

Chapter 6

Phenomenology Theories' Influence on Preservation of Ecological Parks

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Introduction:

Ecological reserves are places chosen to preserve unique and representative natural ecosystems and plant and animal species, traits, and phenomena. Occasionally, numerous ecologists and landscape architects believe that integrating phenomenological theories into contemporary design concepts will result in original ecological design. When it comes to environmental reserve parks, countless voices call for thorough care. Dohat Arad is an ecological reserve in Bahrain full of mangroves, swans, Nawras, and different types of emigrant birds. Despite this, Bahrain's 2030 strategic plan highlighted the significance of a design-friendly environment aligned with preserved areas. As it is known, one of Bahrain's directions is sustainable development for the overall community, which is also applicable to individuals in terms of culture and environmental knowledge. Therefore, it is an original goal to attract people to the issue of ecological reserves and educate them to come with experience and take root. In the minds, striving for this requires attracting the public to the resources through their public facilities and attractive places. It includes natural landscapes and areas designated for sports and suitable spots for hiking and gathering.

Studying the landscape architecture design elements should examine the significant considerations in designing and selecting materials respecting the pillars of sustainability: Social, Economic, Environmental, Political, and Cultural:

- a. Environment Frame:
 - Practicality and Performance: humidity resistance, durability.
 - Climate: weather control by shading, increasing humidity.
 - Site considerations: typography, unique features.
 - Special applications and needs unusually demanding functional requirements.
- b. Social Frame: suitability
 - Visual appearance: pattern, profile, texture, color.
 - Culture: privacy, beliefs and Background, history.
- c. Economic and Engineering Frame: that affects project
 - Feasibility: budget drives decision-making, lifespan, and maintenance.
 - Technological aspects: lighting, water features.
 - Practicality and Performance: acoustics, fire resistance, humidity resistance, durability.
 - Suitability for its function.

However, as a pilot study, Dohat Arad, an ecological reserve in Bahrain, is a suitable witness; it has deteriorated in the last few years to be ideal as a reserve for "(mangrove)" plants. It is found that there are differences of opinion between design and application. Unfortunately, the improper landscape architecture design for Dohat Arad, which did not consider the ecological dimension in its design, increased the problem and became severe.

The study speaks to the engagement of phenomenological hypotheses using contemporary design ideas to build monetary, social, and metropolitan experiences for parks. Therefore, this study aims to contribute to the Phenomenology theories' in succeeding in preserving Dohat Arad via using landscape architectural design

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How to Cite This Chapter:

Ehab, O. & Elghonaimy, I. H. (2023). Phenomenology Theories' Influence on Preservation of Ecological Parks. In H. A. Nia & R. Rahbarianyazd (Eds.), *Convergence of Contemporary Thought in Architecture, Urbanism, and Heritage Studies*, (pp. 70-83) Cinius Yayınları. <https://doi.org/10.38027/ICCAUA2023EN0047>

elements. In addition, utilizing the unique location of Bahrain Airport and many areas which stimulate and attract tourism to it make it suitable to be an environmental reserve par excellence which will attract different types of visitors.

The primary site inventory for the design and the facilities of Dohat Arad comprehensively screened its conditions. It was recognized that the used materials were not sustainable or ecological and did not match the characteristics of the preservation areas. In general, it indicated that the design and the used materials needed renovation and replacement to suit its features as an environmental reserve. Moreover, the service crew must train and apply skilled teamwork to be qualified and familiar with such preserve areas.

However, this study will discuss the causes and factors that deteriorate Dohat Arad. Furthermore, it made them unsuitable for the protection of these plants, and will review the solutions from the scientific and architectural points of view of these cases. It should be noted that improving the preserve area will encourage the public and tourists to go to it due to its proximity to many important areas. So, the most critical questions that will be tackled in the study are as follows:

- a. What is missing in the Dohat Arad design?
- b. How do sustainable environmental reserves work? Furthermore, how can Dohat Arad be rehabilitated for this matter?
- c. What is the challenge for achieving this study' aims?

Material and Methods:

Ecological reserve

The establishment of ecological reserves is necessary to preserve biological variety. They provide outdoor laboratories and classrooms for studies on the natural environment and aid in developing and promoting environmental consciousness. Environmental changes can be measured concerning ecological reserves. Today's scientists cannot predict some topics that will require an inquiry into entire ecosystems because many ecological processes still need to be better understood. Ecological reserves give us future flexibility. A network of ecological reserves is a "genetic data bank" that could provide the key to new ecological, agricultural, medical, and forestry discoveries. The preservation of biological diversity and the safeguarding of genetic resources are benefits of ecological reserves. Ecological reserves are mainly used for appropriate research and teaching purposes. They should not be mistaken for parks or other recreational spaces because they were not designed for outdoor enjoyment (Nia, H. A., & Suleiman, Y. H., 2018). However, most ecological reserves are accessible to the general public for non-consumptive, observational usage. From another perspective, it is necessary to have breathing space between its significant components (Dalia H. Eldardiry, Usama Konbr, 2022). Moreover, the issue is always when designers seek to make perfect sense for practicing reserve areas and various preserving the natural environment activities. It implements when providing the users of reserve areas with a design appropriate for the ecological dimension in such space. This secure space is usable throughout the day to attract visitors to use such sites and feel the significance of preserving them, encouraging them to practice more than observe (Zhang, 2017).

Cutting down trees, using motorized vehicles, mining, hunting, fishing, domestic grazing, lighting fires, and removing objects, plants, or animals are all prohibited in ecological reserves. Most ecological reserves allow visitors to utilize them for non-destructive observational activities like photography, wildlife viewing, bird watching, and environmental appreciation. It is requested that visitors help maintain these locations. Seabird breeding colonies are one example of a location that is so delicate that access is only permitted by ministerial order (Reid, n.d.). The main applications of ecological reserves are scientific study and educational purposes (Akamina). The ecological reserves are established for the following:

- a. Safeguarding rare and threatened flora and animals in their natural habitats.
- b. Preserving exceptional, unusual, or noteworthy zoological, geological, or botanical phenomena.
- c. Maintenance of vital genetic resources.

Phenomenology theories

Phenomenology is a philosophical movement that dates to the 20th century. It is the direct exploration and description of events as consciously experienced, free as feasible from any expectations and presuppositions, and without ideas about their causal explanation. However, the term itself dates at least as far back as the 18th century, when Swiss German philosopher and mathematician Johann Heinrich Lambert used it to describe the component of his theory of knowledge that distinguished truth from illusion and error. The *Phenomenology des Geist* (1807; *Phenomenology of Mind*) by Georg Wilhelm Friedrich Hegel, which charted the progression of the human spirit from purely sensory experience to "absolute knowledge," is primarily responsible for the word's association.

However, the phenomenological movement began in the early 20th century. However, even this new phenomenology came in so many different forms that its treatment is necessary to analyze the topic thoroughly (Sartre, n.d.). It is difficult to identify a common factor for such a movement outside of its shared source, given the range of phenomenologists that have resulted directly or indirectly from the initial work of the German philosopher Edmund Husserl. However, both philosophical and non-philosophical movements experience identical circumstances. The visual experience has become too important in modern designs (Spiegelberg, 2022).

Understanding the theory of phenomena, sustainability pillars, and the physical experiences of visitors give the power to sense the preserve areas and also leads to a sense of space through the five senses; the successful landscape architecture design requires an entire interaction of users with the design for such areas and is based on the sensing of the site successfully (Job, S., 2022). A group of architects who have loosely applied phenomenological principles to architecture has been working on a critique of the importance of visual aspects in architecture. They extend their application and the excessive rationalization of the design process. At the start of the 20th century, philosophical principles were only partially applied to architecture, but as a response, they returned as a strong contender for architectural ideas. It is crucial to offer an alternative approach to wildlife conservation that avoids anthropocentrism and wildlife valuation on an instrumental basis.

Eco-phenomenology

Eco-phenomenology is an important non-anthropocentric alternative to sustainable development in this way since it offers a framework for fundamentally reframing what it means to be wild. The study of "phenomena," or the appearances of things as they appear in our experiences, or the ways we experience something, is the foundation of phenomenology in the philosophical sense since it begins with the meanings that things have in our immediate experiences of them. Traditional phenomenology examines conscious experience from a first-person, subjective perspective (Cruise, 2020). However, Maurice Merleau-Latour's writings on philosophy shifted phenomenology from the first person to something more interchangeable and reversible. He demonstrates that our embodied subjectivity is never solely situated in our physical presence and perception of the world but rather in the non-subjective entwining of ourselves with the natural world.

The application of this phenomenon to Ecological reserves, especially in Dohat Arad is a very prominent matter which seeks to develop and highlight it more clearly. In addition to its unique architectural design, Arad Park is a visual application of philosophy. Through observation, all the architectural, Ecological, and social elements come together in Arad Park. It is an Ecological reserve with a unique architectural character, which will be explained later in this study.

A sensory design element:

Applying the Phenomenology theories in designing many landscape architecture projects affected users' experiences in different manners and measures, changing habits while using spaces and improving the people's sense of places. The use of intelligent devices had a significant contribution to implementing a design following the Phenomenology theories (Husain, 2022). Therefore, nowadays, designers are trying to encourage visitors to go to the preserved areas and understand their values to emphasize keeping the ecology and the natural areas, which helps achieve sustainable projects in the country. They introduce different opportunities to suit the social and sports activities, encouraging visitors to stay longer and enjoy the ecological atmosphere (ABI14). The value of improving such preserved areas increased after COVID-19 people faced this period due to closing places and confinement in homes; it is clear that there is a must take some sites into consideration so that we are ready to face any epidemic and that the site is prepared to receive people even during the epidemic (Sepe, 2021). Therefore, the landscape architecture design for such preserved areas has to be more prepared, healthier, and safer to receive visitors in all circumstances (Eldardiry, D. H., 2021).

Designing parks within preserved areas includes multifunctional areas that encourage visitors for social interaction and inclusion, improve human health and well-being, economic exchange, and cultural expression and dialogue among a wide diversity of people and cultures. Design and management are targeting the improvement of human life and development, building peaceful, inclusive, and participatory societies, and promoting living together, connectivity, and social inclusion (HABITAT, 2016). Moreover, using natural materials in the design of the parks can heavily influence the users' senses and improve the social behaviour in the area, such as forming a path for users to walk within it in a welcoming space that will break the claustrophobic atmosphere within the open spaces (Hussein, 2018). It also counts a prevalent feeling to the area through the colors, textures, shapes can achieve, and furniture, all of that depends on the designers' creativity. Consequently, we can convey that the diversity of the components in preserve areas can be sustained by the flexibility of the design elements (Rahbarianyazd, 2017). In the other way, using artificial materials without deep study in ecological projects causes many problems in general and visual pollution in particular.

These problems deteriorate the preserved areas' image, leading to a lack of sensing of such projects or designing the landscape for specific purposes, which led to Negative impacts and declined the life quality, losing an identity, taste, and sense of residence. (Nia, H. A., & Suleiman, Y. H., 2017). Together, they offer a variety of chances for visitors to interact with and learn about the natural world. Ecological reserves must be managed and protected by the Ministry of Environment. Plans are created to offer the management and protection necessary to maintain the ecological reserve's values over long-term activities.

Dohat Arad

The Arad Bay Park track at Arad Bridge-Muharraq reserve is home to many marine creatures for which an exceptional environment has been created. As this reserve contributes effectively to the marine ecosystem in the Kingdom, it is also a public park suitable for strolling and wandering in the arms of charming nature. It includes a walking path about 3,300 km long and three meters wide (Elghonaimy, 2015). It is surrounded by many urban magnets, such as the Bahrain International Airport, an essential facility closes to it, and regularly receives visitors. Also, one of the essential things is hotels such as the “Movenpick” hotel, which is a destination for many tourists (Elghonaimy, M., 2019). Studying the landscape architecture design elements should examine the significant considerations in designing and selecting materials respecting the pillars of sustainability: Social, Economic, Environmental, Political, and Cultural (Mohamed, F., Mohammed, M., 11-13 May 2022). It has a variety of recreation places, such as children's games, shaded chairs around the lake, a large fountain, a central square, and waterfalls. It has services such as a pressure and diabetes examination building and a place for the ambulance. Moreover, it includes social gathering spaces, restaurants, cafes and shops, a men's and women's chapel, toilets, and parking lots. Six hundred cars were divided into two positions, one located west of Doha and the other east.

Environment Frame:

Man-made environment:

The site topography has a little slope and unique landscape features. Dohat Arad was designated a protected environmental area in 2010 (Eldardiry, November 21-23, 2021). Inventory of the man-made environmental elements will be in terms of colors, textures, shapes can achieve, and furniture. It includes the most extended paved walking pathway in Bahrain. It serves persons of all activity levels and abilities. The pathway offers a beautiful opportunity to perform light sports like walking, running, and even biking in a picturesque environment with breath taking natural surroundings. For the pavement, as shown in Figure 3, most of the pavement area made of cement tiles (interlock) has no pattern or division for pedestrians, running or even sitting. The walking part includes a sitting to give the users places to rest while walking. Most of them have no canopy (not shaded).

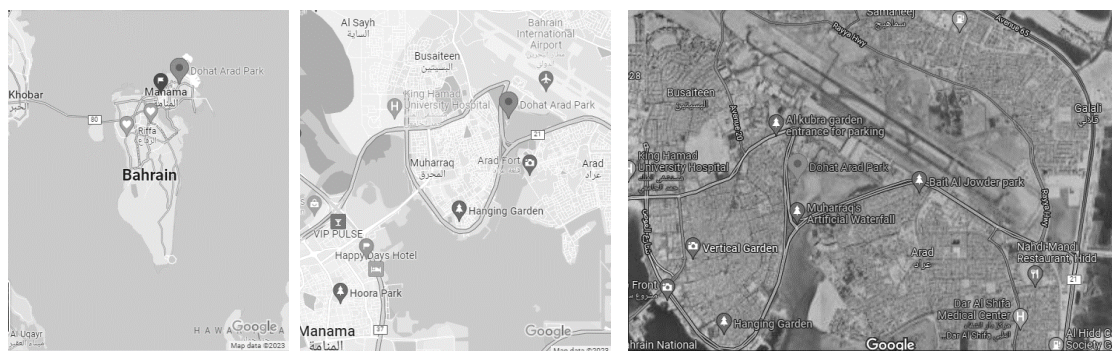


Figure 1: urban approach (Macro and Micro location) for Dohat Arad (google, 2022).

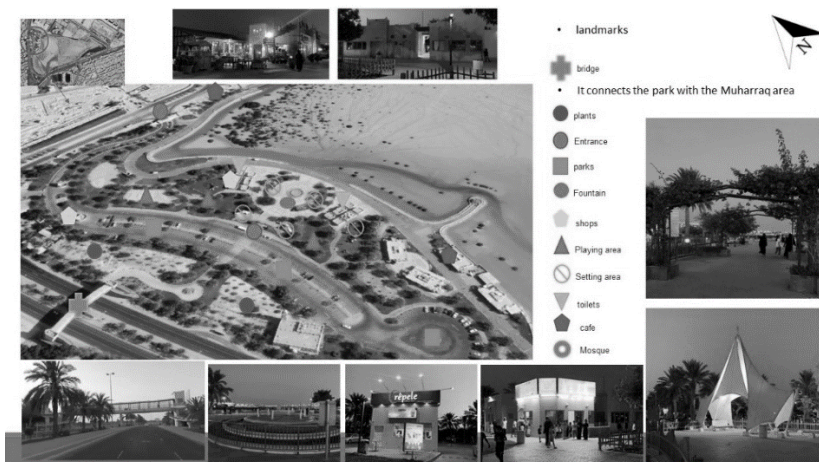


Figure 2: The main elements of landscape architecture design in the Dohat Arad park.



Figure 3: Walkway Pavements and their sitting areas.

As shown in figure 4, the pedestrian corridor is dull, and the lighting design is dim in the walking area, and in general, the parks need proper lighting design. It also depends on the strength of the external highway lighting, which attaches to the park. At the fountain area, there is poor lighting design, which makes the view gloomy and has no soul, as well as that the green areas have no lighting to show their beauty

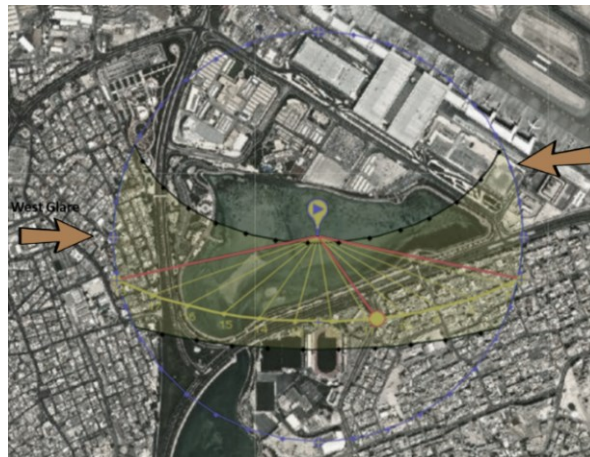


Figure 4: Lighting in Dohat Arad.

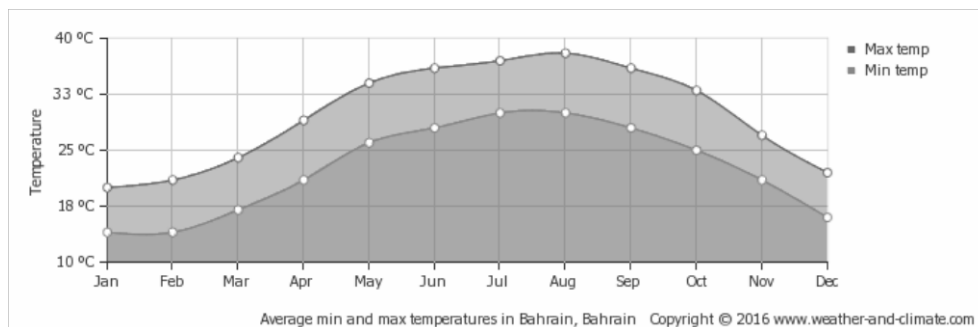
Chapter 6: Phenomenology Theories' Influence on Preservation of Ecological Parks

Natural environment:

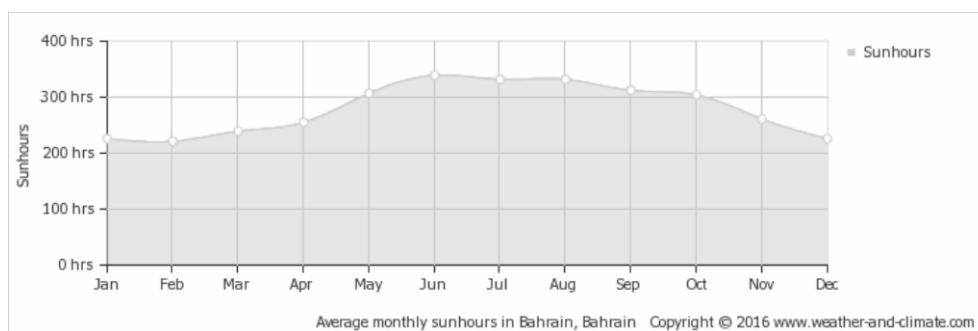
Climatically, based on weather reports collected during 2005–2015, the Annual Weather shows the Hottest Month August (36 °C avg), while Coldest Month is January (18 °C avg). The Wettest Month is November (23.8 mm avg), the Windiest Month is June (19 km/h avg), and the Annual precip 90.6 mm (per year) figure 5 (Airport, 2005 : 2015).



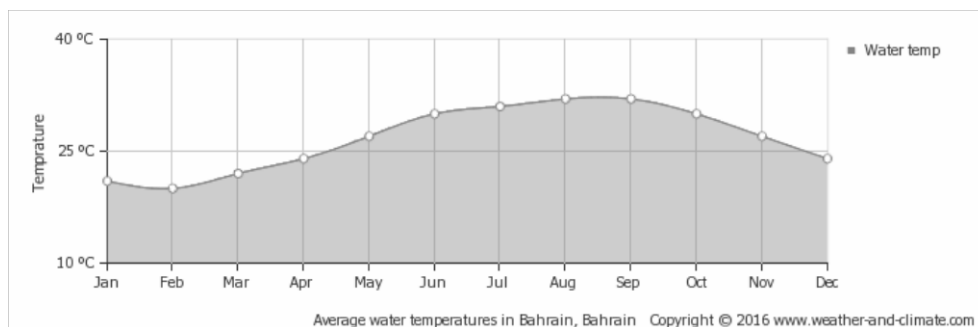
a. Annual sun bath for Doha Arad Park (Airport, 2005 : 2015)



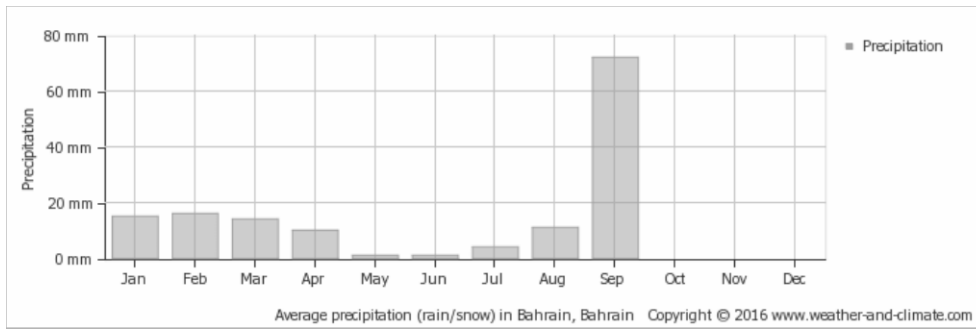
b. Average minimum and maximum temperature in Bahrain



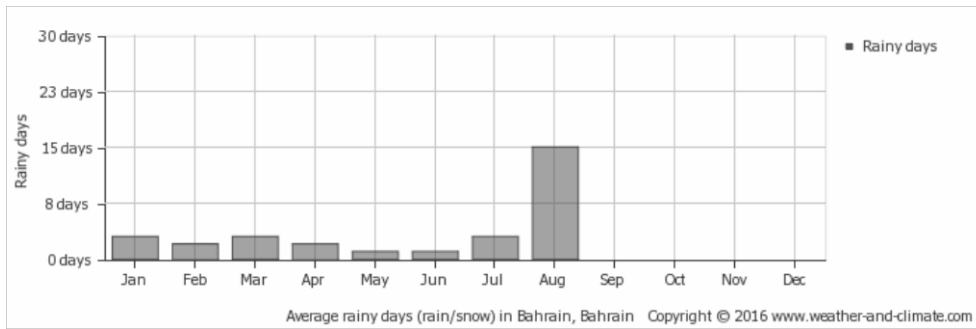
c. Average monthly hours of sunshine in Bahrain



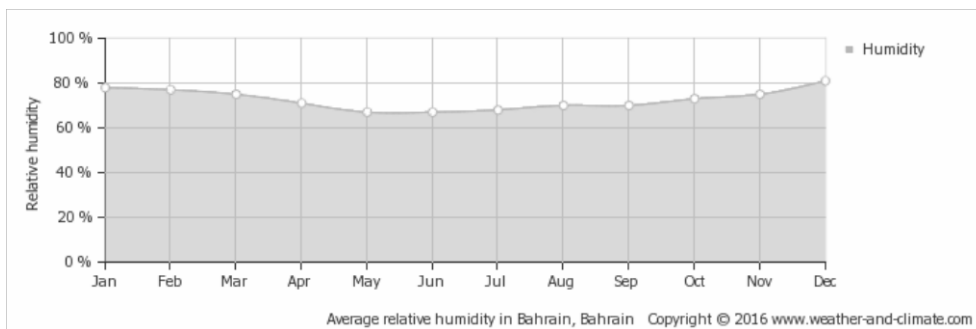
d. Average water temperature in Bahrain



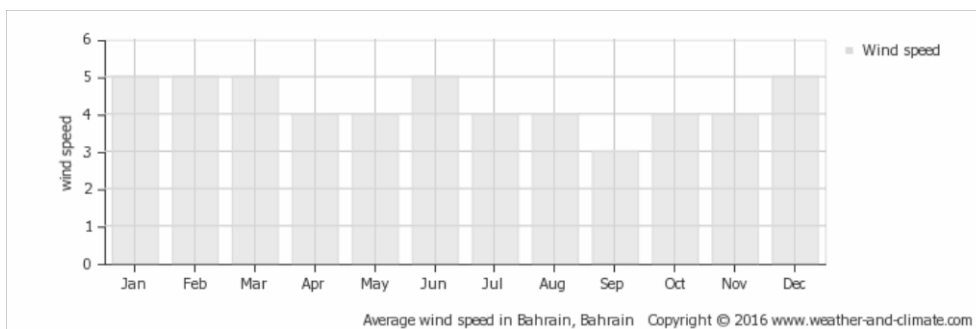
e. Average precipitation (rainfall, snow) in Bahrain



f. Average rainy days (rain/snow) in Bahrain



g. Average relative humidity in Bahrain



h. Average wind speed in Bahrain

Figure 5: Metrological measurement for Bahrain weather (Meteorological Services, 2022)

One of the environmental factors is the northeast wind, which would act as natural ventilation and fresh breeze; also, there is a lake in the middle of the park, which makes good fresh air. Bahrain has a harsh environment (average high temperature and humidity). In that spot, Bahrain's weather is characterized by the followings:

- Summer hot months are April, May, June, July, August, September, and October.
- Bahrain has dry periods in January, February, March, April, May, June, July, and August.
- September is the wettest month, with a high rate of glare condition (figure 6).

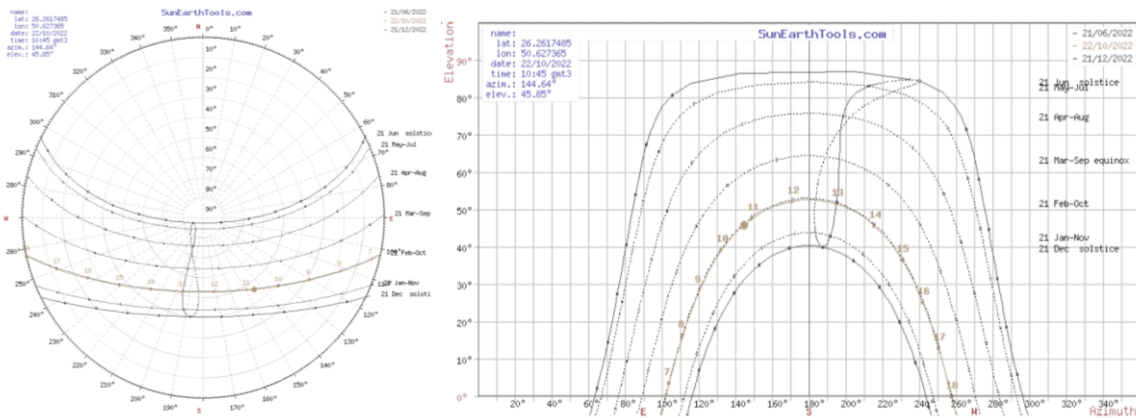


Figure 6: Sun position charts along the year.

For the Fauna and flora, ecologically, the park is a residence of many rare birds and fish, green spaces, palms, and trees. According to the site Orientation, the site is severely exposed to the west-east directions, which means the site will be exposed to glare from these directions (figure 7).

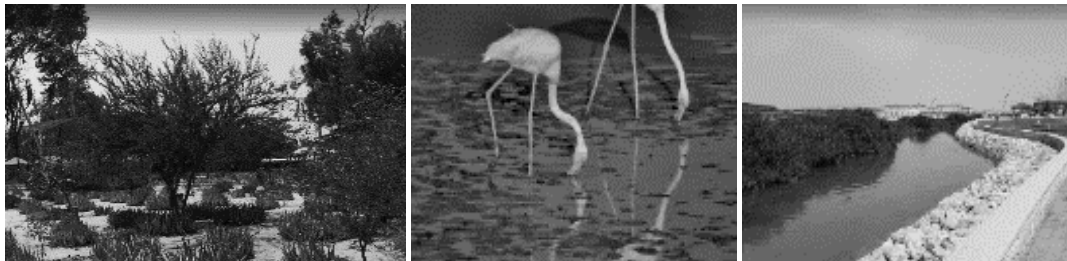


Figure 7: A Natural Reserve for plants, animals, and Coastal Mangroves.

Social Frame:

The site design has minor considerations toward the privacy of the users. It has no historical or religion demintion. It includes places for gathering areas, fistful spaces, and a kid's playground area. Unfortunately, the sitting areas are scattered without deep consideration for large family numbers. It has concrete benches with poor design.



Figure 8: the kids' area



Figure 9: The social gathering area.

Due to its unique visual appearance, it is considered one of the most attractive parks in Bahrain (Elghonaimy, M., 2019). The statistics indicated the density of visitors throughout the week. The highest density rate throughout the week for visitors is between 3 pm to 9 pm, as the days of the week from Sunday to Wednesday are not densely crowded, which is normal. However, the weekend is at the highest intensity, so Friday is the busiest day.

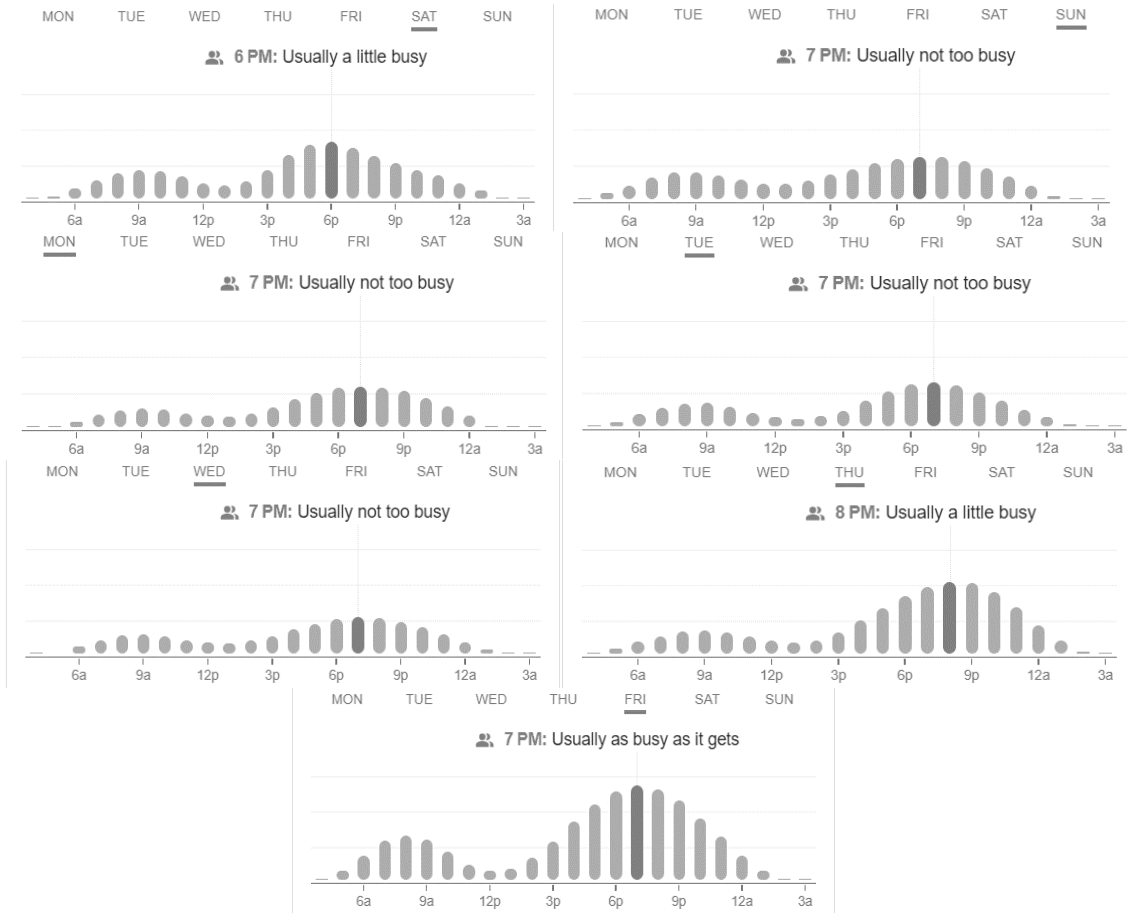


Figure 10: The density of visitors throughout the week.

Economic and Engineering Frame: that affects project

It is also essential to know the destination and the location where people gather and their presence in their densities in Dohat Arad. As we can see here, the western region of the park is the most densely populated area due to its proximity to parking, kid's areas, and restaurants. Figure 7 shows the activities below.

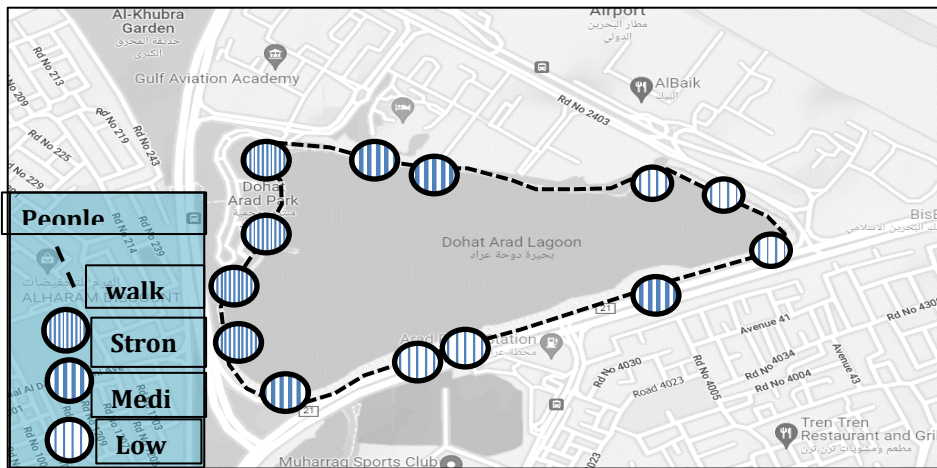


Figure 11: the significant activities in the Dohat Arad.

Discussions

Dohat Arad park has a unique luster among the people and residents of Bahrain, and it is one of the first destinations in the country for hiking, practicing sports, and spending a good time in it. It is a social magnet for the residents inside and outside Muharak city. From the site inventory it is recognized the followings:

landscape architecture design

After studying landscape architecture design, the absence of the ecological dimension in general in the plan was recognized. In general, the design concept of the park dealt with it as a traditional park, not as a preserved zone. There were no landmarks related to the type of area or reflecting the ecological dimension. Moreover, there need to be more ecological spaces to improve visitors' awareness of the preserved area. The implemented landscape architecture design elements (hard and soft) were examined the significant considerations in designing and selecting materials. The analysis respected the pillars of sustainability: Social, Economic, Environmental, Political, and Cultural frames. Regarding the hardscape design elements:

- a. Environment Frame; most of the existing hardscape elements are made of artificial materials and non-eco-friendly materials. For example, the cement tiles (Interlock tiles) follow no ecological considerations in design and selection.
- b. Social frame; visual-wise, there is no clear division for pedestrians, running, or even no pattern for the sitting area. There are missing design elements that enhance the awareness of the users in the park's
- c. Economic frame; the easy breaking of these tiles makes them not durable. There is a need to change some materials to suit the ecological dimension of the park. For example, running and walking should be natural materials. Also, divide the spaces into cycling and social sitting areas to make them more attractive. For the children playing zones, the selection of safe and secured flooring materials should have high consideration and match the ecological dimension of the park.
- d. The sitting areas, the existing design made of concrete, which is not ecological material and gives a sense of boredom for the user. So, sitting made of decorative stone surrounded by native plants on top of natural stone attractive colorful tiles will enhance the ecological senses for the visitors.

And the softscape design elements, the softscape and the selection of native plants are poor and not to the standard of the preserve area. There needs to be more than the group collection of the gathering plants to give the visitors a sense of the ecological dimensions.

The questionnaire:

The second analytical part of the study targeted the opinion of the users; therefore, a questionnaire was presented to people randomly. It aimed to discover what the visitors want and what Arad Doha needs for its development. It gathered the people's opinions and converted them into guidelines for what users expect to find in Dohat Arad park as an ecological reserve. This helped the study stand on the essential points. With the help of people, the results and problems became apparent. It should be noted that the age group was considered in the questionnaire that is most popular with the questionnaire.

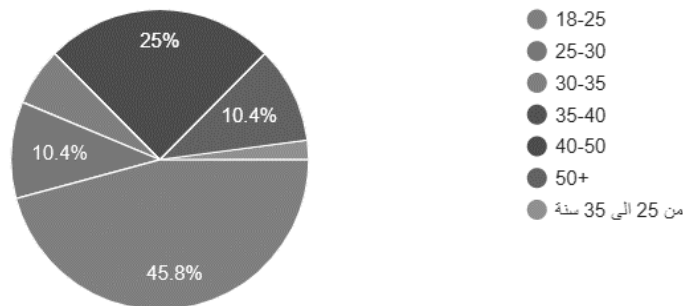


Figure 12: Age of the responders for the questionnaire

As expected, the age group from 18 to 25 years was the most participating in the online questionnaire, and indeed, this is the most interactive category with these matters. The results of asking people about the most beautiful things in Dohat Arad are as follows.

- a. At a rate of 25.31% of the responses, it was stated that the walking area is the most attractive and preferred by people. Furthermore, the location of Doha came next with a rate of 20.83%.
- b. People expressed their admiration for that by mentioning that this area made it a prime destination for families and hiking. As for the lake, it is the third most attractive thing in the park; it came with a rate of 14.58% of the responders.
- c. People expressed the high value of the view of the lake and the seating area that helps visitors to relax. Doha's strategic location came next with a rate of 10.41%, as visitors expressed that it is a distinctive area for temporary waiting for the airport and its proximity to essential areas in Muharraq and easy access to them.

- d. The rest of the percentages came with things scattered among the visitors, such as green spaces, restaurants, and a kid's area. Later, people were asked about the things that need development and modification in Arad Doha, as shown in the following figure.

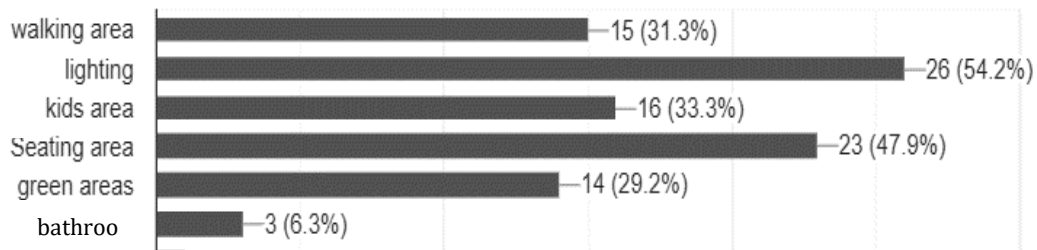


Figure 13: Results of the study questionnaire

- e. Lighting indeed came as the first choice of people, as it is the thing that needs to be significantly developed, at a rate of 54.20%, which is a large percentage.
- f. Almost half of the visitors chose lighting as the biggest problem in Arad Doha. Certainly, it had been discussed in the study for its importance in showing the quality of the place. As for the seating, it was the next choice of visitors with a rate of 47.90%, as it is old and unfashionable and does not help comfortable sitting for long periods, and also its number is small, so it was definitely the next choice for visitors.
- g. The children's area came third in the list of things that need development. It has a weakness of safety for children, and also its old games that need developing and updating in order to be more attractive to children, and there are certainly few of them.
- h. As for the walking area and green spaces, as is clear, it came at a rate of 31.30% and 29.20%, respectively, because they are indeed the areas least affected by visitors. As was explained in the study, they need developments to raise their quality and not a defect in them.

After these views, it was undoubtedly logical to ask the visitors about their proposals for the development of Arad Doha, and their answers came as follows:

- a. The answers came to the need to modify the lighting design and increase their strength, especially in the walkway area.
- b. Some called for changing the floor to be suitable for walking and exercising in a comfortable way using soft beds ideal for athletes and the children's area, and also among the suggestions was to increase the number of security personnel in order to prevent some acts of vandalism in the spaces green and other facilities.
- c. The answers also came about the need to use the lake in a better way, through which it is used as an activity that visitors can enjoy more. Some called for adding sports machines to parks, such as some parks in Bahrain, in order to be a destination for athletes in the region. Some also said it needs to increase the number of restaurants with outdoor seating to enjoy the scenery and atmosphere.
- d. Also, the toilets need to be improved and renewed because some are unsuitable and not clean for comfortable use.
- e. The most critical question was the visitors' opinion on keeping Dohat Arad park as an ecological reserve. So, 66.7% of the people answered yes to this question, which reflects the extent of people's interest in Arad Doha and its flora, and that caring for it is a fundamental matter for its visitors.

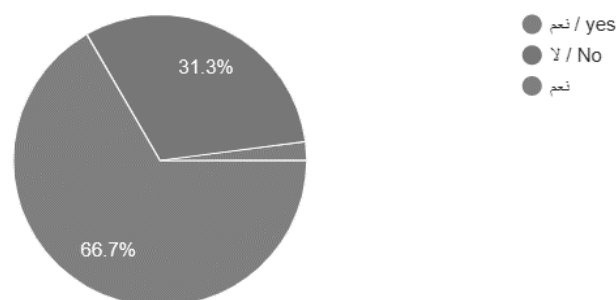


Figure 14: the visitors' opinion on keeping Dohat Arad park as an ecological reserve.

Results

From the landscape architecture design point of view, it did consider the ecological dimension of this preserved area. Even it did not include the phonological theories in the overall plan to attract the users' senses and deal with the design of the preserve area as a traditional park. Most design elements and materials need to deal with the visitors' senses. From selecting the materials, the preserve Dohat Arad park needs to do major changes in

selecting and implementing the materials to give the preserve experiences for visitors. The overall criteria for selecting the materials should respect the park's central theme. The revision of selecting the landscape architecture design elements is essential to deliver the sense of the preserved park. For example, selecting landscape architecture materials for social areas, cycling, sitting, festival zones, running, and walking must reflect the ecological dimension. These materials should respect the environmental extent in the selection and be attractive. Unfortunately, most of the flooring materials and children's areas are not suitable for them and unsafe. For example:

- a. The walking area is the most important thing for people in Dohat Arad because it occupies the most significant space, and its development is not an important matter to make it of the best quality.
- b. The running/walking track materials that are better to replace with different materials and the vision that will suit this situation. For example, use the "Rubber jogging track." This material will be suitable for running/ walking track for many reasons. The feature of this material is the optimal slip-resistant property provides a safe playing surface. It is resistant to all climate changes, incombustible (fireproof) suitable for Children's play areas, Fitness centers and gyms, tennis courts, Bicycle paths, walking paths, and entertainment centers.
- c. The Siting Area can be decorated with plants and more attractive tiles and colors. It should be sustainable, ecological, and intelligent to match the theme of a preserved area
- d. The lake needs attention, mainly because it contains essential plants, and its increasing activities are important.
- e. The sessions along the walking area need to be developed, and an intelligent and ecological architectural element added so visitors can enjoy Dohat Arad and its views.
- f. The children's area is a significant area for visitors, as it is the area that needs to be safe for their children so that they can let their children play in it. At the same time, they are comfortable, so they can practice their sports or social activities.
- g. Converting Dohat Arad into an ecological reserve will bear fruit because this means increased attention and protection for its plants, which visitors definitely want.
- h. lighting, the pedestrian corridor is dull, and the lighting is dim. It also depends on the strength of the road's lighting, which is opposing a lot. At the fountain area, there is no lighting, which makes the view gloomy and has no soul, and the green spaces have no lighting to show their beauty. So there is a need to change the type of lighting in the sitting and the walking area. In general, the parks need comprehensive lighting design.

Table 1 clarifies the extent of the garden elements' connecting the senses and the importance of their proximity and will show its sensitivity to and relationship to nature. It shows the result of the analysis between the design elements and the considering the phenomenology theory in the preserve Dohat Arad park. The comparison between the design and its selection of materials with the ecological dimension for the preserve Dohat Arad Park.

Table 1: Illustrate the suitability of the design elements with the users' senses under the umbrella of sustainability (respecting the conceptual ecology design).

landscape architecture		The sense of				
Categories	Elements	Touch	Taste	Hearing	Smell	Sight
Hardscape	Pavement	√	x	x	x	√
	Lighting elements	√	x	x	x	x
	Sitting areas	√	x	x	x	x
softscape	Water element	√	x	√	√	√
	plantation	√	x	√	√	√

Table 2: Examples of the alternative for the landscape architecture design moments to select materials matches the theme of preserve areas.

Landscape architecture design element	Dohat Arad	Reserve (ecology – environment)
Hardscape		
Pavement	Interlock cement tiles	Natural material & Rubber jogging track
Siting Area	Old Sitting blocks	Modern sitting area
Lighting	Weak & not covered all areas	Strong & Covered all areas
Softscape		
Water element	Available	Available
Plantation	Not protected	Protected

Conclusions

Considering the sensory design is vital for ecological preservation projects. The visual quality in such preserved areas reflects an essential role in communities' social and economic life. Recently in Bahrain, there has been a strong awareness of keeping ecological areas. Such ecological preservation projects are a vital social and economic resource. This value increases while the cities develop, and people are invited to walk, stay longer, and enjoy the atmosphere while visiting the preserve areas. It needs a high visual quality of space. The visitors interact with the sensory quality of the spaces successfully while finding good designs considering the ecological dimension. It occurs while using the environmental materials in the park components of the project, such as the walkways, kids' areas, gathering spaces, festival zones, and the green areas inside the fabric of the park, while urban designers are reviving the ecological urban culture. At the end of this study, many points were introduced, whether it was the Phenomenology theory or ecological reserves. The study examined the effects of selecting the materials on the sensing of the visitors in the park. It highlighted the process of respecting the design elements of the ecological reserve was discussed, as well as the proposed solutions for its development in all aspects, whether Architectural or technical solutions through people with their opinions; this study was prepared in order to try to find solutions to the problems of Arad Doha and seek to develop them. Respecting the phenomenology theory is essential to the design's success in delivering the sensing of users with the meaning of Dhat Arad Park as a preserved area.

The criteria for selecting the materials used in the park should be ecological directing. The colors, textures, and shapes have to be considered in addition to the furniture in the park components. Through this study, it is intended that the door remains open for everyone to strive to develop Dohat Arad preserve park following the phenomenology theory to attract visitors and create a memory for the visitors about the park. It will be an essential reference for those who seek to improve the preserve area projects and increase interest in it and all the critical facilities of Bahrain. Through this study, it is intended that the door remains open for everyone to strive to develop Arad Doha, and perhaps it will be an essential reference for those who seek to develop it and increase interest in it and all the critical facilities of Bahrain.

Acknowledgements

This study did not receive any specific grant from public, commercial, or not-for-profit funding agencies.

Conflict of Interests

The authors declare no conflict of interest.

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Chapter 6: Phenomenology Theories' Influence on Preservation of Ecological Parks

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