritage.</p> <p>Creation of a pleasant environment.</p> <p>Develop reception structures.</p> <p>Raising public awareness of the Environment.</p>	<p>Overexploitation of natural resources.</p> <p>The increase of pollution.</p> <p>The degradation of historic sites.</p> <p>The denaturation of the landscape due to the construction of tourist facilities.</p> <p>The elimination of valuable flora and fauna from the direct action of the occupation of space by tourist facilities.</p>
Socio-Demographic	<p>Job creation.</p> <p>Promote more dynamic attitudes and a feeling of well-being for individuals following trips and exchanges made with local populations.</p> <p>Cultural exchanges</p>	<p>The transformations of local cultures and the change of cultural values.</p> <p>Culture shock.</p> <p>Deterioration of the local cultural heritage.</p> <p>To be exposed to risks, in particular the climate, tropical diseases, epidemics.</p>
Economical	<p>Develop for the local economy.</p> <p>Increased income for local populations.</p>	<p>Increase in real estate prices through speculation.</p> <p>Increase in the prices of consumer products.</p>

This table shows that, despite all of the benefits it may provide in terms of development, whether economic or otherwise, tourist activity may also be considered as a double-edged sword since it may have a number of negative consequences (Economically, socially and environmentally).

II.2 Ecotourism:

II.2.1 Definition:

Ecotourism is often described as a form of 'high motivation tourism'. There is no universal definition of ecotourism, which is generally considered to be "environmentally friendly tourism", which in practical terms is interpreted differently depending on the country. (S.Bouzaher 2015)

Ecotourism was first conceptualized in the early 1980s as a type of travel for people who wanted to learn about different and exotic environments without causing the environmental harm or damage associated with other forms of tourism. It became an official term in 1982 when it was recorded in the Oxford English Dictionary as:

Tourism to areas of ecological interest (typically exotic and often threatened natural environments), to support conservation efforts and observe wildlife; access to an endangered environment controlled to have the least possible adverse effect.

For the International Society of Eco-tourism (1991) it is about "...responsible tourism in natural environments which preserves the environment and participates in the well-being of the local populations".

According to the World Conservation Union (1996) it is "... the visit of relatively intact natural environments...with low negative impact... involving a socio-economic involvement of local populations which is both active and beneficial".

II.2.2 Ecotourism Concept:

The most common points emerging from these definitions tend to converge toward the fact that ecotourism is:

- An experience based on nature.
- Improve local community well-being.
- Improve environmental education and conservation of natural environments. (Blangy and Mehla, 2006; Boo, 1990; Boo, 1991 b; Goodwin, 1996; Honey, 2006; Isaacs, 2000; Richardson, 1993; Weaver, 2001; Weaver and Lawton, 2007).

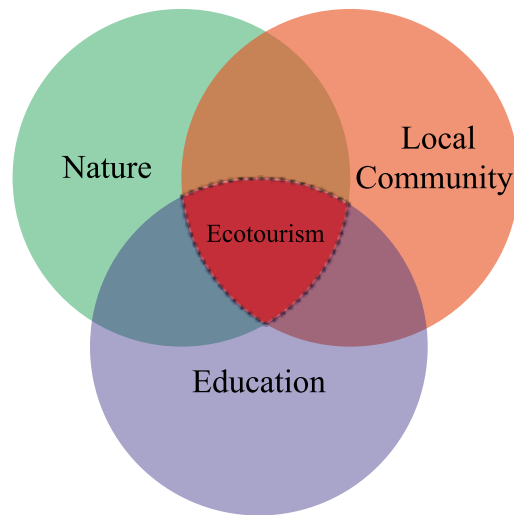


Diagram N° 2: Ecotourism Concept.

Source: Author, 2021.

II.2.3 Historical Ecotourism Concept development:

Following the 1980s, the word "ecotourism" became popular. The desire for ecotourism vacations has risen as people have become more conscious of the need to reduce the negative effects of tourism on the environment via the unrestricted use of natural resources. Then the concept changed through the centuries as shown in (Figure N°25).

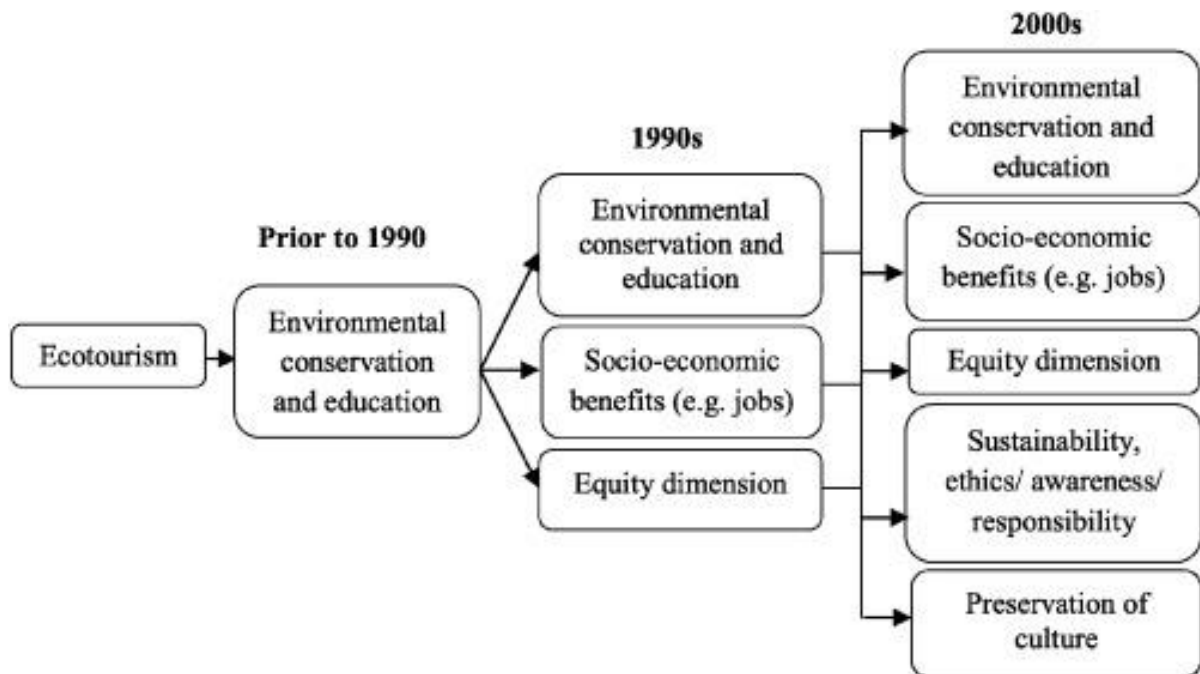


Figure N° 25: Historical Ecotourism Concept development

Source: P.B. Cobbinah, 2015.

II.2.4 Ecotourism Characteristics:

The World Tourism Organization (UNWTO) and the United Nations Environment Program (UNEP) (2002) sought to describe the features of general ecotourism at the inaugural World Ecotourism Summit in Quebec City in 2002:

- Ecotourism actively helps to the preservation of natural and cultural heritage.
- Ecotourism involves local and indigenous populations in its planning, development, and operation, and so benefits their well-being.
- Visitors may learn about the natural and cultural heritage through ecotourism.
- Ecotourism is better suited to individual travel as well as small group excursions.

Therefore, ecotourism incorporates the feature of being focused on nature, the concept of ecological sustainability, the concept of environmental education, the concept of economic benefits to local communities, and the concept of consumer happiness. (Dowling, 2002)

II.2.5 The Difference between Sustainable Tourism, Nature Tourism and Ecotourism:

Both ecotourism and sustainable tourism are concerned with the environment, nature, and the promotion of tourism and the wellbeing of local people. These similarities highlight the critical need for traditional tourism to move to a more environmentally friendly, community-focused model.

The differences, although are what separates these forms of tourism. Eco=ecology and education, which are two of the most important aspects of ecotourism. Sustainable tourism requires long-term viability, less environmental effect, and cultural preservation. Ecotourism should be more focused on nature conservation, environmental protection, or local culture, as well as benefiting the local community. Sustainable tourism has the potential to be more increasingly popular since it can better suit all types of tourism over a larger range. Nature tourism is a type of tourism that focuses only on natural activities.

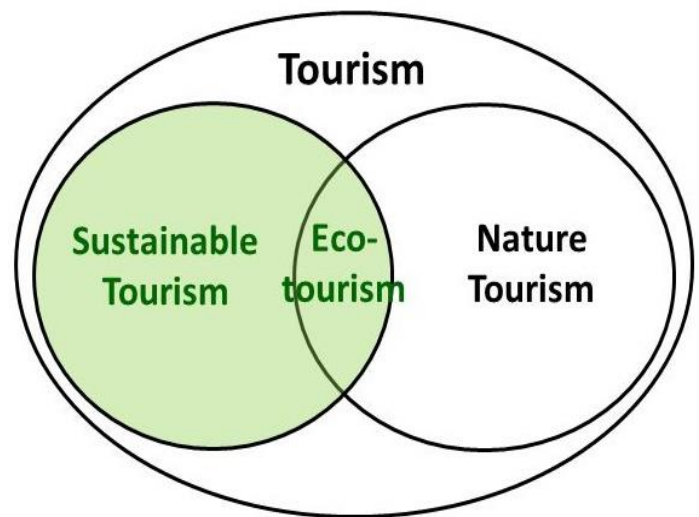


Figure N° 26: Relation between Sustainable, Nature and Ecotourism

Source: H. Hamele, 2014.

II.2.6 Ecotourism Impacts:

Ecotourism is very necessary to our development, both individual and globally and as a result should be given the required attention in order to maximize the benefits derived from it. Ecotourism impacts two big elements:

II.2.6.1 Environment (Ecosystem):

The conservation of fauna (animal life) and flora (plant life) in the biosphere is the first ecological effect to consider. People who visit and study these locations learn about the diversity of species that

live there, as well as their uniqueness, beauty, and significance in the environment (ecological niche), and so learn to appreciate all forms of life and develop ways to protect them.

Ecotourism promotes the continuous production of biomass in the ecosystem so as the energy cycle and resultant food webs and chains are not disturbed. Plants are the basic producers of energy in an ecosystem, so their protection and study ensure biomass production within this trophic level.

Wildlife conservation refers to the preservation of animals and plants in their natural environments. This enables maximal reproduction of numerous species and a growth in the population of a system, as well as an increase in the ecosystem's carrying capacity. (E. Boo, 1990)

II.2.6.2 Local community:

It includes promoting development of peripheral regions, because most of these ecotourism locations are located outside of major cities, it is easier to detect the need for their development and allocation of resources. It also provides job chances for tour guides, professors, and resort proprietors.

It serves as a marketplace for local products and crafts. Tourists buy locally made jewelry, clothing, and accessories, which has an influence on the socioeconomic life of both the locals and the visitors.

It acts as a platform for learning more about other cultures and areas. When visiting and interacting with local residents, one could learn a lot about a place's history, development, tradition, and features. This serves to bring the problems of the local people to the attention of the international world. (E. Boo, 1990)

II.2.7 Ecotourism Strategies:

The goal of ecotourism is to bring conservation, communities, and sustainable travel together. This means that ecotourism experts, participants, and marketers should conform to the following ecotourism principles: (The International Ecotourism Society (TIES))

- Minimize physical, social, behavioral, and psychological impacts.
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Generate financial benefits for both local people and private industry.
- Deliver memorable interpretative experiences to visitors that help raise sensitivity to host countries' political, environmental, and social climates.
- Design, construct and operate low-impact facilities.
- Recognize the rights and spiritual beliefs of the Indigenous People in your community and work in partnership with them to create empowerment. (www.ecotourism.org)

II.2.8 Ecotourism Forms:

Responsible tourism can take numerous shapes for ecotourists. Listed here are a few examples of ecotourism:

- Eco-logging: Choosing accommodations that are created with environmental awareness. These can be from '**Eco-resorts**' to hostels and motels built with sustainable materials or in natural settings.

- Agro-tourism: Rural agricultural communities visiting or volunteering. Ecotourists might collaborate with local people to give sustainable assistance or learn about the region's sustainable agricultural practices.
- Community Development: Volunteering opportunities that focus on offsetting the negative impacts of mass tourism and modernization. Ecotourists can plant trees, build houses, or learn local trades. They can volunteer in schools, museums, or research centers to further cultural awareness.
- Eco Tours: Participating in trips to exotic or threatened locations in order to raise regional awareness and assist conservation.

II.2.9 Ecotourism in Algeria:

In Algeria, as with countries globally, ecotourism is an industry focusing on tourism in the natural areas of the country. It both conserves the environment as well as sustains the lifestyle of Algeria's local people. Algeria is perfect for ecotourism because of its vast landscape and rich biodiversity.

Algeria has declared large sections of the country to be protected areas, and a vast network of national parks has been built.

Tassili n'Ajjer National Park, in southeast Algeria, is one of the most popular ecotourism destinations in the country. A major section of the Tassili n' Ajjer mountain range is included in the park. The mountains' sandstone composition has resulted in the construction of unique rock arches. The Park has been listed as a UNESCO World Heritage Site due to its biological and archaeological value. (www.algeria.com)

III. Tourist Resorts:

III.1 Definition:

Is a geographical area where several leisure activities are combined. (The Cambridge Dictionary)

Historically, any place with several leisure activities is a complex, but the modern phenomenon of "Resort that has appeared since the 1970s with the leisure park industry gives a new meaning to this term.

This term mainly designates large areas, we can compare the definition of a leisure complex to that of a holiday village (or holiday club). It also happens sometimes to use this term to designate a large hotel, offering a multitude of services, or certain private islands. (UNWTO)

III.2 Historical review:

Health-focused resorts have been traced back as far as the ancient Romans. when the Roman empire discovered the local, mineral-rich hot springs.

These resort spas were once only accessible to society's richest members. Only in the contemporary period did the typical individual have the funds and free time to engage in these activities. The 1960s were the peak of All-Inclusive Resorts. More modern and trendy resort kinds, such as ecotourism, have appeared since then.

III.3 Types:

III.3.1 Recreation Resorts:

There are two subtypes of recreation resorts:

- a. **Health Focused Resorts:** Are a contemporary take on the Roman baths in Bath. Whether it's with sea mineral wraps or detoxing through guided yoga and specific diets to improve your health.
- b. **sport-focused resorts:** Resorts with a concentration on the port. Golfing vacations are a popular example. These resorts provide access to a nearby golf course.



Figure N° 27: Argentario Golf Resort & Spa

Source: www.trapadviser.com

III.3.2 All Inclusive Resorts:

All-inclusive resorts with a wide range of facilities. The majority of these resorts operate on a fixed-price basis. Vacationers pay per day and can access the majority of the resort's amenities.

These resorts may serve to certain groups, such as business conventions, Vacationers, or wedding parties. The difference to a 'simple' all-inclusive hotel lies in the range of services, amenities, entertainment and recreational activities offered.



Figure N° 28: Hawaii Resort, USA.

Source: www.trapadviser.com

III.3.3 Destinations Resorts:

A destination resort is developed around a primary attraction that excites the interest of tourists. This might be a castle that has been transformed into a hotel or a stunning natural environment such as Yellowstone. Among the most popular destinations are:

- a. **Beach resorts:** such as those found in Bali or on the French Riviera, can cover a whole island if it is tiny.
- b. **Mountain resorts:** offering breathtaking views, ski resorts in the winter, and hiking routes in the summer.
- c. **Desert resorts:** hidden among colorful dunes and ancient sandstone canyons.



Figure N° 30: Al Maha Resort, UAE.

Source: www.trapadviser.com.

III.3.4 Historic Resort:

The focus is on the historical site or archeological site of historic resorts. The only thing here is not location. Not merely near these places is a historic resort. They are generally celebrated with a theme, enrichment, day excursions, etc.

III.3.5 Ecotourism Resort:

For many individuals, conservation now is a major issue. Ecotourism resorts allow guests to enjoy a wonderful holiday with environmental and cultural awareness and respect. These resorts are sometimes built with environmentally friendly features such as solar panels on the roofs and rainwater cisterns.

Others are more direct in their approach and offer renewable energy sources, recycling services, eco-friendly toiletries, energy efficient lighting, locally sourced food, organic linens, non-toxic cleaning supplies, non-disposable dishes, water conservation methods, and various other sustainability-focused initiatives.



Figure N° 32: Nautilus Eco-Resort, Philippines.

Source: www.idesignarch.com

III.4 Main Components:

III.4.1 Attraction:

It is the most major element and thing that attracts people to travel. It contains cultural sites, archeological sites, historical structures, monuments, or landscape such as flora and wildlife, beaches, resorts, mountains, and national parks. There are two kinds of attraction:

- a. Natural Attraction:** Attraction places made by nature; climate, natural beauty, landscape, mountains, water resources, flora and fauna, wildlife, beaches, safari, caves etc.
- b. Man-Made Attraction:** Attraction developed by man; historical buildings, monuments, music, festivals, temples, churches, leisure parks, Disney lands, museums.

III.4.2 Accessibility:

It is an essential aspect in the growth of tourism. The attraction may be located anywhere, but without access, it is impossible to reach it. It is a means of transportation that assists tourists in reaching their destination. There are three modes of transportation:

- a. Surface:** Transportation in land through roadways or railways. It is the cheapest means of transportation.
- b. Air Transportation:** Transportation through airways to travel long distance. It has helped a lot as people can travel long journey as well as they can travel through high mountains.
- c. Water Transportation:** Transportation through water. It made important contribution to travel in 19th century after the innovation of shipping technology.

III.4.3 Accommodation:

It provides the guest with meals and housing. It should be a comfortable environment where services and amenities are given. There are two sorts of accommodations:

- a. Serviced Accommodation:** It refers to the services provided by the hotel, lodges etc. Different hotels are established to provide service of lodging and food to the guest.
- b. Self-Catering or Supplementary Accommodation:** It refers to the premises which offer accommodation but not the services of hotel.

III.4.4 Facilities:

Extra facilities and services required to the guest while traveling. Facilities complement to the attraction. There are two types of facilities:

- a. **Natural:** Seashores, sea bath, fishing, rock climbing, river, sunrise etc.
- c. **Man-made:** Dance, Music, Drama, Cinema, Swimming Pool, Fair and Festivals, and Internet etc.

III.5 Requirements:

III.5.1 Main Urban Requirements:

III.5.1.1 Situation:

- To fulfill its primary role, the resort must be located outside of the city, away from urban - activity.
- Away from work and the daily routine.
- Capable of being accessible by several modes of transportation.

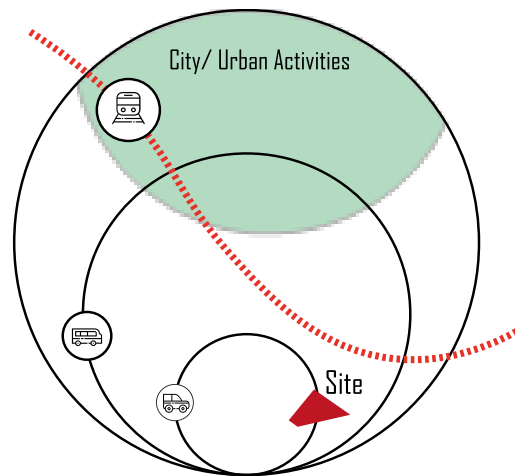


Diagram N° 3: Situation Requirements for Resorts.

Source: Author, 2021.

III.5.1.2 Accessibility:

- The resort must be well-connected to its surroundings in order to be easily accessible.
- There is more than one method to access the site –
- It must feature many access and departure points that consider the road network surrounding the property for convenient movement.

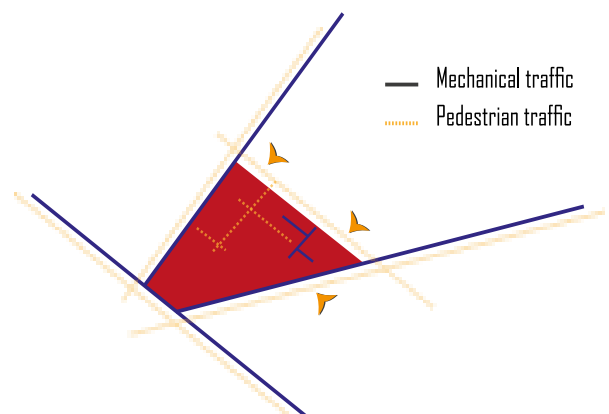


Diagram N° 4: Accessibility Requirements for Resorts.

Source: Author, 2021.

III.5.1.3 Traffic:

- Access to any location on the site with ease and safety.
- Simple pedestrian and mechanical network organization.

III.5.1.4 Hierarchy:

- A spatial hierarchy that separates between public, semi-public, and private places.
- The link between interior and outdoor areas is critical, with a smooth transition from one space to the next one.

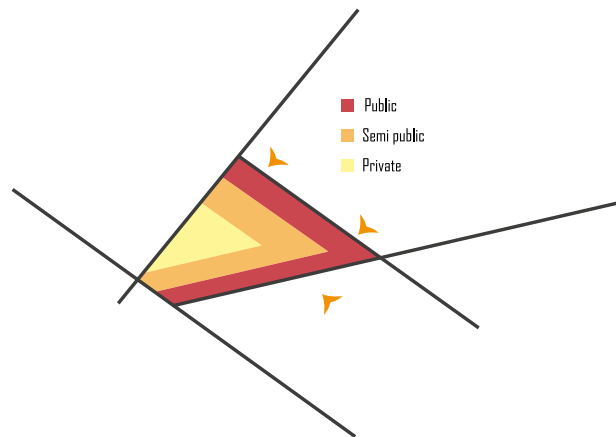


Diagram N° 5: Hierarchy Requirements for Resorts.

Source: Author, 2021.

III.5.2 Main Architectural Requirements:

III.5.2.1 Site Furniture:

- Plants, fountains, lighting poles, artistic features, and other site furnishings are important contributions.
- Fountains and water elements provide a pleasant and delicate impression that contrasts with the dryness and severity of the architecture.

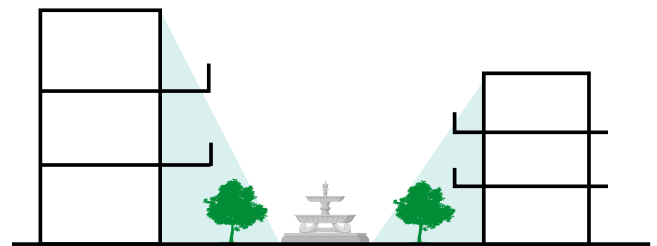


Figure N° 33: Site Furniture.

Source: Author, 2021.

III.5.2.2 The entrance:

- The entrance should be appealing and welcome in terms of size and design; it should be defined by a large area.
- The zone before the entry should be treated in a specific manner:
 - Green space.
 - Open space



Figure N° 35: Entrance Treatment, Amenjena Resort, Morocco.

Source: Author, 2021.

III.5.2.3 Circulation elements:

- Their design is determined by two important factors: the number of users of the building and the number of the levels.
- Stairwells and elevators are positioned in the same service core and are visible from reception. (Neufert)

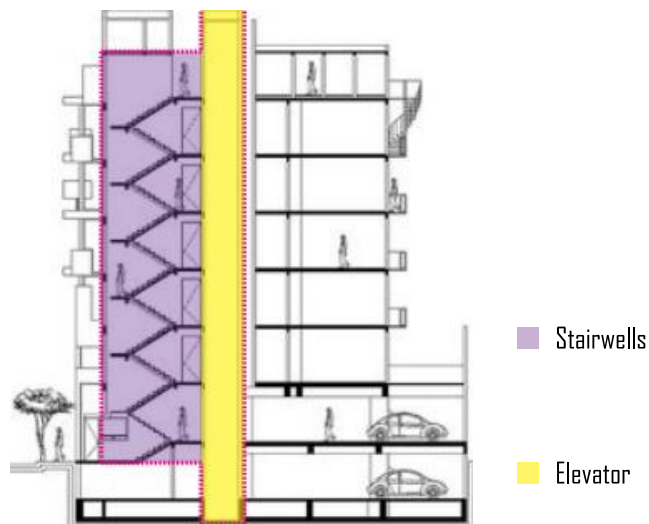


Figure N° 37: Circulation Elements Requirements.

Source: Author, 2021.

III.5.2.4 Lighting:

- Natural lighting:
The movement of the sun on the facade, as well as the varying angles of it due to the various orientation of the buildings with relation to the original destinations, must be carefully considered.
- Industrial lighting. (Neufert)



Figure N° 39: Natural Lighting.

Source: Neufert.

III.5.2.5 Accommodation:

- Bedrooms with an east or south orientation.
- The rooms' height must be higher than 2.8m.
- The overall area required for a bed range from 35m² to 40-50-60%.
- The proportion of available bedroom space ranges between.
- The size of the rooms in each category is determined by their appropriateness, taking into consideration the minimum area in which a single bed may be put 6m².

III.5.2.6 Spa and Hammam:

- Ground: Provide a floor with a slight slope (1 cm per linear meter), towards a Siphon.
- Ceiling: The height of a cabin in the Hammam is generally included between 2.20 and 2.30 meters.
- Ventilation: Good ventilation allows the cabin to dry after use.
- Thermal insulation and waterproofing: The use of only compatible materials that support humidity and high temperature.
- Respect of thermal path.

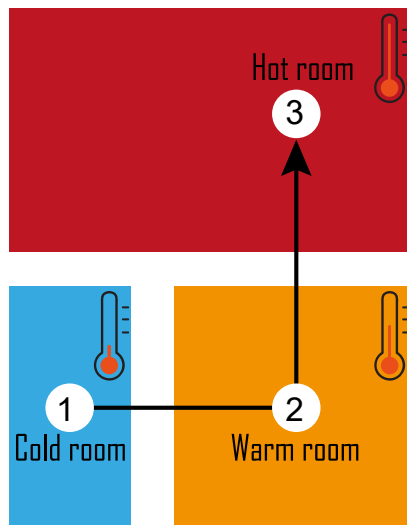


Diagram N° 7: Thermal Path

Source: Author, 2021.

III.5.2.7 Restaurant and Cafeteria:

- It must contain two main spaces, preparation, and dining space.
- Kitchen area 0.5 - 0.6 m², per guest.
- Consumption room 1.4 - 1.6 m² per customer.
- Restaurant sanitary facilities 3/5 for men, 2/5 for women. (Neufert)

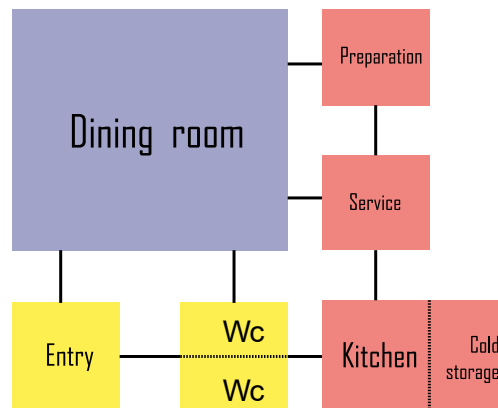


Diagram N° 8: Functional Diagram of Restaurants.

Source: Author, 2021.

Conclusion

We presented in this chapter the theoretical study of the three concepts, where we started at first by identifying the Oases areas and their characteristics, in the second concept Ecotourism, where we focused on the difference between nature, sustainable tourism and ecotourism and mentioned their most important impacts and its examples in Algeria, and finally we presented the project and its most important requirements.

We were able to form a theoretical basis to help us in the conceptual process, but before designing, we must set an analytical study of the different projects related to the subject, the project, and the site.

Chapter Two: Analytical Approach

Introduction:

This chapter performs the analytical aspect of built and virtual examples that will assist us in developing a strong knowledge to design a Tourist Resort project.

Since the project will be implemented in the city of Biskra and exactly beside The Red Village in Al Kantara settlement, we studied the zone as well as the plot, and set the program that we would follow in the design.

To develop the project design, we will use three types of case studies. First, a case study relevant to the project's nature (**Tourist Resort**), with the aim of ensuring the functional specificity and the varied activities associated with the project from the urban to the architectural levels.

Second, we move on to the case study related to the concept (**Ecotourism**), with the aim of identifying the processes of its adaptive applications in architectural projects.

Third, the case study related to the site to identify the peculiarities of the positioning of the segment, its strengths and weaknesses, and finding solutions to them.

I. Project Case Study:

We selected the following four examples (Table N°:02) for our case study based on various selection criteria specific to the type and location of the project (Table N°:03). On both (Table N°:04) and (Table N°:05), we assigned a color to each example and ranked them from most fulfilled to case study element to least fulfilled (from left to right).

I.1 Technical workflow:

Table N° 2: Examples Technical workflow.

Source: Author, 2021.

Cocoon Resort	Amenjena Resort	Al Wathba Resort	Quasr Al Sarab Resort
			
<p>Location: Tulum, Mexico</p> <p>Program : Tourist resort</p> <p>Client : Zama Deaarrollos</p> <p>Site : 59.402 m²</p> <p>Built : 46.181 m²</p> <p>Status : In progress</p> <p>Date : 2020</p>	<p>Location: Marrakech, Morocco</p> <p>Program: Tourist resort</p> <p>Client: Aman Resorts</p> <p>Site: 48.308 m²</p> <p>Status: Completed</p> <p>Date: 2000</p>	<p>Location: Abu Dhabi, UAE</p> <p>Program: Tourist resort</p> <p>Client: Al wathba resorts</p> <p>Status: Completed</p> <p>Date: 2000</p>	<p>Location: Abu Dhabi, UAE</p> <p>Program: Tourist resort</p> <p>Statuts: completed</p> <p>Architect: Anatara Office</p> <p>Date: 2009</p>

I.2 Selection Criteria:

Table N° 4: Examples Choice criteria

Source: Author, 2021.

Cocoon Resort	Amenjena Resort	Al Wathba Resort	Quasr Al Sarab Resort
<ul style="list-style-type: none"> - An Eco-friendly resort. - Nearby archaeological sites. - Surrounded by the forest. 	<ul style="list-style-type: none"> - Situated in the oasis of Marrakech. - Al Medinah Al Hamra was the inspiration for Amanjena's design. 	<ul style="list-style-type: none"> - One of the biggest and luxurious resorts in UAE. - The project is located in an arid area. -Traditional Arabic Architecture. 	<ul style="list-style-type: none"> - Situated in the largest desert in the world. - Reinforced local building design and traditions. - A mix of traditional and modern design.



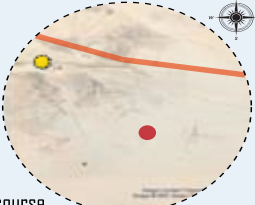
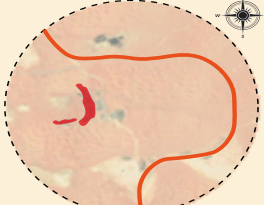

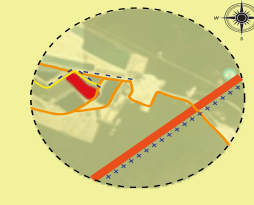
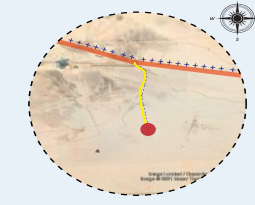
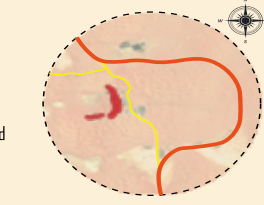



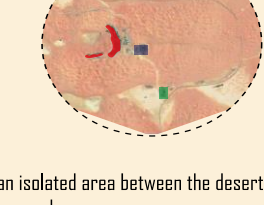
I.3 Urban Study:

The first part of the case study is the urban study of the projects, which is the most important criterion to our design relative to its scale and the multi-services which offers, so we studied firstly the situation and the accessibility to the site and the existing flow types of the area, then we moved to the surrounding environment of the examples (building and activities), we passed then to study the type and number of access and circulation between the different facilities and how strong is the functional relation between them and the accommodation service, and in the last we studied the volumetry and the urban elevation.





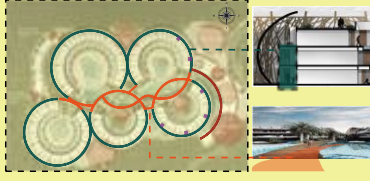
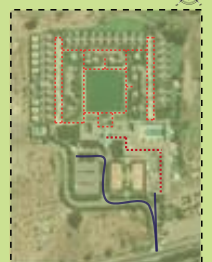
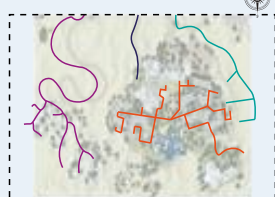
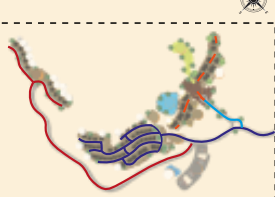


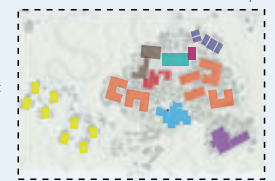
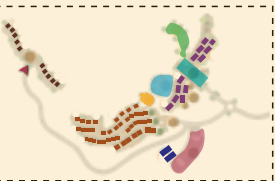
Chapter Two: Analytical Approach

Table N° 6: Urban Study

Source: Author, 2021.




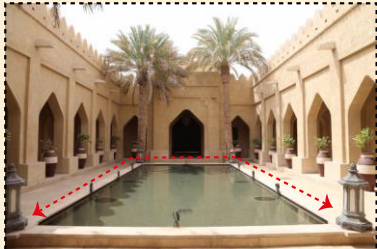
Situation	 <p> ◆ Site — Principal road ■ Championship Golf Course </p> <p>The project is situated along a national road, and in front of the Championship Golf course.</p>	 <p> ◆ Site — Highway ■ Archeological site </p> <p>The site is surrounded by the forest, in the west of an archeological site and a kilometer away from the seaside.</p>	 <p> ● Site — Principal road ● Camel training course </p> <p>Isolated site, far from the main road in the east of the camel training course.</p>	 <p> ● Site — Principal road </p> <p>Isolated site, far from the city</p>
	<p>- The project has to be outside the city, far from urban activities, and can be spotted.</p>			
Accessibility and flow	 <p> ◆ Site — Highway — Secondary road — Tertiary road +++ High flow --- Low flow </p> <p>The site is accessible through a principal national road / direct relation with the city</p>	 <p> ◆ Site — Highway — Principal road — Secondary road +++ High flow --- Low flow </p> <p>The site is accessible through 03 different mechanical roads / Indirect accessibility from the city</p>	 <p> — Principal road — Secondary road +++ High flow --- Low flow </p> <p>Bad accessibility to the site in the middle of the desert / Indirect relation with the city.</p>	 <p> — Principal road — Secondary road </p> <p>Bad accessibility to the site in the middle of the desert / Indirect relation with the city.</p>
	<p>- Good accessibility to the site through different mechanical roads. - Low flow around the site</p>			
Distant environment	 <p> ■ Golf Course ■ Agricultural land ■ Touristic Village ■ Hotel ■ Residential Villas ■ Water lake </p> <p>The site is surrounded by many touristic projects, and across the championship Golf course, which makes the area a touristic pole.</p>	 <p> ● Camel training course ● Bicycle courses </p> <p>The site is near to a touristic activities.</p>	 <p> ■ Forest ■ Water lake ■ Industrial Zone ■ Corporate office ■ Archeological site </p> <p>The project is in a high vegetation density area, with different activities around it.</p>	 <p> ■ Agricultural land ■ Employee hostel </p> <p>The project is in an isolated area between the desert dunes.</p>
	<p>- Site surrounded by touristic projects, different activities, and natural resources.</p>			

Chapter Two: Analytical Approach

Access	<ul style="list-style-type: none"> ▶ Principal access ▶ Parking access ▶ Lobby access ▶ Administration access  <p style="text-align: center;">Ease of the accessibility to the project / Independance of spaces</p>	<ul style="list-style-type: none"> ▶ Principal access ▶ Parking access ▶ Meeting space access ▶ Administration access  <p style="text-align: center;">Multiple entrances to different spaces to avoid crowding</p>	<ul style="list-style-type: none"> ▶ Principal access ▶ Parking access ▶ Accomodation access ▶ Administration access  <p style="text-align: center;">Multiple entrances to different spaces to avoid crowding</p>	<ul style="list-style-type: none"> ▶ Principal access ▶ Parking access ▶ Vip villas access ▶ Family pavillion access  <p style="text-align: center;">Multiple entrances to different spaces to avoid crowding</p>
	<p>- Ease accessibility to the project through multiple entrances for different spaces and type of users to avoid crowding.</p>			
Circulation	 <ul style="list-style-type: none"> — Internal Circulation — Exterior Circulation — Employee Circulation — Vertical Circulation <p style="text-align: center;">The project is well connected by two types of circulation, private spaces to commun spaces.</p>	 <ul style="list-style-type: none"> — Clients Circulation — Employee Circulation — Mechanical Circulation <p style="text-align: center;">Two types of circulation for the two types of users</p>	<ul style="list-style-type: none"> Mechanical : — Vip clients — Employee — Clients <p>Pedestrian : — Clients</p>  <p style="text-align: center;">Mechanical circulation outside the project pedestrian circulation inside the project</p>	<ul style="list-style-type: none"> Mechanical : — Vip clients — Deluxe suit clients — Hotel clients <p>Pedestrian : — Hotel clients</p>  <p style="text-align: center;">Mechanical circulation outside the project pedestrian circulation inside the project</p>
	<p>Traffic separation by users type , Pedestriand and mechanical, Users and clientc.</p>			
Build and Unbuild	<ul style="list-style-type: none"> <li style="width: 50%;">■ Pool / Bassin <li style="width: 50%;">■ Spa / Hammen <li style="width: 50%;">■ Green area <li style="width: 50%;">■ Restaurant <li style="width: 50%;">■ Guest room <li style="width: 50%;">■ Library <li style="width: 50%;">■ Pool Pavillion <li style="width: 50%;">■ Shop <li style="width: 50%;">■ Family suit <li style="width: 50%;">■ Tennis Playground <li style="width: 50%;">■ Vip Suit <li style="width: 50%;">■ Administration <li style="width: 50%;">■ Parking  <p>Built 51 % Unbuild 49 %</p> <p style="text-align: center;">Legibility of spaces due to the U shaped distribution and the dispersed implantation</p>	<ul style="list-style-type: none"> ■ Built %70 Guest rooms, Administration Meeting space, SPA, Restaurant Kids club, Cafe... ■ Swimming pool %22 ■ Green area %08  <p style="text-align: center;">The build space surround the unbuild space / Non-dense project</p>	<ul style="list-style-type: none"> ■ Lobby ■ Administration ■ SPA ■ Guest room ■ Cafeteria ■ Restaurant ■ WP suit ■ Pool  <p style="text-align: center;">The dispersed implantation made the project illegibile</p>	<ul style="list-style-type: none"> ■ Lobby + administration + Restaurant + Cafeteria ■ SPA ■ Guest room ■ Deluxe suit ■ VIP suit ■ Green area + ■ Pool ■ Parking  <p style="text-align: center;">The dispersed implantation based on accomodation type</p>
	<p>- Balanced build and unbuild spaces, and high plant density. - Legible urban planning.</p>			

Chapter Two: Analytical Approach

Zoning	<p style="text-align: center;">Functional relations between the guest rooms and the activities</p>	<p style="text-align: center;">Unfunctional relations between the guest rooms and activities</p>	<p style="text-align: center;">Unfunctional relations between the guest rooms and activities</p>	<p style="text-align: center;">Unfunctional relations between the guest rooms and activities</p>
	<p>- Guest rooms must have strong relation with activities</p>			
Volumetry	<p style="text-align: center;">The design meets the climatic requirements</p>	<p style="text-align: center;">The volume of the project meets the conceptual and landscape requirements</p>	<p style="text-align: center;">Simple forms (cube) separated and distributed in paralell for better legibility and circulation inside the project</p>	<p style="text-align: center;">The project has multiple volumes dispersed by accomodation type</p>
	<p>- The project volumetry has to respect : the conceptual requirements / fonctional requirements / climatic requirements</p>			
Urban elevation	<p style="text-align: center;">- The reflection of palm trees on the basin - Use of vegetable bodyguard - Use of traditional ornaments</p>	<p style="text-align: center;">- The difference of height created shadow in the elevation - Old arabic architecture inspiration (conception / material / texture).</p>	<p style="text-align: center;">- The use of both aesthetic aspect (double skin facade) and fonctional aspect (solar protection) to integrate the project into its context</p>	<p style="text-align: center;">- The rythm made the project attractive and legible.</p>
	<p>- The dominance of the palm trees on the urban elevation create a rythm in the skyline wich make the project appear like an old arabic city</p>			



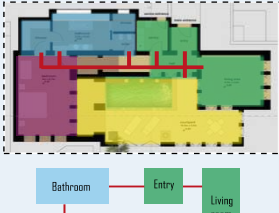
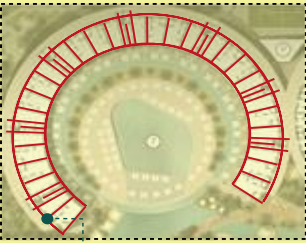
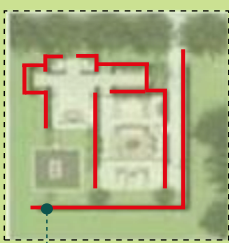
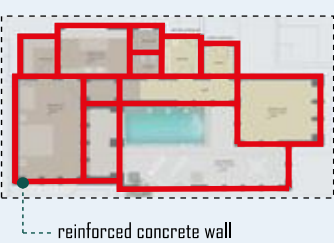
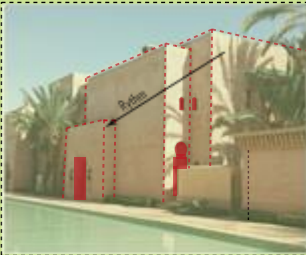

<p>Ambiance and panaromic views</p>	 <p>The use of sonsory passage around the basin reflecting the region s nature</p>	 <p>infinity pool overlooking the desert</p> <p>The use of the sensory approach through perspective landscape</p>	 <p>The penetration of light from the small blanks between the wood and the bamboo create a luminous atmosphere in the circulation passage</p>	 <p>The use of sonsory passage through the gallery around the basin</p>
	<p>- The use of water bodies and palm trees to create a warm ambiance</p>			

I.4 Architectural Study:

The accommodation is one of the most fundamental facilities of a tourist resort; we made a brief analysis at first for three types of guest rooms, secondly of a villa, and thirdly a pavilion, to assist us in determining the functional dispositions of the different accommodation categories, as well as their main areas, and lastly the elevation design.

Table N° 8: Architectural Study.

Source: Author, 2021.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spatial organization</p>	 <ul style="list-style-type: none"> - The functional adjacency is fulfilled between the spaces - Axial distribution of the spaces . 	 <ul style="list-style-type: none"> - The functional adjacency is fulfilled between the spaces - Free plan organisation 	 <ul style="list-style-type: none"> - The functional adjacency is fulfilled between the spaces - Linear spatial organization.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Structure</p>	 <p>reinforced concrete wall</p> <p>The structural frame follows the project form</p>	 <p>reinforced concrete wall</p> <p>The structure unit works with the conception</p>	 <p>reinforced concrete wall</p> <p>The structure unit works with the conception</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Elevation</p>	 <ul style="list-style-type: none"> - Most of the elevation is closed due to environment requirements - The natural used materials and their texture refers to the ancient Red village 	 <ul style="list-style-type: none"> - The difference of height created shadow in the elevation - Old arabic architecture inspiration (conception / material / texture) 	

II. Concept Case Study:

We selected the following three examples (Table N°:06) for our case study based on some selection criteria specific to our concept study ‘Ecotourism,’ as well as the methods and strategies used on the projects (Table N°:07).

II.1 Technical workflow:

Table N° 10 : Concept Case Study Technical workflow.

Source: Author,2021.



Liwa Oasis Eco Resort

Location: Liwa, UAE
Project: Oasis eco resort
Status: Uncompleted
Architect: Baharash
Date: 2021



Lodge complex

Location: Abu Dhabi, UAE
Project: Lodge complex
Status: Uncompleted
Architect: Habanero



Kubuqi Hotel

Location: Kubuqi Desert, China
Project: Hotel
Client: Xiangshawan Tourism
Architects: PLAT ASIA
Status: completed
Year: 2016

II.2 Selection Criteria:

Table N° 11 : Concept Case Study Selection Criteria.

Source: Author,2021.

Liwa Oasis Eco Resort

- The world’s greenest eco resort
- Zero emission zone
- Preserve the region’s heritage

Lodge complex

- First prize winner in Lodge complex competition for Abu Dhabi desert
- Built with sustainable strategies
- Preserve the area’s environment

Kubuqi Hotel

- Use of innovative construction techniques
- Energy saving

II.3 Methods and Strategies Study:

The aim of ecotourism is to reduce environmental negative impacts through a variety of methods and strategies shared by the three case study examples, such as building shape and orientation, energy and wastewater management, energy production, and so on.

We made a diagram for each example, representing the analysis elements in the different project's drawings such as masterplans, plans, elevations, and interior and exterior views.

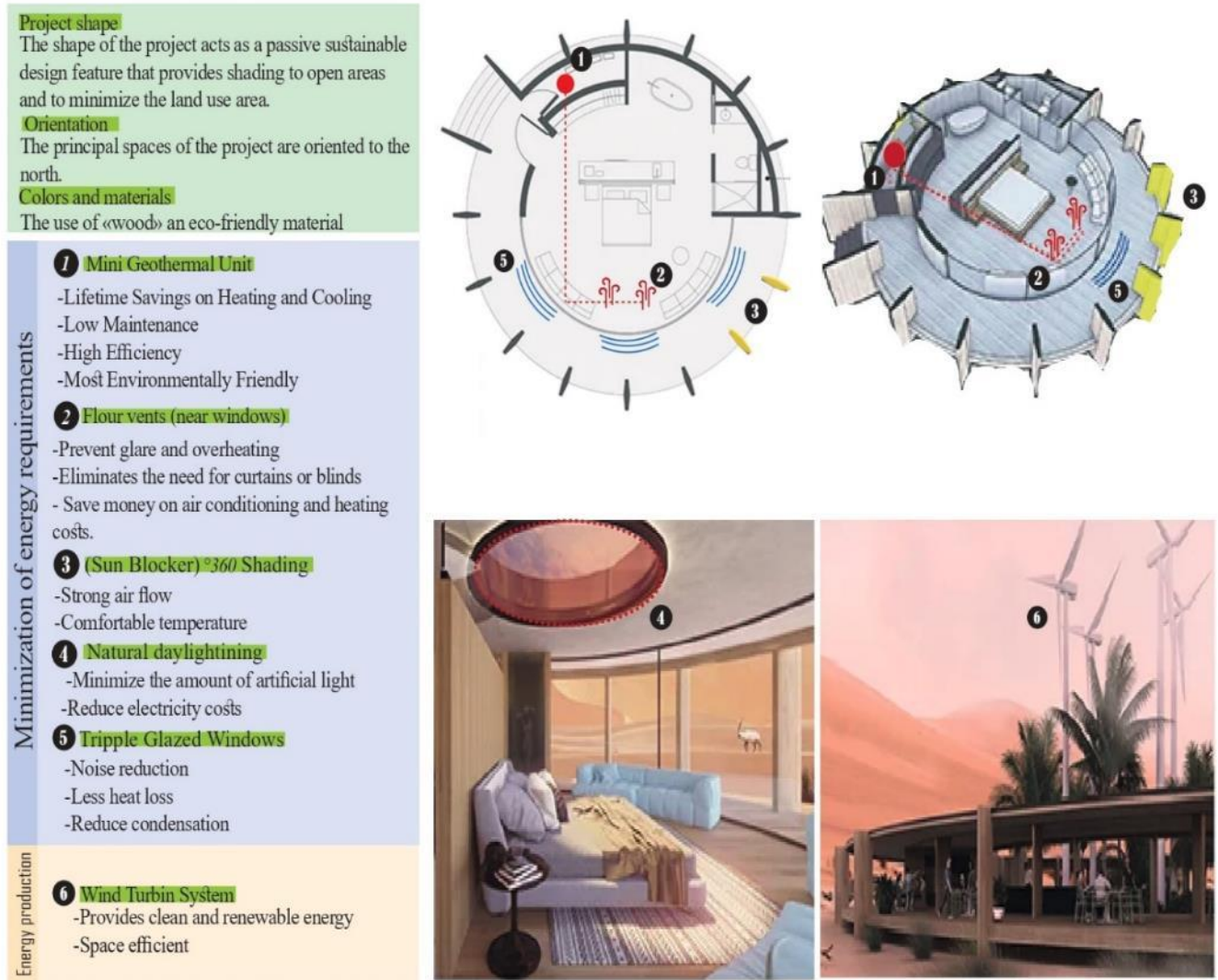


Figure N° 40: Complex Lodge Case Study

Source: Author, 2021.

Project Shape:

The shape of the project is harmonious with nature by the conservation of a central place full of date palm and plants with a natural water basin open towards the sky to let the sunlight illuminate the places.

Orientation:

The principal spaces of the project are oriented to the north

Colors and materials:

The use of local eco-friendly materials of the region like the clay to minimize the environmental impacts and its color to preserve the original appearance of building as long as possible.

Minimization of energy requirements

1 Natural Basin

Used for crop irrigation, fish farming, and recreational activities, as well as providing a natural habitat for various wildlif.



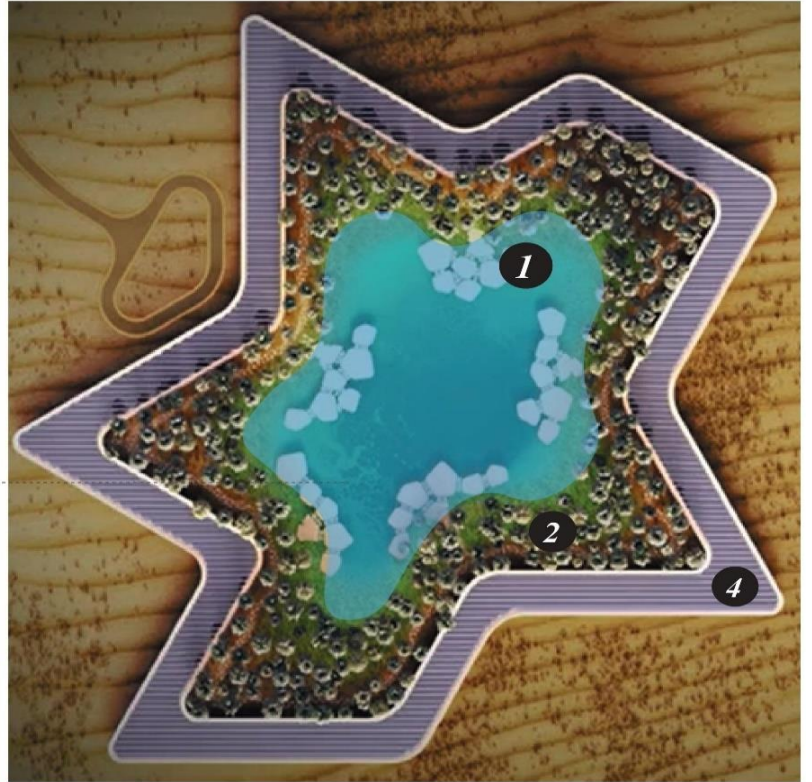
2 Date palms

Provide shade, decrease air temperature and maintain relatively high air humidity inside the oasis, enabling agricultural production.

3 Smart Glass windows

- Reduce the amount of direct sunlight
- Reflects the heat away
- Lower energy waste

Reduction of Energy Losses



Energy production

4 Solar panels

The roof is designed to maximize the area for solar panels which are planned for optimum efficiency



Waste managing

5 Waste water reuse system

- Recycling wastewater on site for irrigation
- Recycled water can be used in toilets, desert plnating and new water landscapes

Figure N° 41: Liwa Tourist Eco Resort Case Study

Source: Author,2021.



Figure N° 42: Kubuqi Desert Case Study.

Source: Author,2021.

III. Site Case Study:

III.1 Choice criteria:

- The site is accessible through the touristic road.
- The site is located beside the Red Village, an open-air museum.
- Various natural resources on the site.
- The site offers panoramic views through the Oasis, and the mountain gorges.
- The lack of touristic facilities in the region.

III.2 Presentation of the City:

a. Geographic Situation:

Al Kantara is a town in the wilaya of Biskra in Algeria . An oasis located in the southwest of Aures , 52 km north of Biskra and 62 kmsouthwest of Batna, and it's 23 910,00m²

b. Climate:

The climate of the municipality is cold in winter and hot in summer.

Table N° 12: Al Kantara Climate Data.

Source: Biskra's Monography, 2008.

Month	Jan.	Feb.	March	April	may	June	Jul.	August	Sep.	Oct.	Nov.	Dec.	year
Average minimum temperature (° C)	2.6	3.5	6.9	9.8	13.7	18.9	21.4	21	18.2	12.9	7.7	3	11.6
Average temperature (° C)	7.5	8.7	12.7	16.3	20.6	26	28.8	28.3	24.6	18.8	12.9	7.7	17.7
Average maximum temperature (° C)	12.3	13.7	18.6	22.7	27.5	32.9	36.3	35.3	30.8	24.5	17.8	12.5	23.7
Number of days with frost	6	3	1	1	0	0	0	0	0	0	1	4	16
Precipitation (mm)	24	9	21	12	13	8	2	7	20	20	29	31	196
Number of days with precipitation	6	5	6	4	4	2	1	2	4	5	6	7	52



Diagram N° 9: Al Kantara Situation.

Source: www.wikiwand.com

a. Demography:

The age pyramid established for El Kantara in 2008 is substantially identical to that established for the entire wilaya of Biskra. Like the Algerian population, the population of the commune is young, 59.3% are under 30.

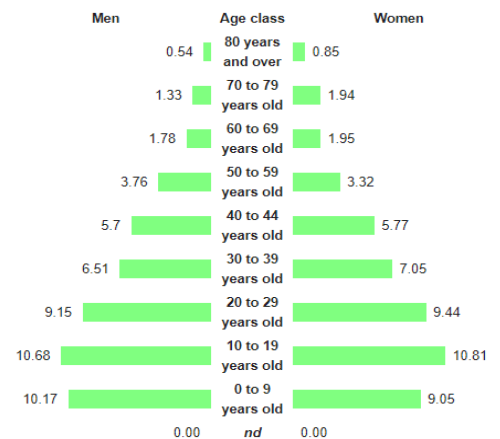


Figure N° 43: Al Kantara Age Pyramid.

Source: Biskra's Monography, 2008.

III.3 Site Urban Study:

Table N° 14: Site Urban Study.

Source: Author,2021.

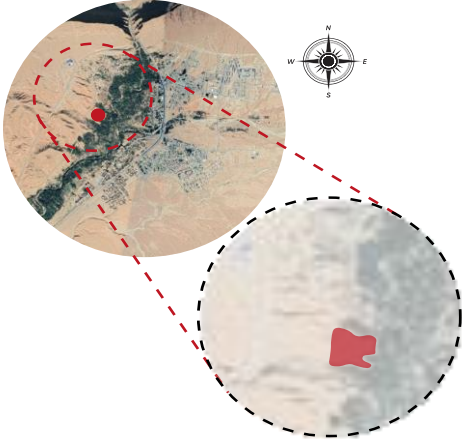
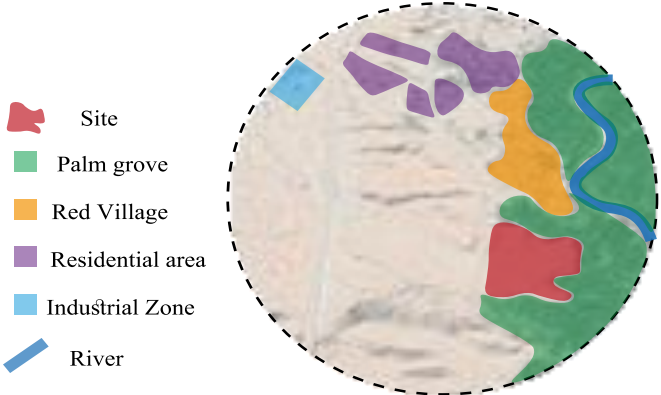
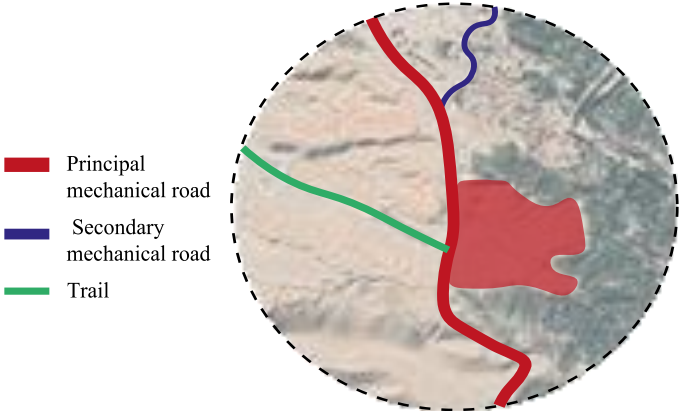
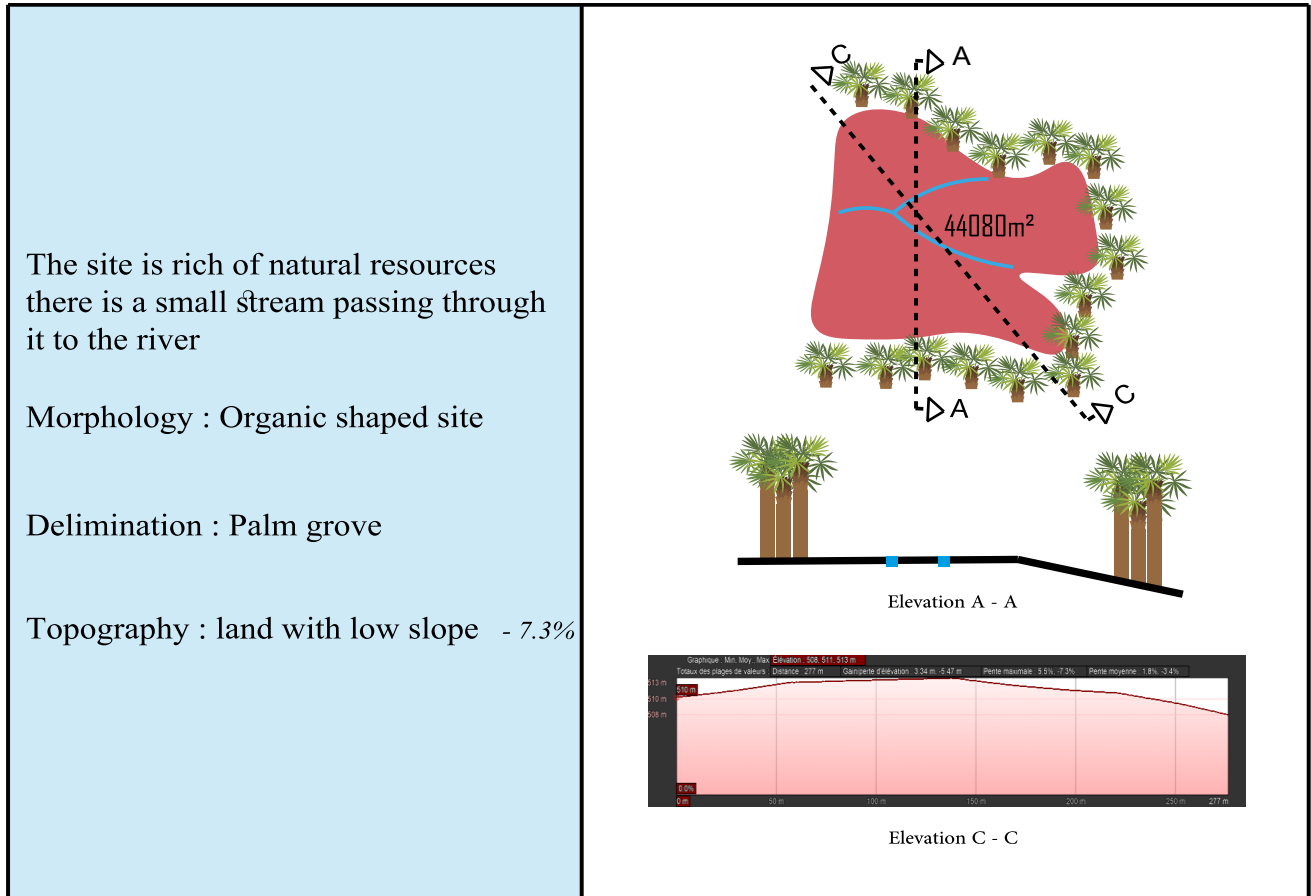
<p>Situation</p> <p>-The intervention site is situated in the West of El Kantra along the touristic road near to the Red Village and around a palm grove</p>	
<p>Distant Environment</p> <p>-Different activities around the site residential, agricultural and industrial</p>	
<p>Accessibility</p> <p>- The site is accessible through three different mechanical roads</p> <p>- High flow in front of the site</p> <p>-Low flow around the site</p> <p>- No pedestrian traffic</p>	

Table N° 15: Physical Data Study.

Sources: Author,2021.



III.4 Physical Data Study:

III.5 Climatic Study:

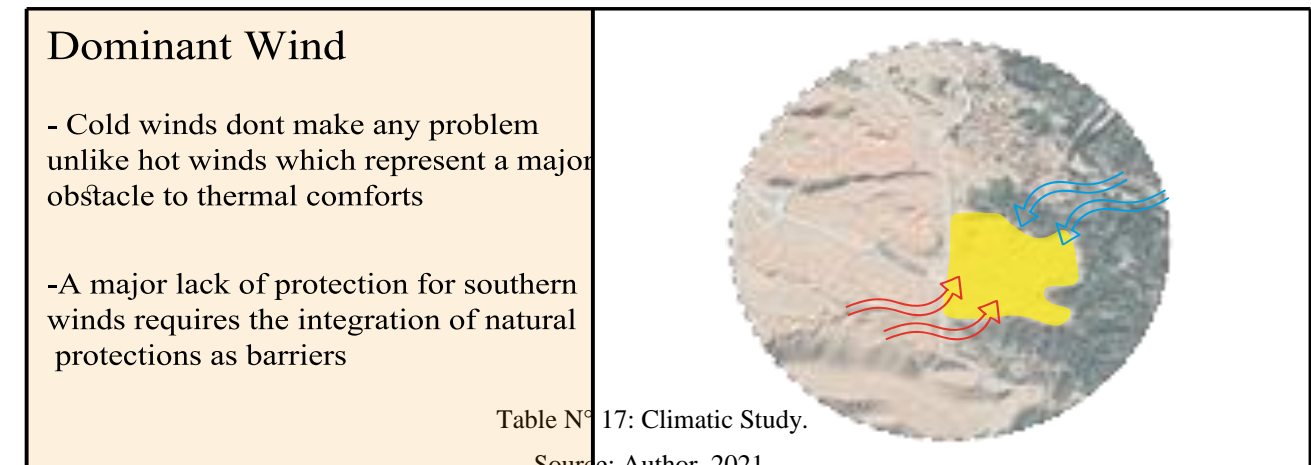



Table N° 17: Climatic Study.

Source: Author, 2021.

<p>Sunpath</p> <ul style="list-style-type: none">- The land is exposed to solar radiation in both seasons due to the absence of natural obstacles- The land has decent light throughout the winter but overheated during the summer- The land is not protected from the rays which requires a well-studied development	
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III.6 Panoramic Views:

The site offers beautiful panoramic views above the river on the Est, in the North the famous Gorges of Al Kantara and the Red Village and in the Ouest the touristic road.

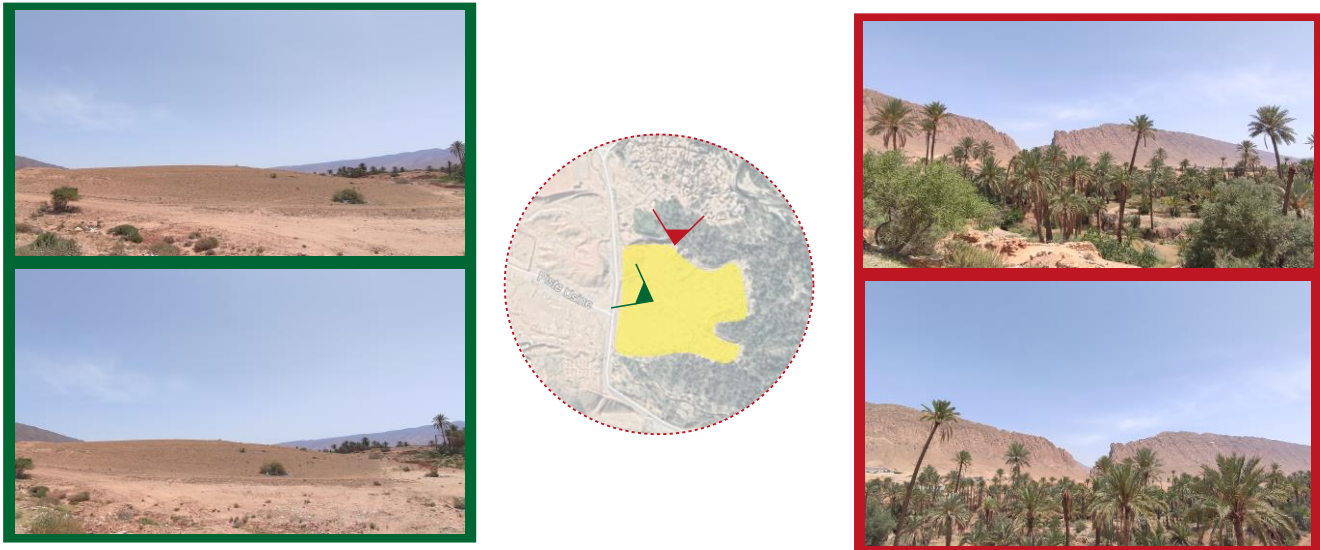


Diagram N° 10: Panoramic Views Position.

Source: Author,2021.

III.7 Conclusion:

Table N° 19: Case Study Conclusion.

Source: Author,2021.

		Treatment
Strength points	A strategic location outside the city to fulfill the function of the project.	Create an outdoor relaxation and rest spaces.
	The site is nearby tourist sites : (Roman remains and Red Village).	The project must be spotted from the tourist sites.
	Ease of mechanical flow to the site by a principale road in the east.	The entry of the project must be in the east along the principale road.
	The existence of natural resources (palm grove and river).	Exploitation of the natural resources, the river for the irrigation system and the palm grove has a double advantage: ecologically, it provides a framework that reduces evapotranspiration and acreates a microclimate; economically, it ensures a marketable and exportable product.
	The site is exposed to solar radiation, throughout the year.	The use of solar panels to produce renewable energy.
Weakness points	The site is exposed to solar radiation, throughout the year.	<p>The project has to be well oriented to the direct sun radiation and its heat.</p> <p>The use of technics and methods of shading like sun blockers.</p>
	The site is not shielded from the hot wind.	<p>Well-designed landscaping.</p> <p>More vegetated surfaces.</p>

III. Program:

III.1 Programming Method:

Based on the Ministry of Tourism’s recommended Tourist Resort Program, as well as our examples case study and the project requirements, we identified six sectors. Each sector has spaces with various and integrated activities and functions.

Following the site analysis, we identified several weaknesses in the surrounding activities and leisure spaces that we must improve in our project, as well as outdoor spaces that may enhance the project’s components and assist attract more visitors and revitalize the area’s tourism.



Diagram N° 11: The project’s Programming Method.

Source: Author, 2021.

III.2 Proposed Program:

The proposed program contains six major units, (04 Indoor/ 02 Outdoor), each unit has multiple services, and the services has various spaces and functions.

III.2.1 Indoor Units:

Table N° 21: Indoor Units Program.

Source: Author,2021.

Unit	Service	Space	Unit area	Number	Total area	Observation	
Management Unit	Lobby	Hall	25m ²	01	25m ²		
		Reception	20m ²	01	20m ²		
		Waiting area	50m ²	01	50m ²		
	Total service area :					95m²	
	Administration	Desk office	15m ²	05	75m ²		
		High office	40m ²	01	40m ²		
		Reunion office	30m ²	01	30m ²		
		Guest office	25m ²	01	25m ²		
		Men's Wc	10m ²	01	10m ²		
		Women's Wc	10m ²	01	10m ²		
		Technical area	150m ²	01	150m ²		
	Total service area :					340m²	
	Pool annex	Changing room	20m ²	02	40m ²		
		Shower room	25m ²	02	50m ²		
		Instructors room	15m ²	01	15m ²		
Total service area :					105m²		
Service unit	Restaurent	Reception	10m ²	01	10m ²		
		Modern dinning spaces	150m ²	01	150m ²		
		Traditional dinning spaces	150m ²	01	150m ²		
		Pantry	30m ²	01	30m ²		
		Preparation space	20m ²	01	20m ²		
		Cooking space	40m ²	01	40m ²		
		Washing space	15m ²	01	15m ²		
		Cold storage	10m ²	01	10m ²		
		Trush	10m ²	01	10m ²		
		Men's Wc	10,50m ²	01	10,50m ²		
		Women's Wc	10,50m ²	01	10,50m ²		
	Total service area :					456m²	
	Cafeteria	Drinking spaces	150m ²	01	150m ²		
		Tea saloon	100m ²	01	100m ²		
		Pantry	20m ²	01	20m ²		
		Preparation space	10m ²	01	10m ²		
		Washing space	15m ²	01	15m ²		
		Men's Wc	10,50m ²	01	10,50m ²		
		Women's Wc	10,50m ²	01	10,50m ²		
	Total service area :					316m²	
	Shopping arena	Laundry section	25m ²	01	25m ²		
Beauty section		25m ²	01	25m ²			
Medical section		25m ²	01	25m ²			
Book section		25m ²	01	25m ²			
Traditional exposition		50m ²	01	50m ²			
Back-shop		15m ²	01	15m ²			
Men's Wc		10m ²	01	10m ²			
Women's Wc		10m ²	01	10m ²			
Total service area :					185m²		
Praying space *(02)	Main praying area	30m ²	01	30m ²			
	Ablution space	10m ²	01	10m ²			
Total service area :					40m²		
Public Wc	Men's Wc	20m ²	01	20m ²			

Accommodation unit	Hotel	Hall	20m ²	01	20m ²		
		Reception	10m ²	01	10m ²		
		Single room	15m ²	50	750m ²		
		Double room	20m ²	30	600m ²		
		Suit	50m ²	10	500m ²		
		Restaurant	400m ²	01	400m ²		
		Men's Wc	10,50m ²	01	10,50m ²		
		Women's Wc	10,50m ²	01	10,50m ²		
	Total service area :					2300m²	
	Deluxe suit *(24)	Entrance verandah	05m ²	01	05m ²		
		Lobby	5m ²	01	05m ²		
		Living room	25m ²	01	25m ²		
		Master bedroom	20m ²	01	20m ²		
		Simple room	10m ²	01	10m ²		
		Bathroom	10m ²	01	10m ²		
	Total service area :					75m²	
	Vip villa *(12)	Entrance verandah	10m ²	01	10m ²		
		Lobby	10m ²	01	10m ²		
		Living room	30m ²	01	30m ²		
		Master bedroom	20m ²	01	20m ²		
		Double bed room	15m ²	02	30m ²		
		Bathroom	10m ²	02	20m ²		
	Total service area :					120m²	
	Vip Pavillon *(06)	Entrance verandah	15m ²	01	15m ²		
Lobby		10m ²	01	10m ²			
Living room		35m ²	01	35m ²			
Master bedroom		20m ²	02	40m ²			
Double bed room		15m ²	04	60m ²			
Bathroom		10m ²	03	30m ²			
Total service area :					190m²		
Women Spa	Reception	10m ²	01	10m ²			
	Waiting space	05m ²	01	05m ²			
	Changing room	20m ²	01	20m ²			
	Facial room	25m ²	01	25m ²			
	Massage room	35m ²	01	35m ²			
	Pedicure room	10m ²	01	10m ²			
	Manicure room	10m ²	01	10m ²			
	Beauty saloon	25m ²	01	25m ²			
	Juice bar	10m ²	01	10m ²			
	Shop	10m ²	01	10m ²			
	Wc	10m ²	01	10m ²			
	Storage space	20m ²	01	20m ²			
	Office	15m ²	02	15m ²			
	Total service area :					205m²	
Men Spa	Reception	10m ²	01	10m ²			
	Waiting space	05m ²	01	05m ²			
	Changing room	20m ²	01	20m ²			
	Facial room	15m ²	01	15m ²			
	Massage room	35m ²	01	35m ²			
	Barber saloon	25m ²	01	25m ²			
	Juice bar	10m ²	01	10m ²			

Well-being unit	Wc	10m ²	01	10m ²	
	Storage space	20m ²	01	20m ²	
	Office	15m ²	02	30m ²	
Total service area :					190m²
Hamмам (*02)	Reception	10m ²	01	10m ²	
	Waiting space	05m ²	01	05m ²	
	Locker room	15m ²	01	15m ²	
	Shop	10m ²	01	10m ²	
	Collective pool	150m ²	01	150m ²	
	Bath box	15m ²	10	150m ²	
	Rest room	25m ²	01	25m ²	
	Wc	12m ²	01	12m ²	
	Office	15m ²	02	30m ²	
	Technical area	100m ²	01	100m ²	
	Stockage space	20m ²	01	20m ²	
	Total service area :				
Gym	Reception	10m ²	01	10m ²	
	Changing room	15m ²	02	30m ²	
	Main workout area	65m ²	01	65m ²	
	Yoga space	45m ²	01	45m ²	
	Stockage	20m ²	01	20m ²	
Total service area :					170m²
Circulation		%18			
Total build area :					11 701,00m²

Table N° 23: Accommodation Types Program.

Source: Author, 2021.

Accommodation type	Unit Area	Number	Total Area
Hotel	2300m ²	01	2300m ²
Deluxe suit	75m ²	24	1800m ²
Vip villa	120m ²	12	1440m ²
Vip Pavillon	190m ²	06	1140m ²

III.2.2 Outdoor Units Program:

Table N° 25: Outdoor Units Program.

Source: Author,2021.

Unit	Service	Space	Unit Area	Number	Total Area	Observations	
Outdoor leisure unit	Sports playground	Tennis Playground	195m ²	02	390m ²		
		Football playground	220m ²	01	220m ²		
	Total service area :					610m ²	
	Swimming pool	%20					
	Total service area :					2340m ²	
	Palm grove	%30					
Total service area :					3 510m ²		
Outdoor service unit	Parking	Clients parking	12,50m ²	110	1375m ²	3/1	
		Users parking	12,50m ²	12	150m ²		
	Total service area :					1 525m ²	
Total exterior area :					7 985m²		

Conclusion

Our project case study focused on the functional integration between the most important sectors, that are: accommodation service, well-being service and the different leisure activities.

On the other hand, from the concept case study we discovered the role and the efficiency of ecotourism in these types of projects, and in the environment in general, through different strategies, waste management, energy reduction and production.

We eventually proposed a project program and set the project's area (11700m²) also exterior spaces: (7985m²) according to the site case study shortages.

Based on documentary research and following up to the several analyses of the case studies established and the proposed program, it was concluded that we must take into consideration the integration of the project in its urban environment and achieve a good project accessibility and attraction through outdoor units and concentrate on preserving, conserving, and exploiting the existing natural resources, and minimizing the environmental impacts.

The functional component and the spatial quality of the project should also not be disregarded since the projects is intended to receive tourists and the general public.

Chapter Three: Conceptual Approach

Introduction:

In this chapter, we take into consideration the outputs of the architectural and urban studies of the previously chosen tourist resorts, as well as the conclusion retained from the site case study and certain ecotourism design approaches in our design process.

However, in this chapter, we relied on a list of all the objectives and determinations that allowed us to structure the passage elements, then we illustrated the conceptual idea, the form genesis, and the main elements related to the theme and how we attempted to make the correlation of it with the project and integrate it into the design process, next we provide a description of the project's components that will be eventually projected.

Finally, we will present the project's graphic documents and perspective views (ground plan, the various organization plans, elevations, section, etc.)

I. Objectives and Determinations:

I.1 Preservation of the Natural Resources of the site:

- Integrate the existing stream into the project's design and using it for wastewater management.
- Adapting the existing palm grove as an oasis quality life model (environmentally, economically, sociocultural) in the project conception.
- The use of locally sustainable materials.

I.2 Sustainability Awareness:

- Creation of comfortable leisure and relaxation areas and improve the friendly thermal atmosphere in the oasis environment.
- Adapting an energy management system.

I.3 Preservation of cultural heritage:

- Involvement of the local population in the project (palm cultivation).
- Traditional places should be embedded into the project's program.
- The use of traditional architecture elements.

II. Passage elements:

II.1 Related to the site case study:

- a. The plot benefits of a stream running through it, that we must preserve.

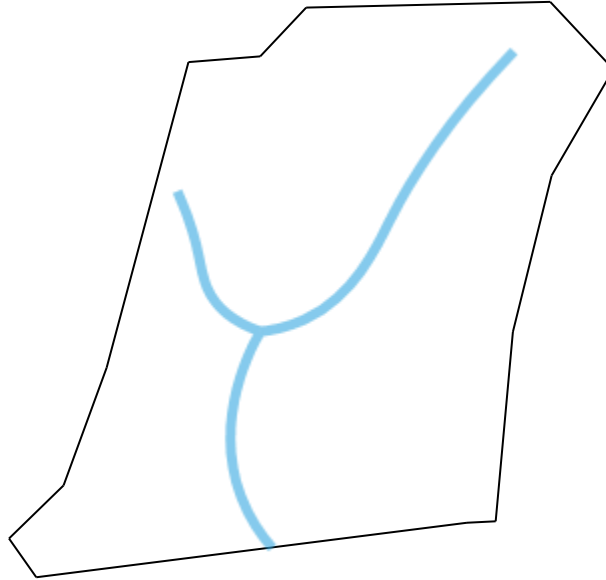


Diagram N° 12: Stream position in the plot.

Source: Author, 2021.

- b. Site not shielded from Hot Winds, the necessity of a well-designed landscape to protect the plot.

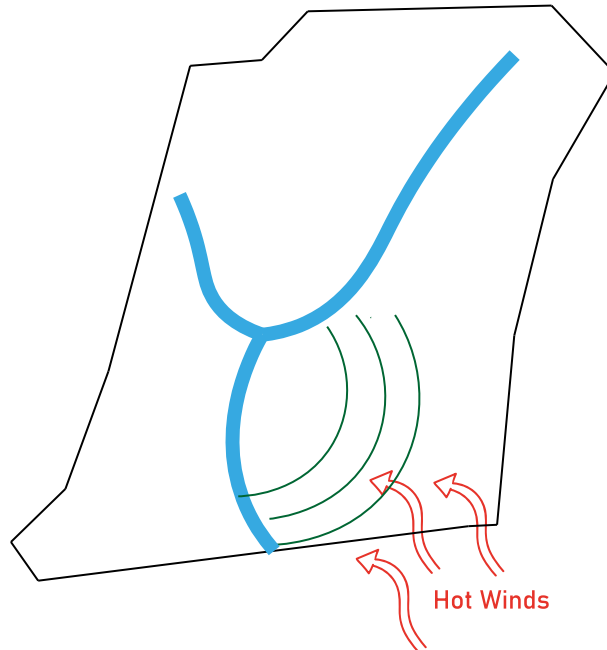


Diagram N° 14: Hot Winds Orientation.

Source: Author, 2021.

c. The main old village components.

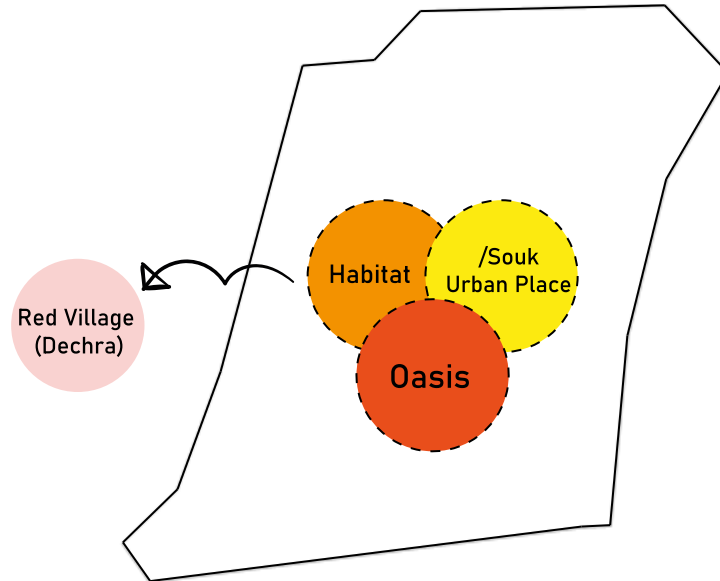


Diagram N° 15: Red Village principal components.

Source: Author,2021.

II.2 Related to the Project's Case Study:

a. Hierarchy:

From the project's case study, we concluded three hierarchy classification, the first one is Private, where we can find parking, urban places, second, Semipublic, where we can find different activities units, like Spa and Hammam, Pools, Cafeteria, and third one is Private where we can find the accommodation sector.

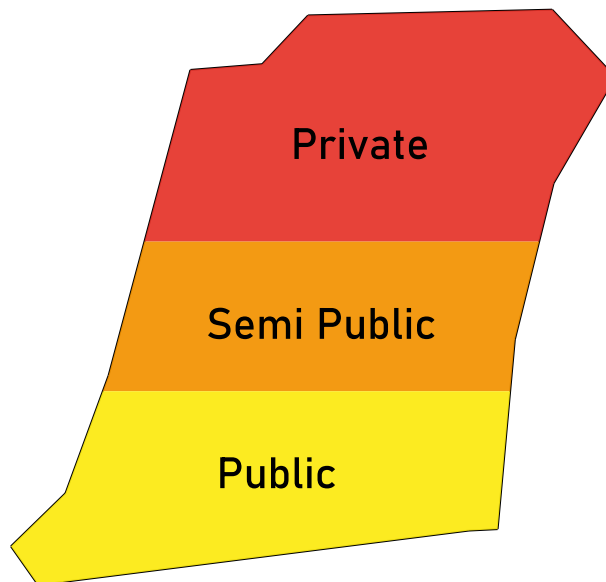


Diagram N° 17: Project's Hierarchy Classification.

Source: Author,2021.

b. Organigram:

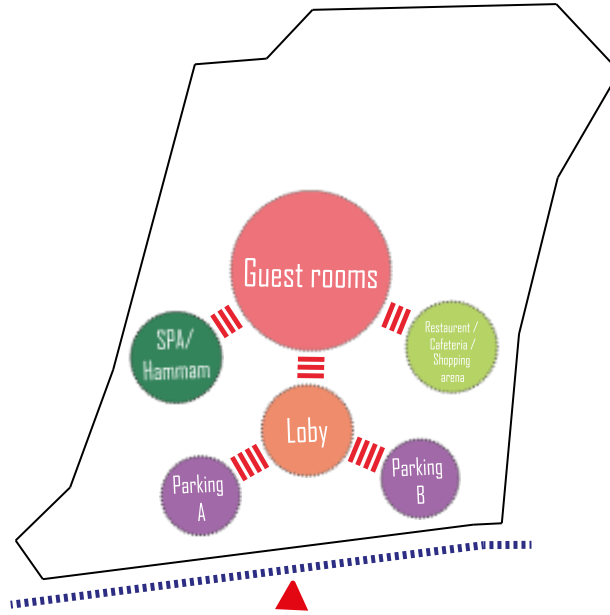


Diagram N° 18: Project's Spatial Organigram.

Source: Author,2021.

III. Conceptual Idea:

Projecting the three main sectors of our project: Oasis, Accommodation, Activities:

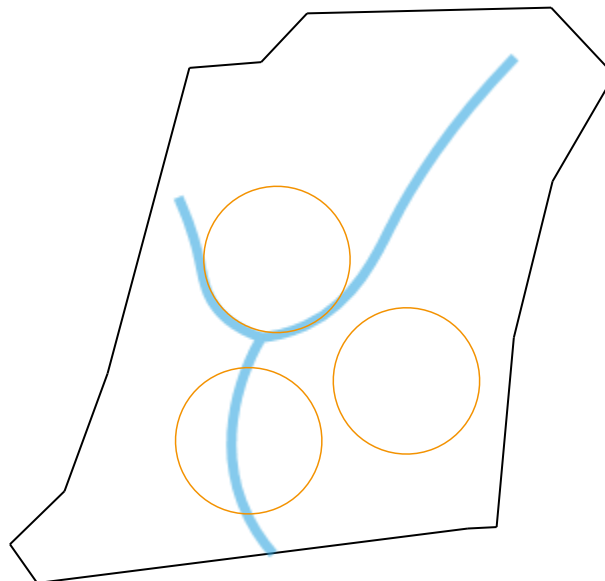


Diagram N° 19: Conceptual processes 1.

Source: Author,2021.

The design relies on the concept of the water fluidity, a continuous and ongoing flow of lines in varied dimensions to create more experiential journeys.

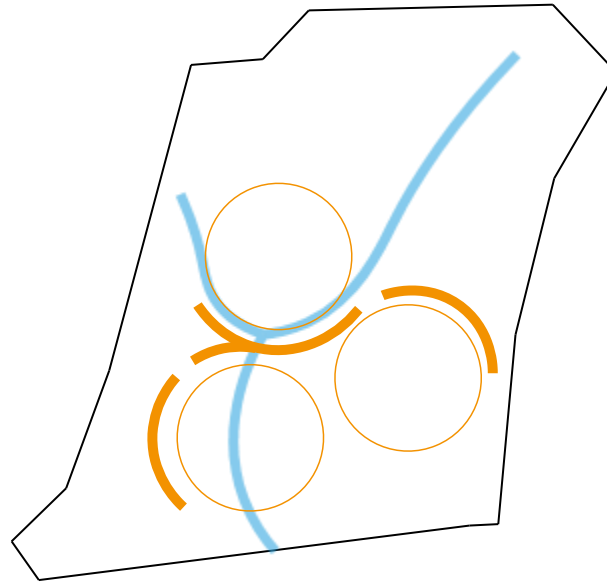


Diagram N° 20: Conceptual Processes 2.

Source : Author,2021.

And for the accommodation sector we applied a grid system based on the palm trees implantation

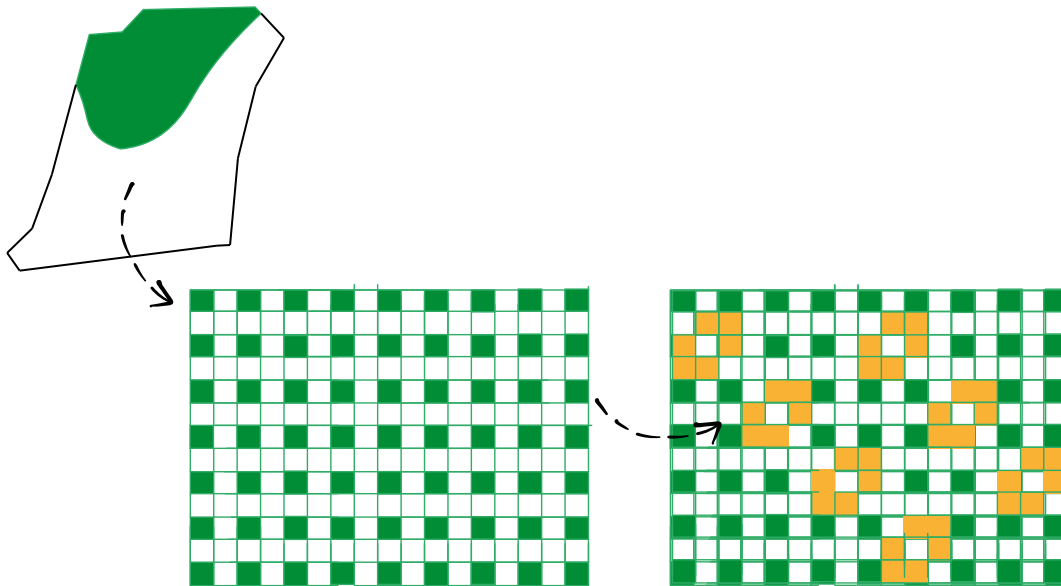


Diagram N° 21: Conceptual Process 3.

Source: Author,2021.

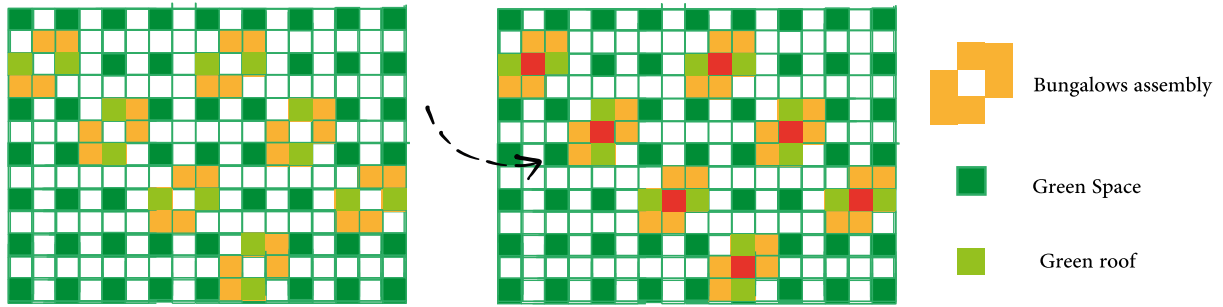


Diagram N° 22: Conceptual Process 4.

Source: Author,2021.

This implementation has allowed us to:

- Create at first a microclimate that helps in cooling the local atmosphere by implementing trees and water bodies.
- Create a central space (semiprivate) that serves as a meeting space.
- Create vegetal terraces by respecting the conceptual grid.



Figure N° 44: Bungalows Assembly.

Source: Author,2021.

IV. Theme's Applications in the Project:

IV.1 Sustainable Natural Resources Conservation:

Sustainable natural resources conservation is a process of rational use and skillful management and preservation of the natural environment with all its resource.

IV.1.1 IV.1.1 Water:

Preservation and treatment of the existing water of the site and exploiting it into water spaces such as Basins and Pools.

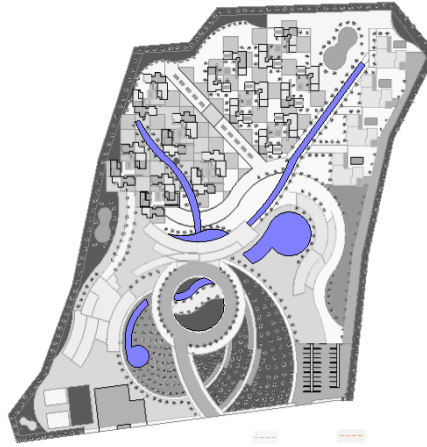


Figure N° 45: Project's Masterplan Sketch.

Source: Author, 2021.

IV.1.2 IV.1.2 Immediate Environment:

- Harmonious relationship of the building with its immediate environment.
- Use of the opportunities offered by the neighborhood and the site (Date palms and the stream).
- Management of the advantages and disadvantages of the site.



Figure N° 46: Site Immediate Environment.

Source: Author, 2021.

IV.2 Density:

It is one of the most important methods, and it was used in our project by various elements:

- Building shape and compactness.

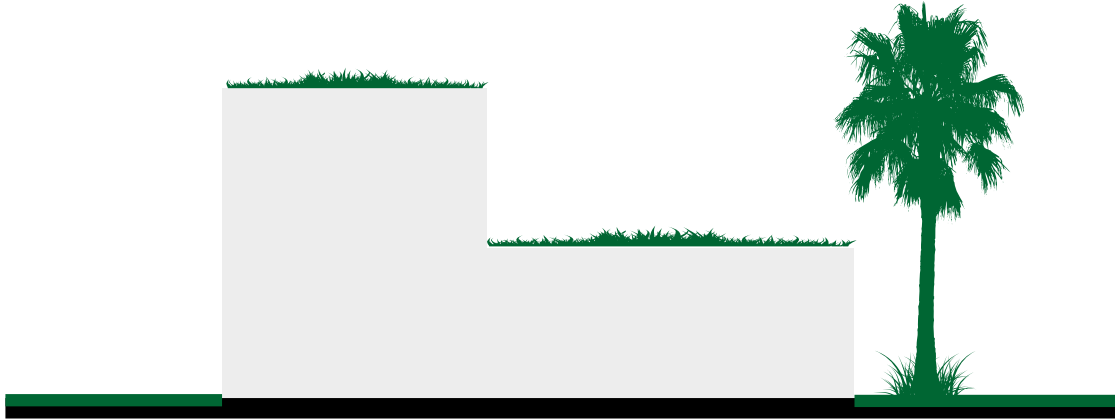


Figure N° 47: Building Shape.

Source: Author, 2021.

- Rational and balanced land use



Figure N° 48: Bungalows Masterplan.

Source: Author, 2021.

- Green surfaces: (minimizes the surface exposed to the sun)

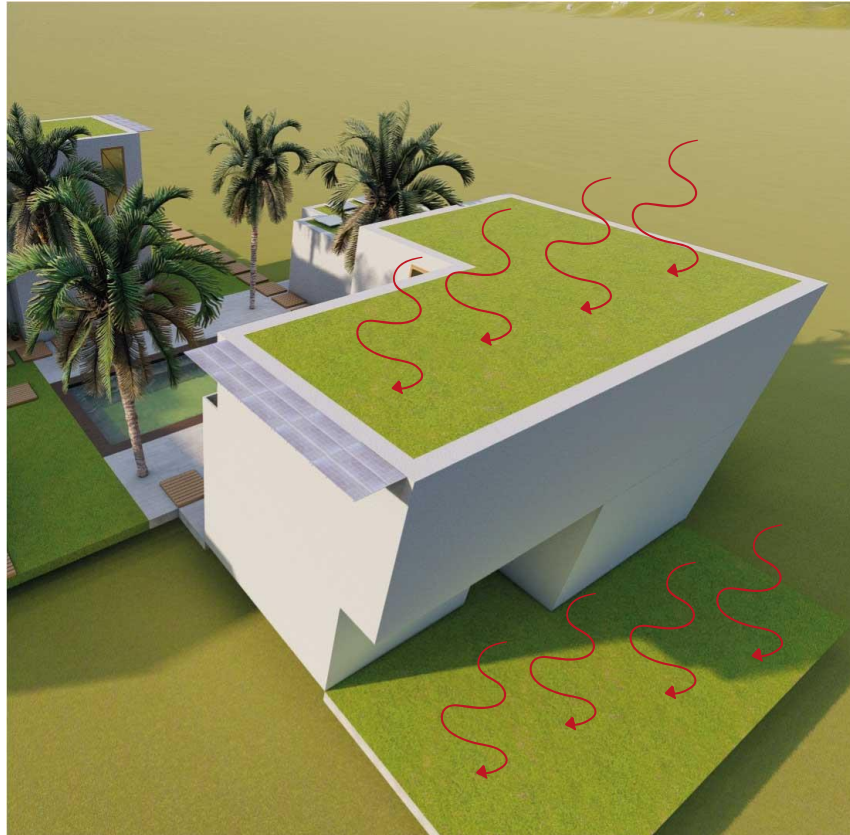


Figure N° 49: Radiation Reflection on green surfaces.

Source: Author, 2021.

IV.3 Eco-management:

IV.3.1 Renewable energy management:

Electricity is produced from sunlight using photovoltaic installations.

Solar collectors are used to produce domestic hot water. This process can also allow heating.

We implanted the photovoltaic panels and the solar panels in the roof of the building, connected to the storage system by solar cables.

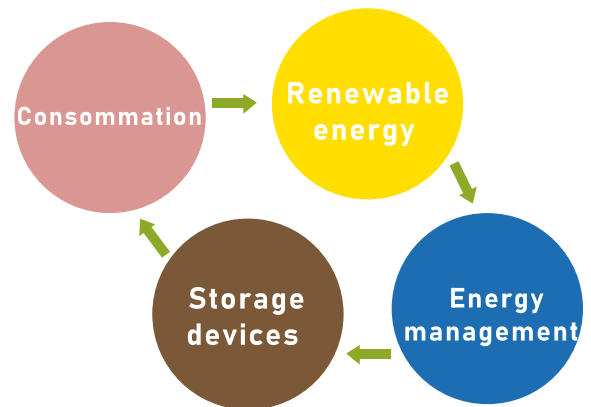


Diagram N° 23: Renewable Energy Cycle.

Source: Author, 2021.

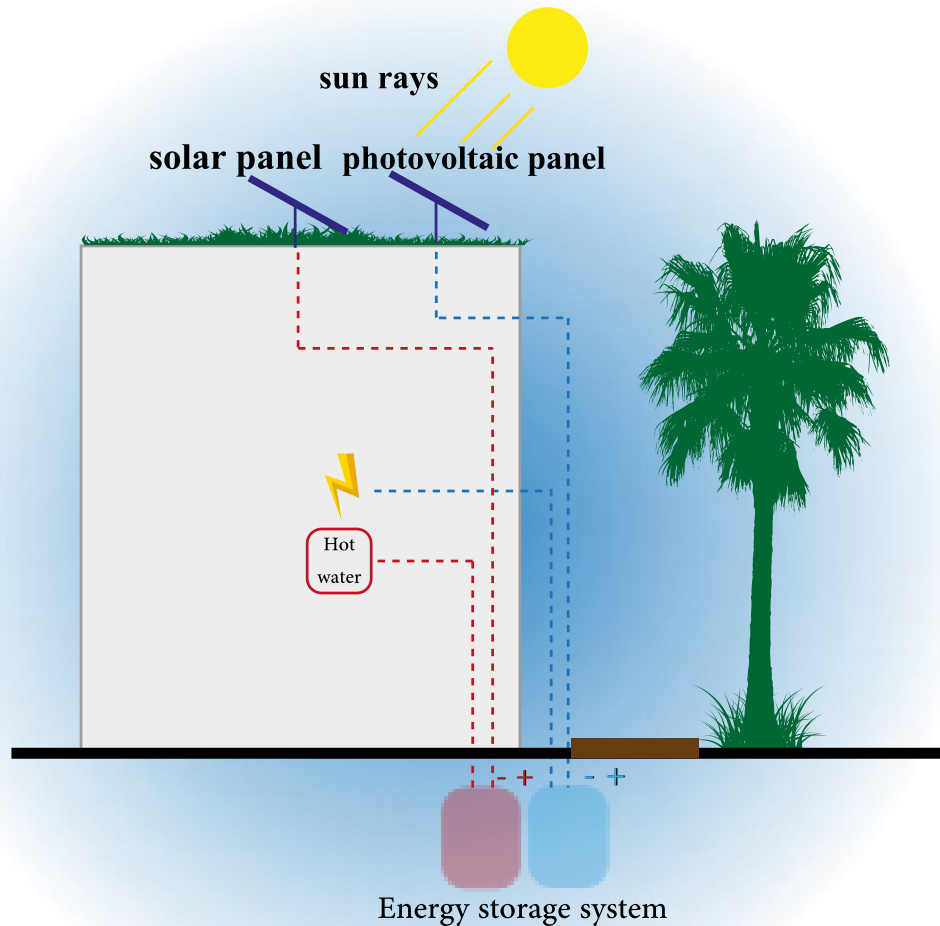


Diagram N° 24: Renewable energy systems used on the project.

Source: Author, 2021.

IV.3.2 Wastewater Management:

Wastewater treatment is a process used to remove contaminants from wastewater and convert it into an effluent that can be returned to the water cycle.

The processes involved in wastewater treatment include physical processes such as settlement or flotation and bio-films in trickling filters. Other physical methods such as filtration through sieves may be used in specialized circumstances such as de-watering waste-water sludge.

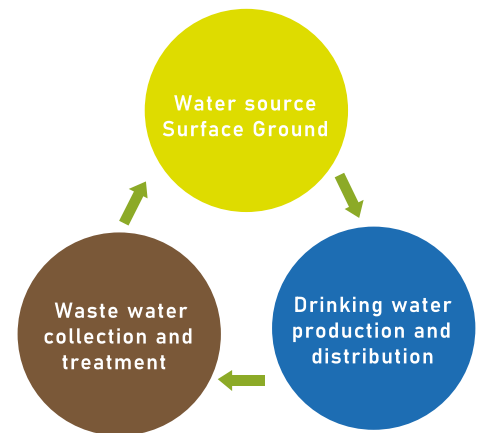


Diagram N° 25: Wastewater Cycle.

Source: Author, 2021.

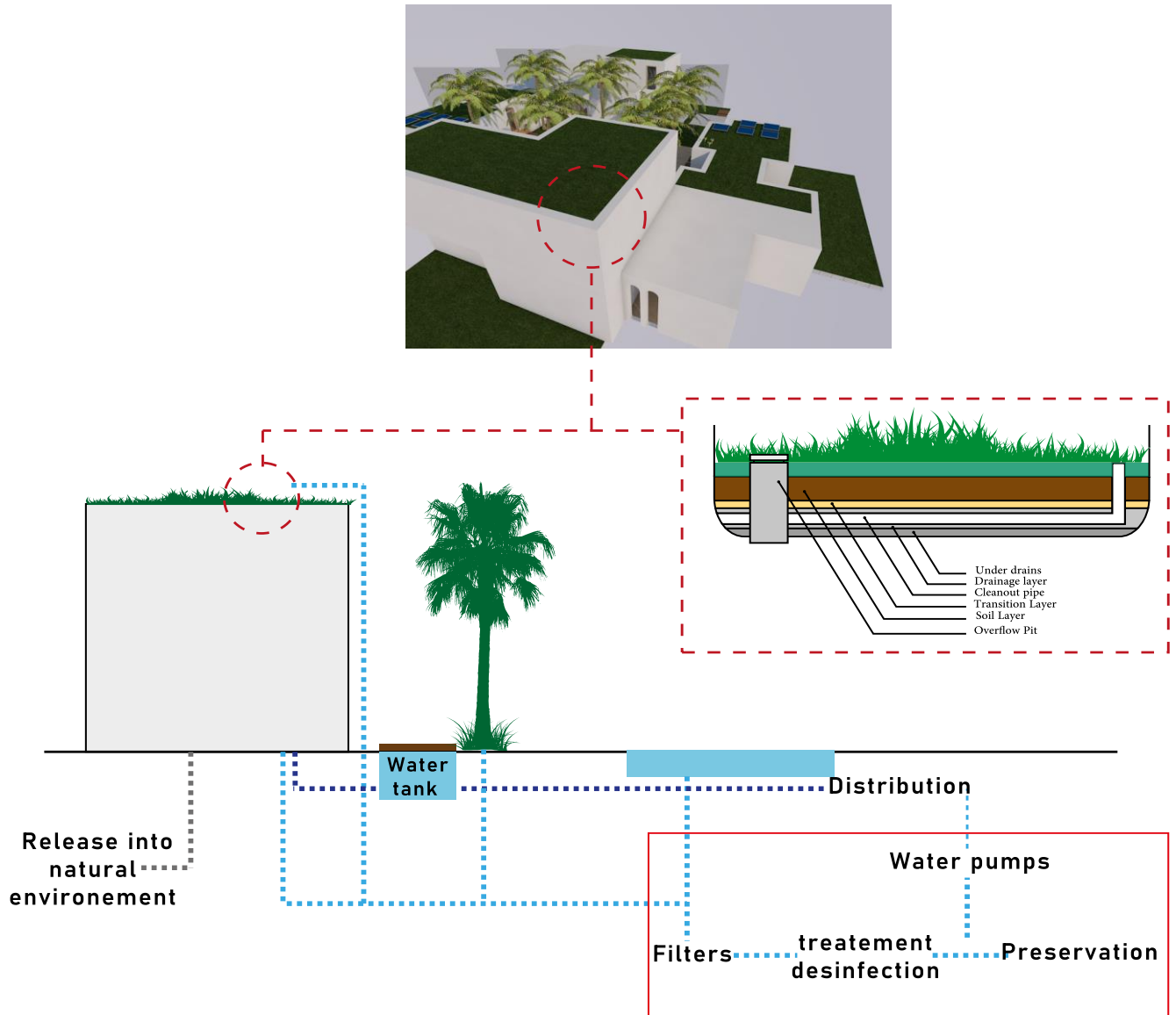


Diagram N° 26: Wastewater Treatment in the project.

Source: Author, 2021.

IV.4 Oasis Effect:

Creating microclimates by surrounding wetlands with two to three vegetation levels. Frequently, date palms as the first level and fruits tree as the second level to reduce temperatures and increase relative humidity rate, and using it as a greenbelt in the south-west, protecting the project from hot winds.



Figure N° 50: Oasis Masterplan Design.

Source: Author, 2021.



Figure N° 51: Project's Exterior View.

Source: Author, 2021.

V. Graphic Presentation:

V.1 Situation Plan:

The project is situated along the touristic road, near to the red city and roman ruins, an open air museum that makes the project attractive.

It surrounds date groves and the river 'Oued Al Hay' and far from urban activities.

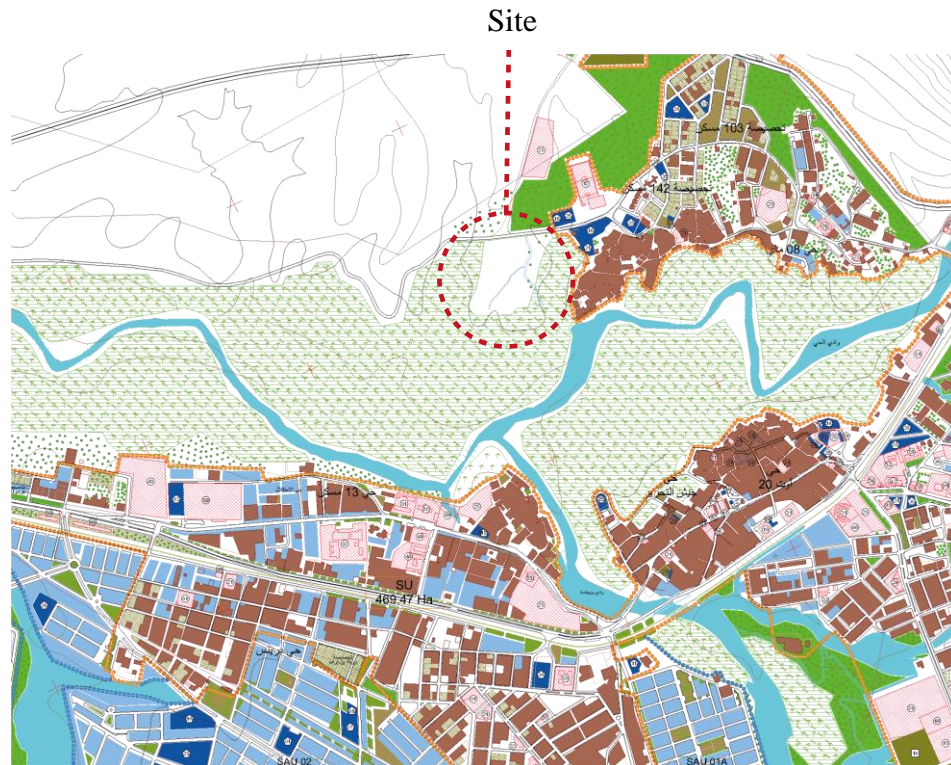


Figure N° 52 : Situation Plan 1/10000

Source: Author, 2021.

V.2 Masterplan:

The Tourist Resort covers 4.5 hectares and is divided into two major sections based on privacy hierarchy. The first section (Public) contains the various activities, while the second section (Private) contains the different accommodation types.

The project has a main principal entry that leads to the lobby for registrations, two main parkings, one for the thermal complex and the other for the accommodation, and two urban meeting places, one in the project's entry with an oasis landscape and the other between the guestrooms.



Figure N° 53: Master Plan 1/500

Source: Author, 2021.

There are multiple outdoor spaces in the project, that serves as leisure and meeting spaces suitable for a wide variety of activities, active and quiet.

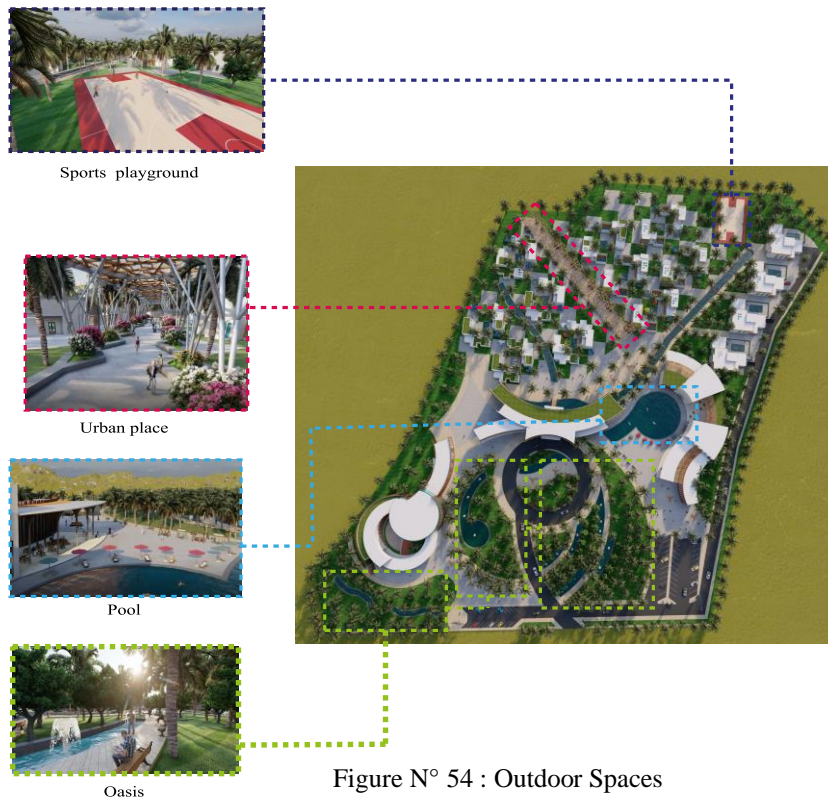


Figure N° 54 : Outdoor Spaces

Source: Author, 2021.

V.3 Plans:

V.3.1 Accommodation :

V.3.1.1 Deluxe Suit:

We have two sorts of deluxe suits, each one covers an area of 75m², the first one has only one level, the living room, the kitchenette, and the bedrooms all connected horizontally with the lobby in a linear organization.

The second one has two levels, where we find the private spaces in the first level connected with the ground level by the stairs.

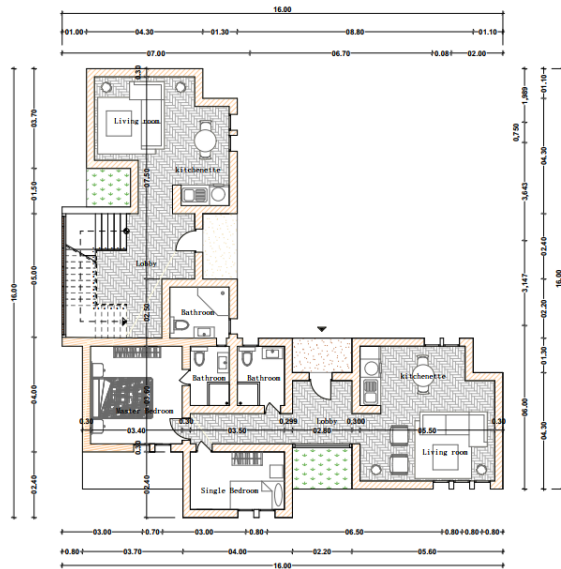


Figure N° 55: Deluxe Suit Ground Level 1/100

Source: Author, 2021.

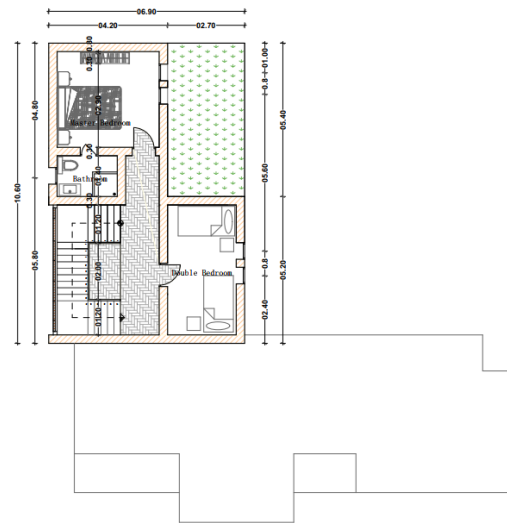


Figure N° 56: Deluxe Suit First Level 1/100

Source: Author, 2021.

V.3.1.2 Villa:

This type covers an area of 120m², with two levels, larger and additional rooms than the previous type and with outdoor spaces like the pool and the green terraces.

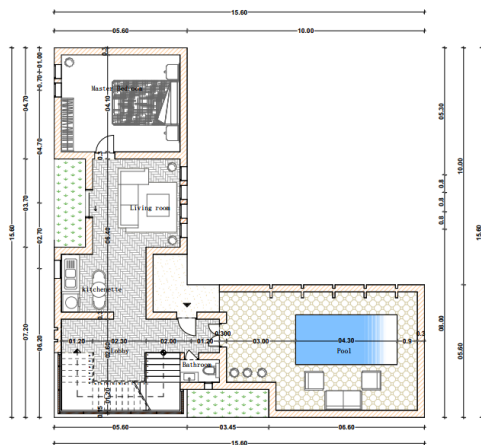


Figure N° 57: Villa Ground Floor 1/100

Source: Author, 2021.

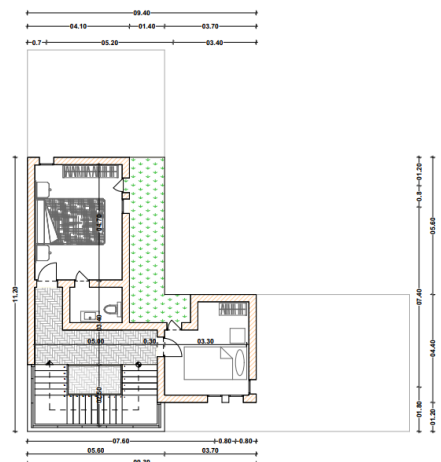


Figure N° 58: Villa First Level 1/100

Source: Author, 2021.

V.3.1.3 Vip Pavillion:

This type covers an area of 190m², with two levels and with larger and additional rooms than the villa, like double rooms and double master bedrooms.

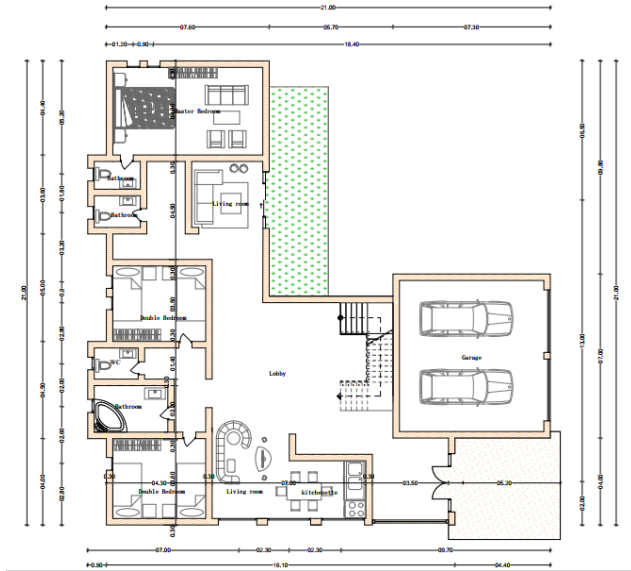


Figure N° 59: Vip Pavillion Ground Level 1/100

Source: Author, 2021.

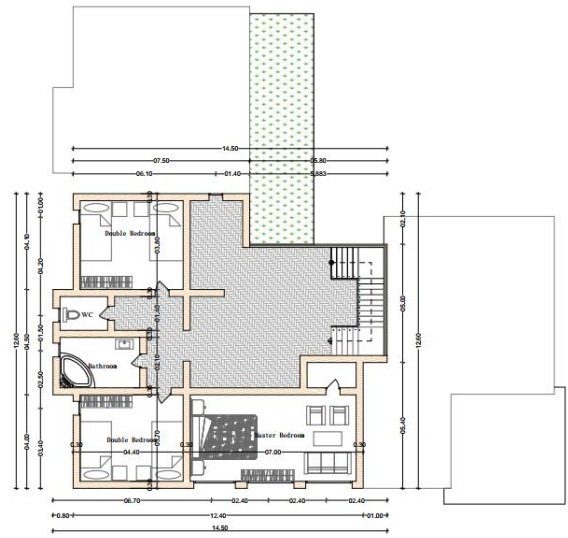


Figure N° 60: Vip Pavillion First Level 1/100

Source: Author, 2021.

V.3.2 Thermal Complex:

V.4 Sections:

The structural system is constituted from Bricks bearing walls, this system has been chosen due to familiarity, ease of manufacture, and also do not require high skills. Produced from moulded clay and hardened by firing, it is both energy intensive and high in CO2 emission.

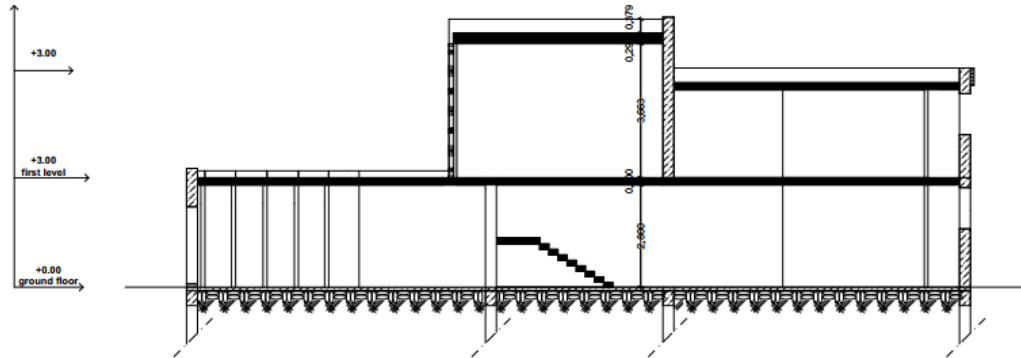


Figure N° 63: Deluxe Suite Section 1/100

Source: Author, 2021

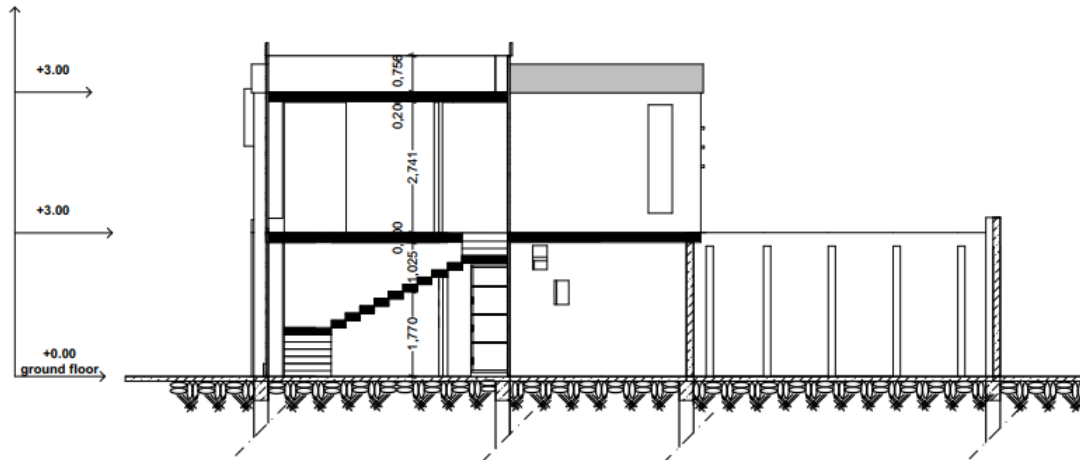


Figure N° 64: Villa Section 1/100

Source: Author, 2021.

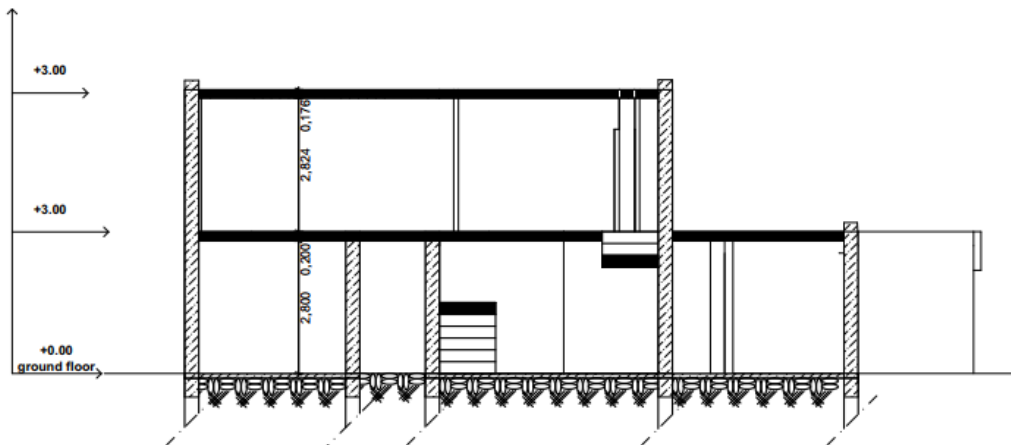


Figure N° 65: Vip Pavillon Section 1/100

Source: Author, 2021.

V.5 Elevations:

The elevations are designed with a combination between traditional and modern Arabic Architecture concept, by using arcs and Moucharabieh, and taking in consideration the hot climate in the conception by reducing the open surfaces of the elevation and using the Moucharabieh as a protection from solar radiation.



Figure N° 66: Deluxe Suit South Elevation

Source: Author, 2021.



Figure N° 67: Villa North Elevation

Source: Author, 2021.



Figure N° 68: Vip Pavillion East Elevation

Source: Author, 2021.



Figure N° 69: Vip Pavillion West Elevation

Source: Author, 2021.

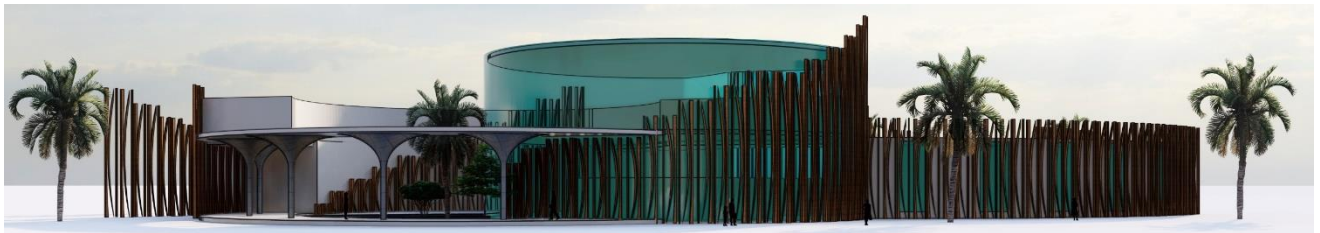


Figure N° 70: Thermal Complex North Elevation

Source: Author, 2021.



Figure N°71: Thermal Complex East Elevation

Source: Author, 2021.



Figure N° 72: Thermal Complex South Elevation

Source: Author, 2021.



Figure N° 73: Urban East Elevation

Source: Author, 2021.



Figure N° 74: Urban Principal Elevation

Source: Author, 2021.

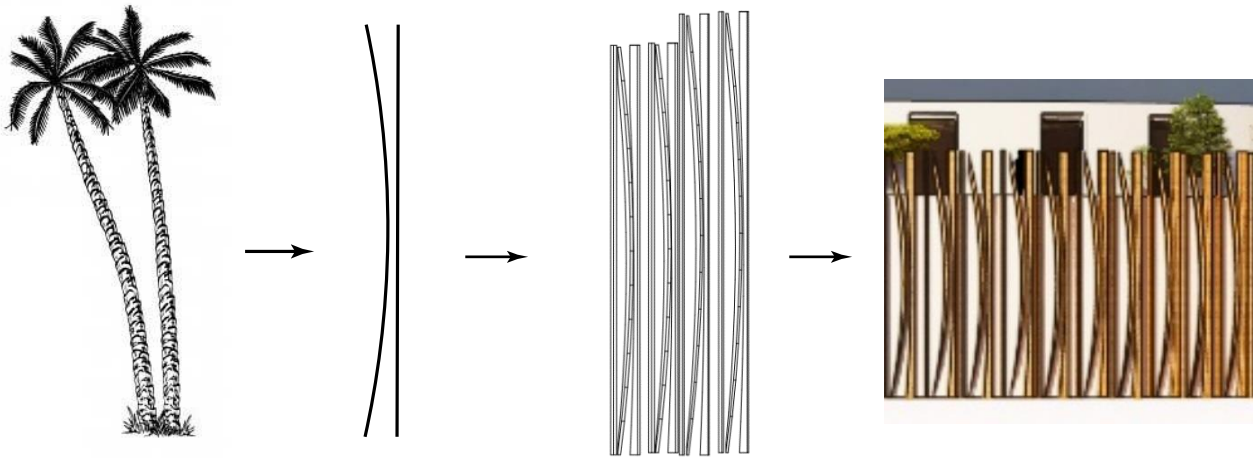


Figure N° 75: Elevation Envelope Conceptual Idea

Source: Author, 2021.

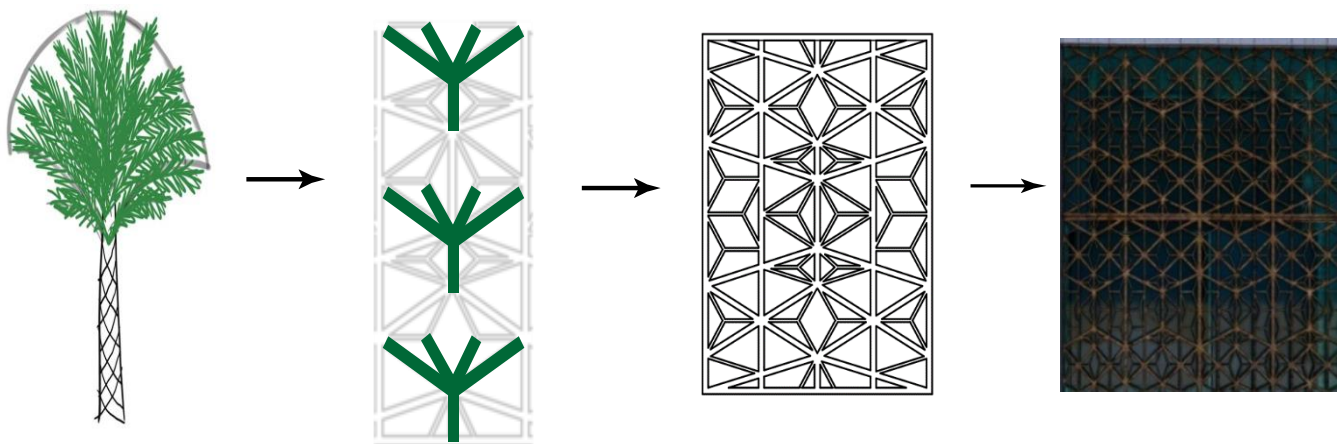


Figure N° 76: Moucharabieh and Pergola Conceptual Idea

Source: Author, 2021.

V.6 Outdoor Views:

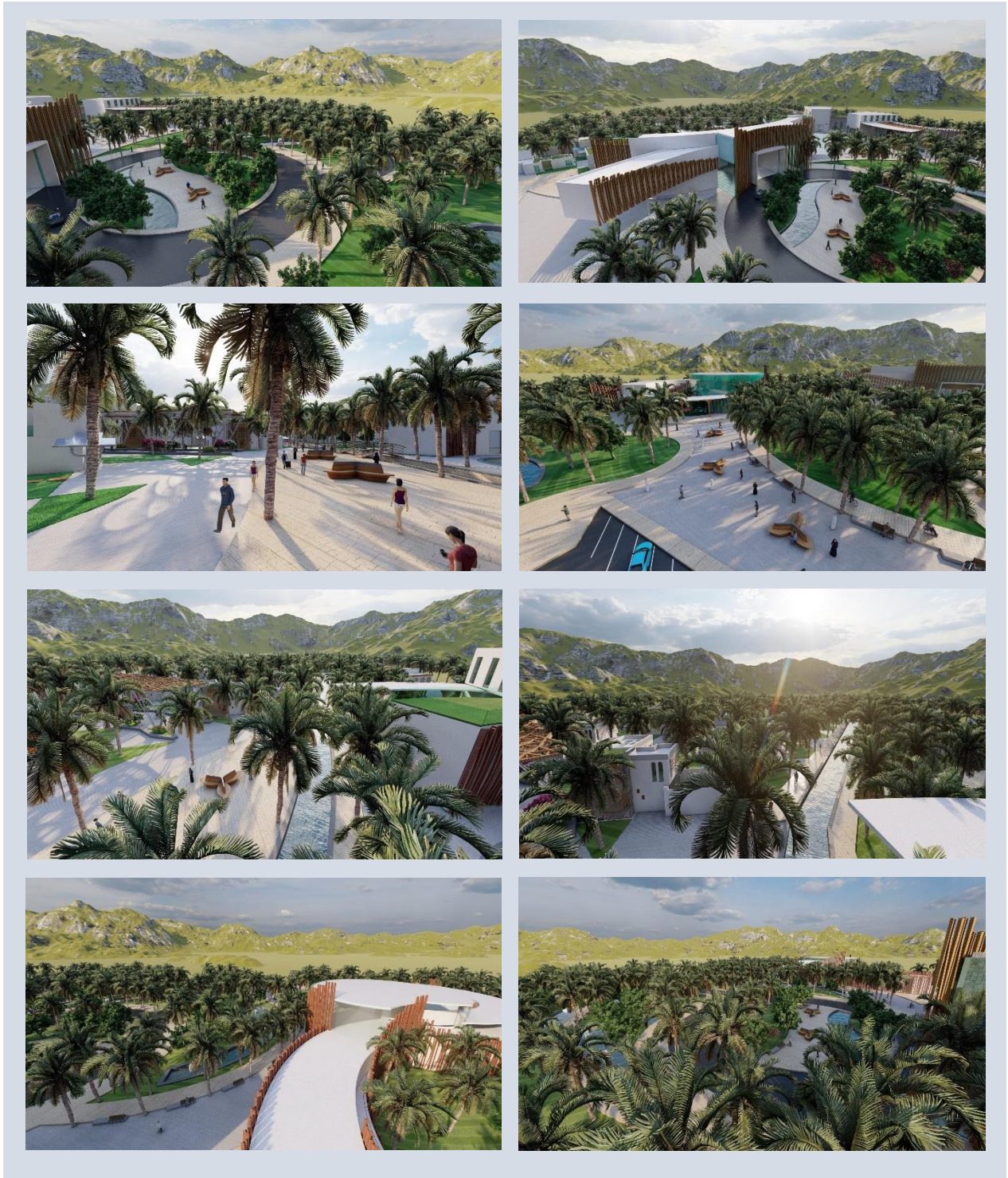


Figure N° 77: Outdoor Views 1

Source: Author,2021.



Figure N° 78: Outdoor Views 2

Source: Author,2021.



Figure N° 79: Outdoor Views 3

Source: Author,2021.



Figure N° 80: Outdoor Views 4

Source: Author,2021.



Figure N° 81: Outdoor Views 5

Source: Author,2021.

Conclusion

In this chapter, we have embodied the previously established goals through the determinations and intentions that we adopted based on the knowledge basis associated with the studies of the first chapter and the analyzes of the second chapter that touch on all stages of the previous studies, where we relied on developing the design idea and supporting it by applying the study concept into the design.

We took advantage of the existing water stream of the plot to develop the conceptual idea of most of the project's facilities adopting the fluidity concept, and the palm tree implantation grid for the different accommodation types, and with the respect to the project's standards, we reached the final design of the project, and we illustrated some of the theme's applications in the project to achieve our study aim.

Lastly, we presented the project's different plans, from urban to architectural scale, sections and elevations, and the exterior views.

General Conclusion

Our Master dissertation is focused on the study and design of an Oasis Tourist Resort located in Biskra, specifically in the city of Al Kantara, close the Red Village, a local oasis settlement. The project is around 12,000 square meters and has a capacity of 300 beds.

To accomplish the goal of this study, we began by introducing the oasis and its role in the creation of a well-being environment, and how it's currently in risk of desperation due to natural factors and human activities, as well as the importance of tourism in local development without its negative effects, which led to the need for an ecological approach to preserve these ecosystems, So, what ecological- strategies should be provided to design a tourist projects that respects the oasis components?

To answer this question, we set the following objectives:

- Definition of the real meaning of Eco-tourism and its relationships with oases lands.
- Elaboration of design's scale for the tourism projects following an ecological approach.
- Proposition of a program for a Tourist Resort project that respects the oasis components.

Then we adopted a methodology based on two approaches:

- **Theoretical Approach:** The processes of defining basic concepts present in the study's subject in the aim to get a theoretical basis that we will need in the next approach, we first focused on the oasis and its components, and its environmental impacts, and second on ecotourism and its principles, third we highlighted the project, and mentioned its most important requirements.
- **Analytical Approach:** The processes of studying a various built and virtual projects first related to the project to conclude the functional integration between the most important sectors, and second related to the subject to identify the various strategies of ecotourism used in the different projects and last the site case study to identify its strengths and weaknesses, we eventually proposed the project's program divided into two main units, Indoor units, such as accommodation, hotel, Spa, and Outdoor units, the swimming pool, the vast palm grove, and the sports playground.

After developing a theoretical basis and setting the project's program, we were able to begin the design process, starting first by identifying the determinations and intentions, and second illustrating the passage elements related to the case studies and to the site study and the project's requirements, our conceptual idea focus on the preservation of the natural resources offered by the area, which is the first and most important ecotourism principle, using the fluidity concept along the water stream, and the palm implantation grid, ensuring outdoor leisure, relaxation and enjoyment spaces, in addition to climatic comfort while minimalizing physical impacts through energy management systems, and build environmental and cultural awareness and respect involving the local community.

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Abstract:

Lately, Desert and Oasis tourism are becoming increasingly popular vacation destinations during the cold winter months, their growing popularity is accompanied by a pressing need for ensuring these areas natural balance sustainability.

The primary goal of this study is to define the concept of Ecotourism, its impact and principles, and integrate it into the oasis environment in order to preserve and protect this cultural heritage through the design of a tourist resort that mainly preserves the natural resources offered by the region and exploits them for various amazing ecotourist activities in order to promote oasis tourism without any negative effects, as well as benefiting the local community.

The design of an ecotourist resort project must be based on a study funded by four dimensions, the site and its constraints, the program and its requirements, architectural and technical references, and the environmental aspect.

Key words: Oasis, Ecotourism, Sustainability, Natural Resources, Tourist Resort.

Résumé:

Ces derniers temps, le tourisme du désert et de l'oasis devient de plus en plus une destination de vacances populaires pendant la période hivernale de l'année, sa popularité croissante s'accompagne avec un besoin pressant d'assurer la durabilité de l'équilibre naturel de ces zones.

L'objectif principal de cette étude est de définir le concept d'écotourisme, son impact et ses principes, et de l'intégrer dans le milieu oasien afin de préserver et protéger ce patrimoine culturel à travers la conception d'un complexe touristique qui préserve principalement les ressources naturelles offertes par la région et les exploite pour des diverses activités écotouristiques afin de promouvoir le tourisme oasien sans aucun effet négatif ni préjudice, tout en faisant bénéficier la communauté locale de ses retombées économiques.

La conception d'un projet de complexe touristique doit s'appuyer sur une étude basée sur quatre dimensions, le site et ses contraintes, le programme et ses exigences, les références architecturales et techniques, et l'aspect environnemental.

Mots clés: Oasis, Ecotourisme, Durabilité, Ressources naturelles, Complexe touristique.

