

The use of miniature parks as a museum for Egyptian architectural heritage

Nermin Mokhtar Farrag

Civil & Architectural Department, Engineering Division, National Research Centre (NRC), 33 El-Buhouth St., 12622 Dokki, Giza, Egypt. E-mail: nerminfarrag@yahoo.com

Ayman Hesham Elalfy

Civil & Architectural Department, Engineering Division, National Research Centre (NRC), 33 El-Buhouth St., 12622 Dokki, Giza, Egypt. E-mail: aelalfynrc@yahoo.com

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ABSTRACT

Miniature heritage parks are considered a good chance for people to be aware of their countries architectural heritage. It might be hard for every person to visit most of a country's monumental places. Egypt is a country that has various historical places and a lot of monuments located in different natural and cultural environments. Egypt had passed various historical periods including pharaonic, Coptic and Islamic. Miniature heritage parks contain a blend of small scale architectural models and sculpture art models that compose a good knowledge environment that enhance its visitors to know about their heritage. Although Egypt has a very rich heritage environment. Yet there are few opened miniature heritage parks. Nowadays there is a great demand to enhance the design and construction of such parks with the guidance of the foreign miniature heritage parks found in China, Holland and the United States of America. The research goal is to enhance the architectural design process for heritage mini parks in Egypt through a comparative study for of some foreign park examples displaying Egyptian monumental models and two miniature heritage parks existing in Egypt reaching architectural design criteria that should be considered during the design process.

Keywords: Miniature Park, Architectural Heritage, Sculpture and Architecture, Museum, Egypt

Introduction

People have the right to know their heritage and see their countries' monuments, miniature parks display three dimension scale architecture models representing some chosen samples of real monuments enhancing the heritage knowledge of such countries.

Education philosophers since the 17th era cared about the use of play parks for educational purposes through youth mental, emotional and social development. Play and discovery can accomplish educational goals (Chiesura, 2004). Parks are entertainment places that enrich the availability of and sport facilities (Thompson, 2002).

Open specialized parks have various kinds, Natural parks, historical parks, and future parks (table1). Some parks have different culture and social functions such as miniature parks, such parks give its visitors in a short period of time a brief knowledge about a country like Egypt that has a various types of civilizations by illustrating thousands of years of its historical period.

Miniature heritage parks are composed of a blend between sculpture art and architecture scaled three dimension models, sculpture gives the visitor a pleasure of art and aesthetic visual perception through simulation and the feeling of solid and void, also sculpture give form and properties to its space and aesthetical visual effect that helps in forming space motion relationships between sculpture masses and surfaces surrounding giving it a special character (Sadowska, 2015).

Architects used small sculptures and architectural three dimensional models shaping the real cities with all its details to give the visitor and the tourist brief knowledge about its real monuments and its geographic regions.

Table (2) Shows show architectural design aspects for the use of sculpture in mini park landscape and the various materials like wood, metal, rubber etc.. used to form the sculptures (Kysar,

Corresponding Author: Nermin Mokhtar Farrag, Civil & Architectural Department, Engineering Division, National Research Centre (NRC), 33 El-Buhouth St., 12622 Dokki, Giza, Egypt.
E-mail: nerminfarrag@yahoo.com

2001). Sculptures can be used in the design of most of space elements such as fixed seats, shades, walkways and children toys.

The main use of miniature heritage parks is the display of three dimension scale models for real buildings and real monuments for heritage knowledge development of local visitors and to act as tourist attraction points. The park might display models for only one city or multiple groups of three dimension models representing multiple cities. Most of mini parks display its models from a distance and it displays country's railways and main roads.

Research Problem

Although Egypt has rich heritage resources, yet a lot of people do not have the chance to visit all its monuments. There is a need to enhance the design and the construction of miniature heritage parks, few are presently constructed and operating in Egypt but they are not in appropriate shape like similar parks in foreign countries such as China, Holland and United States of America.

Research Goal

The miniature heritage parks play an important role in developing people's culture and heritage Knowledge. The research goal is to overview and enhance the architectural design process of miniature heritage parks in Egypt.

Research framework

The research begins with a background showing the important role of miniature heritage parks in heritage knowledge, youth education, and tourist attraction. Followed by Egypt's existing miniature heritage parks shape and the need to follow some design aspects from foreign similar examples experience.

The research's theoretical part begins by describing various kinds of open parks, followed by miniature heritage parks idea and design aspects, the use of sculpture in miniature heritage parks, an overview of some foreign examples showing some design aspects considered for its success. The practical study includes a comparison between a sample existing cultural parks and a similar sample of foreign examples showing its design benefits. The practical study ended by analysis of a questionnaire that targeted some visitors groups from different nationalities includes questions regarding the park location and its available services. Display types and general park design. According to the results of the practical study the research ends by concluding some architectural design aspects that should be applied in the future design of Egyptian local miniature heritage parks.

The miniature Park Concept

Miniature parks are classified according to its function; there are adventure parks, natural parks and futurism parks. (Table1). Mini heritage parks are used in countries that have rich historic and cultural resources to display at small scale models of its architectural monuments to interact with the park design providing its visitors with both entertainment and knowledge, also parks can be used for youth's educational purposes (Türeli, 2006). (Shape 1) the three dimensional models are displayed with an appropriate scale for the visitor to be able to notice its details. Park visitors have the pleasure of entertainment and seeing history and culture of the country in a very short time.

The miniature heritage parks can be designed in different ways, some can be designed as small city three dimensional model and others can be designed as a big special garden that displays three dimension models. Spaces are provided by the characteristics of open air museums (Geissler and Rucks, 2011). There are about 35 miniature parks built all around the world, the first miniature park was build in Bekonscot north west of England at 1929, followed by Madurodam in Holland.

Table 1: Types of theme park, (Wong and Cheung, 1999)

The type	Attributes	The type	Attributes
Adventure	<ul style="list-style-type: none"> • Excitement and action • Frightening • Mysterious • Thrill rides 	Futurism	<ul style="list-style-type: none"> • Advances in society and technology • Discovery • Exploration of science and technology • Robotics • Science fiction • Scientific
International	<ul style="list-style-type: none"> • Flavors of the world • International village • Miniature replicas • Scenic spots • World expositions 	Nature	<ul style="list-style-type: none"> • Animals • Horticultural gardens • Landscaping • Marine life • Ocean • Natural wonders • Wildlife
Fantasy	<ul style="list-style-type: none"> • Animation • Cartoon characters • Childhood enchantment • Children's play park • Fairy tales • Magic • Make believe • Myths and legends 	History and culture	<ul style="list-style-type: none"> • Aboriginal • Authentic • Cultural village • Gold rush • Historic ambience • Cultural heritage
		Movies	<ul style="list-style-type: none"> • American Wild West shows • Comedy • Motion pictures • Show business • Stunt shows

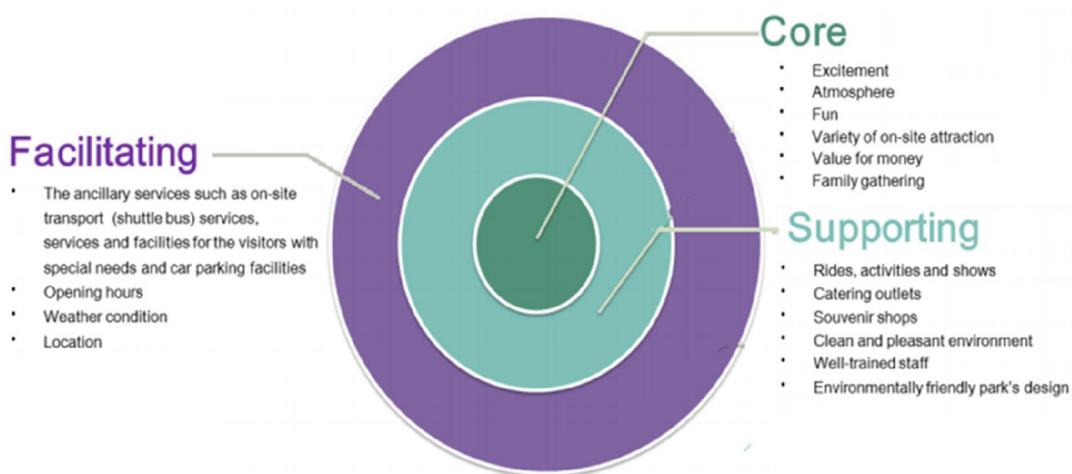


Fig. 1: Miniature park is an expectation of a wonderful experience (Kotler, 1994; Swarebrooke, 1995).

Elements of miniature parks

Architectural scaled three dimension models are the main element forming miniature gardens as these models are shaped to be identical to the real buildings and its surrounding areas. In addition small models are used to display human figures, seats, waterways, train stations, plants and tree models. Architectural design standards and aspects should be considered in the landscape design process of miniature parks (table 2).

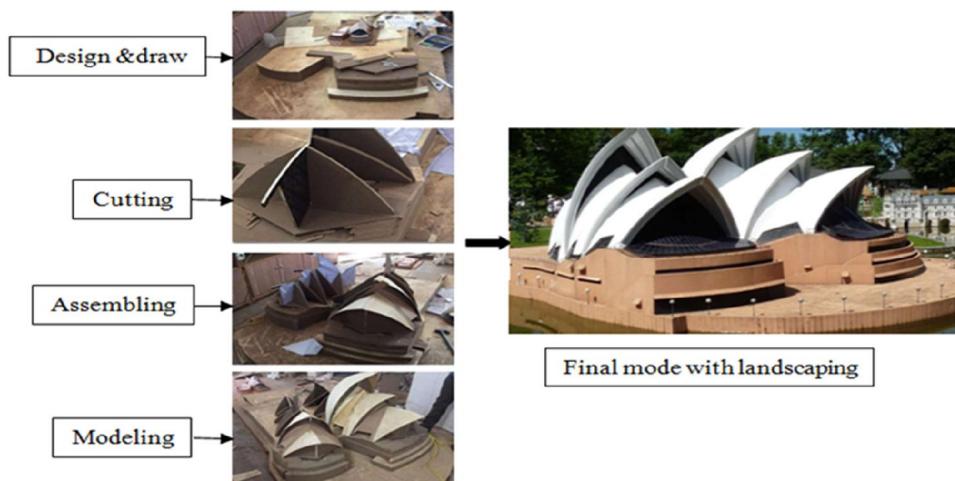


Fig. 2: Steps of making architectural models in miniature parks

Table 2: Architectural design aspects for models in miniature gardens

Functional Aspects	Models should be appropriate in size to space function, shape and size; models vary according to the visitor age category and the expected number of visitors. Models play multiple functions such as entertainment, Aesthetic and symbolic functions.
Aesthetic aspects	Models design should follow many aesthetic aspects to serve the general park design concept, site layout design (Organic shape – grid shape – mixed shapes). Taking in consideration models relationship with other landscape elements, such as plants, floor tiles, sitting areas etc.. taking into account the rhythm, balance, and the unity
Environmental Aspects	Site environmental conditions should be taken in consideration. Site geographic study, site nature, soil type and climatic conditions including annual temperatures and humidity.
Economic Aspects	Financial study for models construction including the electrical lighting fixtures , sound system and insulation also maintenance plan should be prepared to ensure getting the most benefits from the park
Design Aspects	Features : Realistic, life size, simulation color, customized details Advantages : Waterproof, OK with sun, rain, snow .non-poisonous

Study for a sample of foreign miniature Parks

Miniature parks are found in many countries all around the world, these gardens show the architecture features and acts as educational entertainment touristic place. Miniature parks vary in area and number and scale of models displayed (table 3). foreign park examples include Madurodam, Bekonscot Model Village and Railroad Window On China and Tobi World Square shapes (3,4,5,6) – the study overviews the park design benefits, park elements, used materials, guest services in addition to the variety of plants used in the landscape design.

Table 3: Gives some comparative information on Miniature Park (Hyland, 2019).

Park	Year open	Area(m ²)	Scale	Models
Madurodam Miniature city	1952	36000	1:25	338
Bekonscot Model Village	1929	15000	1:12	More than 200
Window On China,	1984	120000	1/25	130
Cullen gardens	1980	180000	1/12	180
France miniature	1991	50000	1/30	158
Swiss miniature	1959	14000	1/25	128
Italy in Miniature	1970	85000	1:25 -1:50	50
Tobi world square	1993	80000	1/25	102

Miniature Turkey Park	2003	60000	1/25	126
Minimundus- Austria	1958	26000	1:25	176
Cockington green gardens	1979	25000	1/12 to 1/100	70
Taman Mini Indonesia	1975	1000000	1/25	26
Mini Egypt park	2017	30000	1/25	55

Madurodam - Miniature City



Fig. 3: Snapshots and General Site of Madurodam - Miniature City, Wilson, (2018).

- The park features a number of hands-on experiences that help to make it more interactive and fun for visitors of all ages.
- There are digital screens, and a personal smartphone to use throughout the park. It provides a media-rich experience that explains the story behind each object.
- There is a playground for children and three areas in the park (City Centre, Water World and Innovation Island), there is also a section of the park, visitors can learn about the many accomplishments of the Dutch. There are many restaurants, Café, and shops of souvenirs.

Window on China, Longtan, Taoyuan County (mini china)



Fig. 4: Snapshot and General Site of mini china (Window On China) (Taiwan,Formosa, 2017).

- It is consisted of 3 areas, including Mini World, Water Park, and Amusement Park.
- The Mini World is divided into Mini Taiwan, Mini China, Mini Asia, Mini Europe and Mini America, where visitors may find scale models of famous buildings and developments of each country or region.
- The Amusement Park is fitted with a number of rides that are suitable for family and young kids. There are Euro Riverboat, Wipe Out, Merry-go-round, Little Pilot, as well as tour train, which lead visitors on an adventure around the park.

Bekonscot Model Village and Railroad – United Kingdom



Fig. 5: Snapshot and General Site of Bekonscot (www.bucksgardenstrust.org.uk).

- This is the oldest surviving model village in the world. Buildings are constructed in natural materials, concrete, or dense foam board, and many are originals from the 1920s.
- It delights visitors of all ages. It is a miniature wonderland with a large railway, remote controlled boats and kiddie rides, Tea Room and Gift Shop (Garfield, 2018).
- The site is largely level, with the exception of elevated pathways designed to enhance the views over the entire village.
- The lakes and waterways are a popular feature along with the railways threading across the site.
- Careful attention to the many shrubs and trees help to bring them into scale with the models.

Tobu World Square – Japan



Fig. 6: General Site of Tobu World Square – Japan, (www.tobuws.co.jp/en) [15].

- It's famous for exhibiting replicas of famous buildings from around the world, including ancient monuments, cultural treasures and UNESCO World Heritage Sites(including 47 World Heritage Sites)
- Every model is reproduced and displayed with minute detail all the way down to cars, trains and miniature people populating the sites.
- This theme park is committed to attractions that are as realistic as possible. At night, much of the park is illuminated. Plant decorations also change according to the season.

Architectural design standards for miniature museum gardens

With the development of architectural thinking miniature museum garden's thought had changed during last period of time. Architectural designers, education developers and museum experts integrate their opinions to develop attracting miniature museum gardens that offer different experience to its visitors by letting them see and listen to historical stories of its models as the move between.

According to previous studies of miniature museum gardens some architectural design considerations that should be taken in consideration (table 4), also there are some success factors shown in listed in (table 5)

Table 4: Architectural design criteria and considerations for miniature museum garden's

Standard	Architectural design consideration
First & Last impression	First spaces should offer attraction, safety and good inspiration as it invites visitors to enter the garden, last impression of spaces invites visitors to visit the garden another time
Route of the visit	- Routes should offer easy orientation - Utilization of display spaces to stir curiosity of its visitors to stop, play and continue their garden visit. - Safety of groups flow avoiding the formation of crowded areas
Display Space Form	- The display models and fixed furniture should fit kids scale. - Display type should be attractive and suitable for seeing as well as touching. - Display signs should be located at vision level, with good colors and written in clear and readable text height
Colors	Displayed models should be in attractive colors that matches kids physiological manner offering his excitement and attention
Safety	- Displayed models materials should be safe for Kids movement - Entrance and exit points should be specified and controlled. - Stairs and ramps should be studied with traffic flow

Table 5: Factors contributing to the success of parks (www.edb.gov.hk).

Attractiveness and visitors' experiences	- Unique and interesting theme - Value for money / Variety of on-site attraction - Clean and pleasant environment - Motivated and well-trained staff - Quality and consistency in services and facilities - Good location
Adapt to market changes	- Senior segment - Environmentally-friendly - Edutainment - Interactive experiences
The management	- Pro-active management - Strong financial resources and on-going investment - Strong marketing team - Maintenance

3. Local examples study

Mini Egypt Park is a miniature garden museum located in Makady bay, Hurghada, Egypt, the largest touristic sea shore city in the red sea area of Egypt. The garden museum contains a collection of small scaled three dimensional models representing Egypt's most popular touristic monuments displayed in an area of three kilometers square Shape (7). For tourists the park's visit is a trip that gives the tourist a general knowledge about Egypt's most popular touristic monuments, also it is an entertainment area for local families and an educational environment for schools, (Shehata, 2014).



Fig. 7: Google earth (sited 9-2019)-Snapshots and General Site of Mini Egypt Park (www.tripadvisor.com).

The park' idea began at year 2010, its first conception studies took in consideration its site location, the project's available budget and the monuments models that are going to be displayed.

Three dimension small scale models were chosen to represent various civilization stages displayed in a cascading manner. Specialized engineers and model makers craftsmen were selected to design and construct the models, each model took at least six months to construct.

Three dimension scaled models construction materials were selected to match the real monument materials. Stone, brick, wood, cement and concrete were used.

The park is composed of a large map representing Egypt's various regions including lakes and artificial rivers representing the Mediterranean Sea, Red sea, the river Nile, and Nasser Lake. The park contains 55 three dimension small scale models representing Giza pyramids, Karnak temple, High dam, Library of Alexandria, Montazah Palace, Cairo tower, Mohamed Ali Citadel.

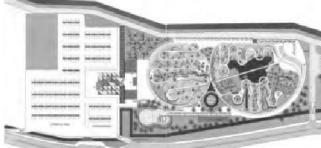
Park's tourist guide illustrates real monument locations and a historic brief written in four languages (Arabic, English, Russian and German).Currently there are future plans to construct similar projects in various touristic attraction areas such as Sharm El-Shikh, Alexandria, North Coast and Marsa allam.

Miniature garden museums act as attraction points for tourists who do not have enough time to visit all real monuments in Egypt. Miniature Park museums offer these tourists the chance to be able to see and know Egypt's monuments in a small three dimension models in just two hours.

Applied Study

The applied study showed that Ghadagha area is a perfect location to construct the Park. The site is close to various tourist resources such as hotels, Ghadagha International airport, and beach areas. Using Egypt's map in site design offered the visitor a good knowledge about Egypt's monument locations and its various regions. Using small scale three dimensional models with a reduction scale 1:25 offered the tourist the chance to see the details of the real monument.

Table 6: Illustrates a comparison between monuments models displayed in Egypt's Park and International examples (www.youtube.com).

	Mini Egypt park- Hurghada	Cosmic village - October	International miniature park
Visitor path			
	Visitor random movement around the models	Visitor movement using boat in nile river	Adequate parking areas – clear visitor's routes Bulut and Yilmaz, 2006 [20].
The entrance			
The sphinx			
View architectural models	Models surrounding does not match the real environment	Models surrounding does not match the real environment	Models surrounding matches the real environment
Abu Simbel Temple			

<p>the castle</p>  	<p>Miniature Turkey Park</p> 
<p>Seating areas</p>  <p>Sitting beside the models in the shade to take drinks</p>  <p>Scattered sitting areas</p>	<p>Swissminiatur</p>  <p>Shaded sitting areas for food and drinks</p>
<p>Internal transportation</p>  <p>Walking through the park</p>  <p>movement using airconditioned boat</p>	<p>Swissminiatur</p>  <p>using model trains for entertainment and to move through the park</p>

The comparative study showed a great difference between the local example site design and the international examples for the display of the same monument model. The Egyptian example showed:

- Models are displayed randomly.
- Each model is displayed individually and at a display area that does not reflect the real monument's regional environment.
- Display areas are not attractive.
- Some of Egypt's civilization periods are not displayed.
- Plants and landscape elements are not well distributed in site.
- Displayed models are not surrounded by appropriate fences.

Applied study survey

Survey method was used in order to assess the perception of visitors related to mini Egypt Park and develop suggestions. Surveys were applied to randomly picked 100 people face to face between the years 2016-2017.

Survey questionnaire results

The survey results, table (7), showed that:

Questions concerning the site, chart (1) , visitors majority acceptance that the site is well located, there are adequate car parking spaces and there is a feeling of safety but few acceptance for adequate number of plants and poor landscape features.

Questions concerning the services, chart (2), visitors majority acceptance that there are adequate number of tourist guides and good advertising methods but less acceptance for the available number of gift shops, restaurants and services.

Questions concerning the services, chart (3), visitors majority acceptance that the displayed models are at good scale but less acceptance for is matching the surrounding models environment match the real monuments environment.

questions concerning the design, chart (4), visitors majority acceptance that first impression is good, colors used are good but less acceptance for types of shows and its relation to the displayed items.

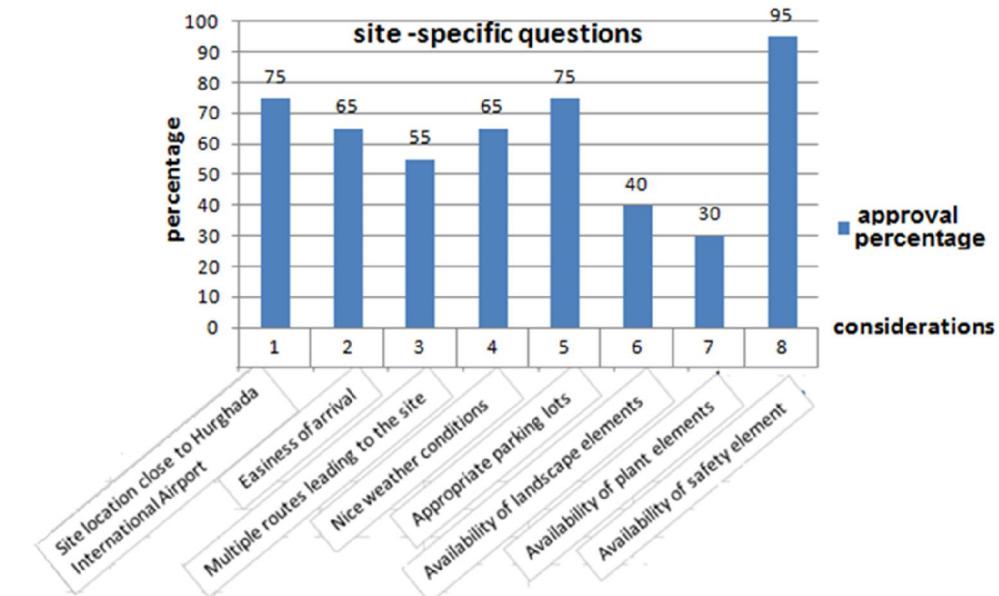


Chart 1: Site survey questions

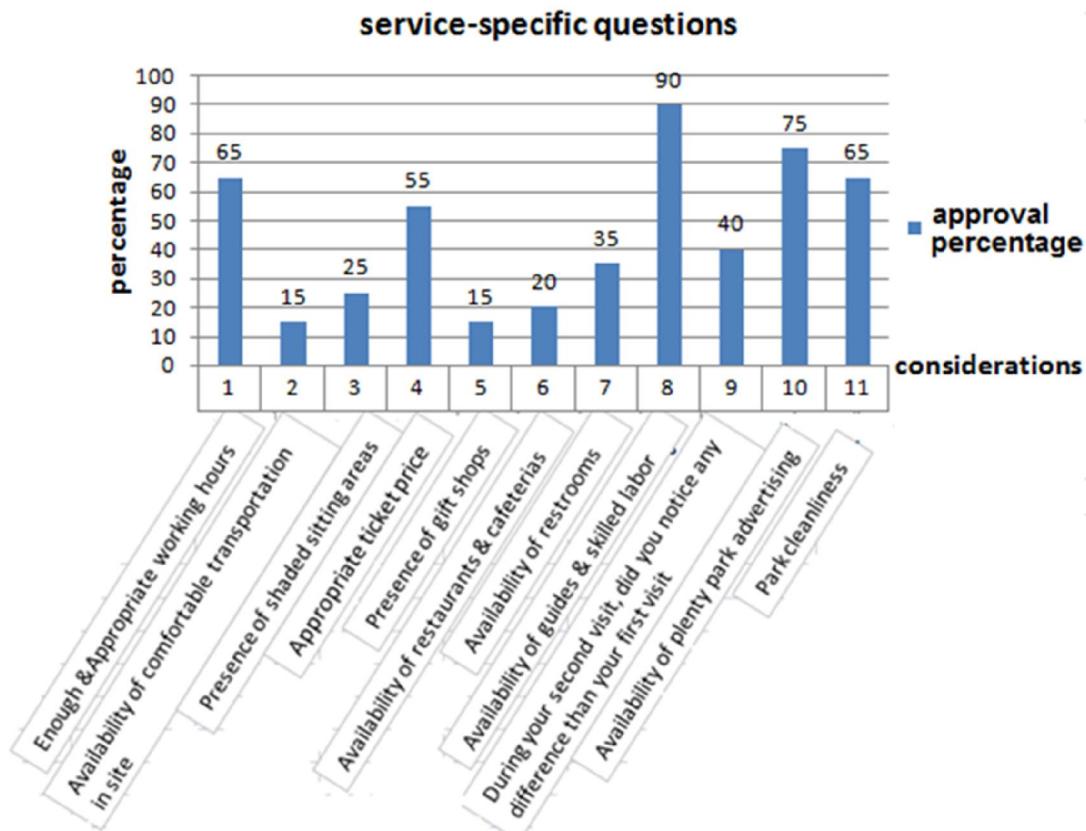


Chart 2: Service survey questions

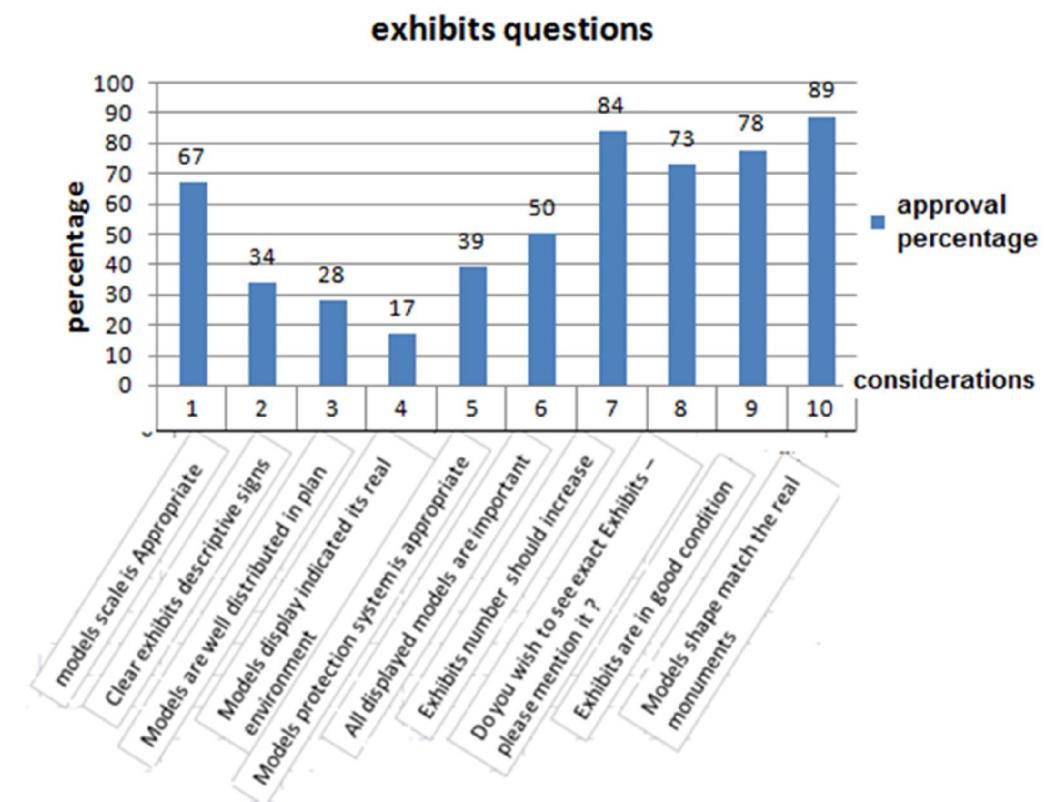


Chart 3: Exhibits survey questions

design questions

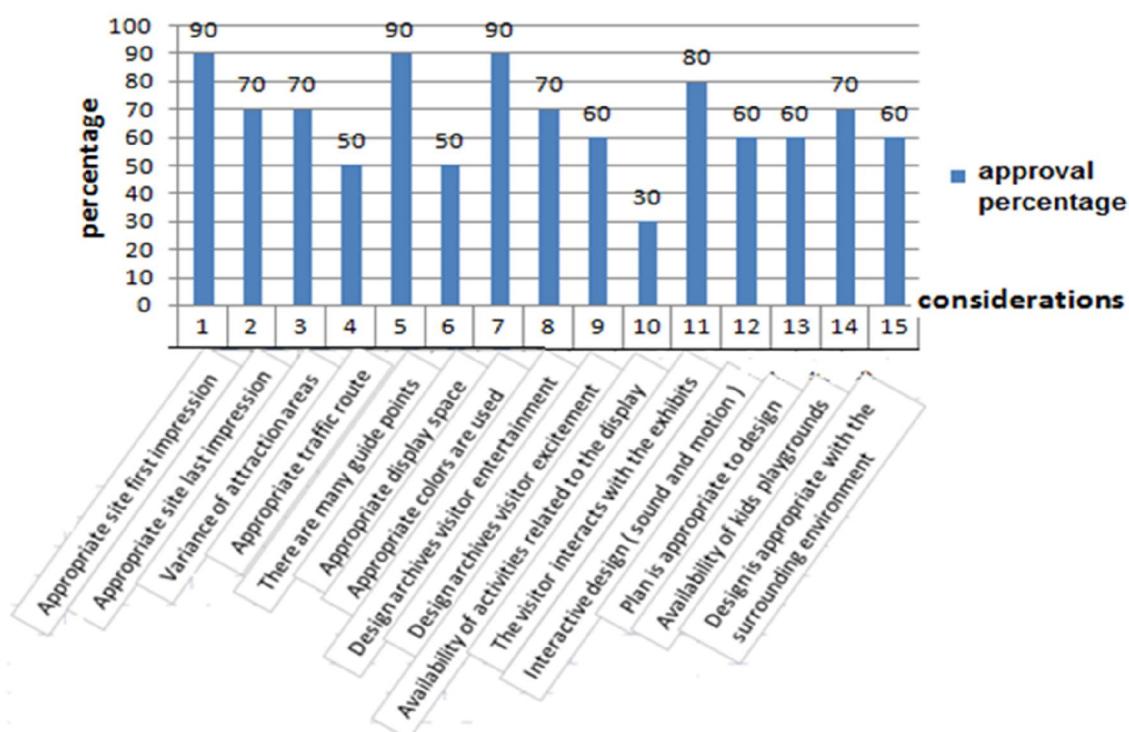


Chart 4: Design survey questions

Table 7: Survey results

Design standards	good	average	wretched	Design standards	good	average	wretched
Site				3-E/models distribution method	30%	42%	28%
1-Site/site choice	75%	20%	5%	4-E/model display	40%	43%	17%
2-Site /site closeness to hotels	15%	65%	20%	5-E/models protection system	55%	6%	39%
3-Site /visit route	25%	20%	55%	6-E/ importance of displayed items	45%	5%	50%
4-Site /climatic conditions	20%	65%	15%	7-E/models quantity	84%	10%	6%
5-Site /Parking areas	75%	20%	5%	8-E/exact exhibits	15%	73%	12%
6-Site /Landscape elements	55%	5%	40%	9-E/exhibits condition	78%	10%	12%
	30%	40%	30%	10-E/model shapes match the real monuments	89%	11%	-
7-Site /shaded sitting areas				Design			
8-Site /safety	95%	-	5%	1-D/first impression	90%	5%	5%
Service				2-D/last impression	25%	70%	5%
1- Service/working hours	30%	65%	5%	3-D/atraction points Variety	30%	70%	-
2- Service/visitors transportation facilities in the site	25%	60%	15%	4-D/visit route	40%	10%	50%
3- Service/shaded areas	15%	60%	25%	5-D/guide points	90%	10%	-
4- Service/entrance ticket price	45%	-	55%	6-D/display space	25%	25%	50%
5- Service/gift shops	50%	35%	15%	7-D/colors	90%	-	10%
6- Service/cafeterias	25%	55%	20%	8-D/visitor entertainment	30%	70%	-
7- Service/restrooms	20%	45%	35%	9-D/ visitor excitation	30%	60%	10%
8- Service/well trained working team	90%	10%	-	10-D/availability of shows	30%	40%	30%
9- Service/ regular maintenance	40%	20%	40%	11-D/interaction between the visitors and displayed models	80%	15%	5%
	75%	15%	10%	12-D/site vitality	10%	60%	30%
10- service/site advertisement				13-D/plan choice	25%	60%	15%
11- Service/cleanliness	20%	65%	15%	14-D/kids playground	10%	70%	20%
Exhibits				15-D/relationship between models and surrounding environment	-	60%	40%
1-E/models scale	25%	67%	8%				
	40%	26%	34%				
2-E/model description signs							
100% -75% Good	75% -60% Average			60%-0% Bad			

Source: the researchers

Table 8: Local Egyptian parks problems and suggested design correction methods

Problem description	Suggested solution
Random models distribution	Display according to historical periods consequence
Models are individual displayed and does not match monuments real environment	Display models in a way that relates to its surrounding environment and trying to match the monument real environment
Few site service areas – few shaded sitting areas and a few number of gift shops	Site service increase – increase gift shops number and the shaded sitting areas
Few visitors attraction points	Provide the site with attraction points and eye catching signs
In vitality of site as there are few water fountains offering sound nor dynamic motion of cars and boats	Site matching the real monument environment by displaying human fingers, trees, boats, waterfalls etc..
Weak site advertising	Planning and making site trips through hotels and various advertising agencies
Site shape matching Egypt's map does not have a relation to models location and types of display	Try to provide a relation between the site and the type of model's display
Some Egyptian important historic periods are not displayed which tourists are looking to know about	Displaying all important historic periods of Egypt
Models scale does not give the visitor the kind of importance the real monument have	Get use of site topography to give importance to monuments models
Models are not surrounded by protective appropriate elements	Models should be surrounded by an appropriate protective tree fence avoiding playing with its contents or moving around the models to look at it from the backside
There is an un-balance between the displayed models and the site plantation	Increase plants number and provide plants that match the real site of the monuments
Un-availability of kids play grounds	Design and construct safe kids playgrounds

The suggested design

According to the previous study the research suggest a design for Egypt's future miniature park as follows figure (8)

LEGEND :

- 1 ENTRANCE AREA
- 2 NOBIAN & PHERONIC PERIOD
- 3 ROMAN PERIOD
- 4 COPTIC & ISLAMIC PERIODS
- 5 MODERN EGYPT PERIOD
- 6 RECENT EGYPT PERIOD
- 7 RAISED TOWER FOR AERIAL VIEW
- 8 KIDS PLAY GROUND
- 9 WATER TOYS
- 10 ROMAN THEATER
- 11 CAFETERIAS
- 12 WATER BRIDGES
- 13 SHADED SITTING AREA
- 14 SERVICE & RESTROOMS AREA

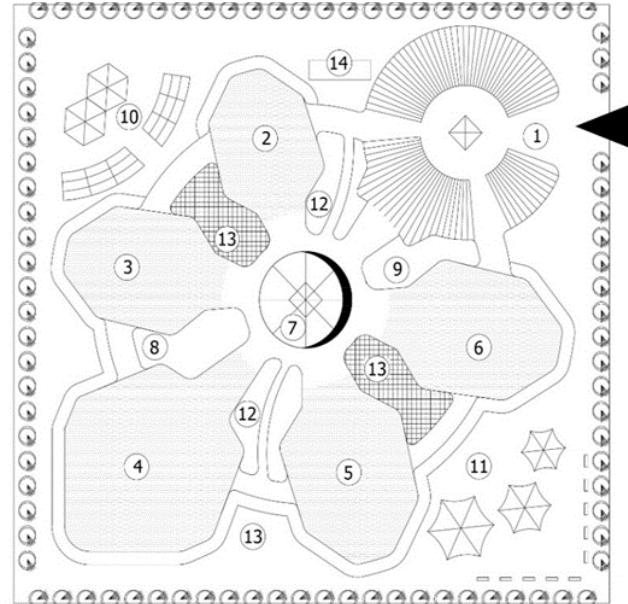


Fig. 8: The suggested design for Egypt's future miniature park. Source: the researchers

Conclusion

Egypt has a large amount of monuments spread all over its regions; these monuments could not be seen in a short period of time. miniature parks facilitate viewing small scale models matching real monuments for tourists and local visitors.

Based on a comparison between the local miniature Parks and a sample of foreign ones some aspects should be taken into account when designing miniature Parks:

- Site aspects: include ease of access, providing adequate car and busses parking areas, environmental control etc..
 - Service aspects: providing shaded areas, restrooms, coffees and safe transportation methods.
 - Design aspects: include landscape elements, ease of transportation, good display methods, integrity of the displayed model with the surrounding environment
 - Displayed items aspects: Include scale of models display, providing clear information.
- based on the applied study the research propose a miniature Park model that display various Egyptian civilizations, architectural heritage taking into account good landscape design, appropriate plantation, shaded sitting areas, services and ease of transportation.

Recommendations

Miniature gardens are considered important touristic and recreational areas as country's historic and monumental models are displayed, it is recommended that the following aspects be considered during its design and planning stages : The park can be visited at all seasons, the display space and shape should be planned according to the displayed model and the expected number of visitors, the site location should be planned to be near the main roads for the ease of accesses, parking spaces should be adequate, the visit route should be planned to lead the visitors, the mini park should have adequate equipments to fulfill visitors various ages, planting design should avoid hiding small size models, number of visitors should be controlled with the park's capacity, models should be distributed in a good manner that offers visitors best models view.

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Survey Form

Name	Age
Nationality	Job
Address	Numbers of visit

No.	Site-specific questions	Agree	disagree	Not sure	Don't know	Notes
1	Site location close to Hurghada International Airport					
2	Easiness of arrival					
3	Multiple routes leading to the site					
4	Nice weather conditions					
5	Appropriate parking lots					
6	Availability of landscape elements					
7	Availability of plant elements					
8	Availability of safety element					

No.	Service-specific questions	Agree	Disagree	Not sure	Don't know	Notes
1	Enough & Appropriate working hours					
2	Availability of comfortable transportation in site					
3	Presence of shaded sitting areas					
4	Appropriate ticket price					
5	Presence of gift shops					
6	Availability of restaurants and cafeterias					
7	Availability of restrooms					
8	Availability of guides and skilled labor					
9	During your second visit, did you notice any difference than your first visit					
10	Availability of plenty park advertising					
11	Park cleanliness					

No.	Exhibits questions	Agree	Disagree	Not sure	Don't know	Notes
1	models scale is Appropriate					
2	Clear exhibits descriptive signs					
3	Models are well distributed in plan					
4	Models display indicated its real environment					
5	Models protection system is appropriate					
6	All displayed models are important					
7	Exhibits number should increase					
8	Do you wish to see exact Exhibits – please mention it?					
9	Exhibits are in good condition					
10	Models shape match the real monuments					

No.	Design questions	Agree	Disagree	Not sure	Don't know	Notes
1	Appropriate site first impression					
2	Appropriate site last impression					
3	Variance of attraction areas					
4	Appropriate traffic route					
5	There are many guide points					
6	Appropriate display space					
7	Appropriate colors are used					
8	Design archives visitor entertainment					
9	Design archives visitor excitement					
10	Availability of activities related to the display					
11	The visitor interacts with the exhibits					
12	Interactive design (sound and motion)					
13	Plan is appropriate to design					
14	Availability of kids playgrounds					
15	Design is appropriate with the surrounding environment					