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# Renovation Urban Spaces as an Open-Air Museum in Heritage Districts Cairo- Egypt as Study Areas

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### **ABSTRACT**

Urbanization is an unstoppable global trend. Vibrant cities should be sustainable and inclusive to ensure no one is left behind from cities, policies, services, settings, and structures to give people better environments and more opportunities. The design of cities and public spaces should be friendly for all ages. It is necessary to design more diverse and flexible public spaces to evolve with the population. This research seeks to consolidate the concept of interest in heritage and the culture of open spaces. Cairo, Egypt, includes many heritage elements over different areas, in addition to its compact urban pattern and its poverty of open areas. Thus, the research focused on proposing areas that can be included as an open-air museum by presenting their value components and integrating them with their urban environment without disrupting this experience after determining the quality standards of heritage spaces. Then, developing a design proposal for the open museum that can be applied in the suggested areas in a way that contributes to preserving the environment, energy, and resources and raising its cultural value.

Keywords: Open Air Museum; urban; heritage; district; cultural.

#### 1. Introduction

Public spaces and streets have often been overlooked and undervalued, but are increasingly being considered the backbone of cities. Public spaces are places that are accessible and enjoyable by all without a profit motive and take on various spatial forms, including parks, streets, sidewalks, markets, and playgrounds. In 2011, UN-Habitat adopted a resolution on sustainable urban development through access to quality urban public spaces .

Valuable urban areas represent an important part of the nation's heritage, established in the visual memory through our visual perception of its architectural and urban vocabulary. However, with modern inputs on these areas, variables have negatively affected the aesthetics of the visual image of the area, the loss of the distinctive character in parts of it, and the inconsistency of the elements of the region as a whole due to the technological changes and changes in the social, cultural, economic, and political structure.

Therefore, heritage can positively enhance a sense of individual and community well-being. However, damage to heritage can have a demoralizing effect, an unsense of being content and uncomfortable. It can also be associated with physical, mental, and emotional health. Urban heritage coordination

projects for areas of value are positively reflected on the socioeconomic and environmental of the population and all the region as good visual formation, environmental, and cultural.[4-1].

The applied study was used, reconsidering the urban map of the capital Cairo, which dates back to 969 AD, and found many neglected heritage monuments to include some of these areas as an open museum. This is to raise the value of the areas and urban environment as a whole, and its reflection on the environmental and economic aspects, such as tourism and trade. It also reduces pollution and breathing space for city residents. Additionally, it enhances the formulation of criteria using the proposed design and deduction of a set of constants and variables extracted from the theoretical study to transform a neglected heritage area into a compatible open-air museum. Finally, the results discussed, are recommendations are suggested.

The research aim: inclusion of heritage areas in the historical capital as an open museum to re-plan the urban map in a way that contributes to increasing the aesthetic and environmental value of the city and enhances human productivity.

### 2. Analytical Theoretical Study

Good public spaces enhance community cohesion

and promote health, happiness, and well-being for all citizens as well as fostering investment, economic development and environmental sustainability. Well-designed and managed public spaces and streets are a key asset for a city's livability and economy:

- Increases property values
- Multiplies retail activity
- Enhances safety
- Fosters social cohesion and equality
- Improves health and well-being
- Improves the environment
- Makes the city more attractive
- Promotes more effective and efficient transportation and mobility

The newly adopted Sustainable Development Goals highlight public spaces as a key and important topic. "Sustainable Development Goals (Goal 11 Target 7, By 2030) provide universal access to safe, inclusive, and accessible green and public spaces, e.g., for women and children, older persons, and persons with disabilities.[6 '5]"

The characteristics of the urban heritage areas of

value differ due to their nature, whether environmental, social, cultural, economic, urban, technological, political, formality, functional, or building legislation.

Factors affecting urban coordination projects for heritage areas of value are as follows:

- -1 Natural factors (climate: topography: water: vegetation):
- -2 Human factors (social cultural and economic environment of the population political life psychological state of the population activities)
- -3 Urban factors (construction and finishing materials; movement; transport; and traffic; utility networks; land uses, the mental image of the urban heritage area).

To achieve the three basic principles of urban coordination projects for sites of value: Self-sufficiency of the heritage site, Meet human needs, and energy strategy. Fig.1, [7, 8].

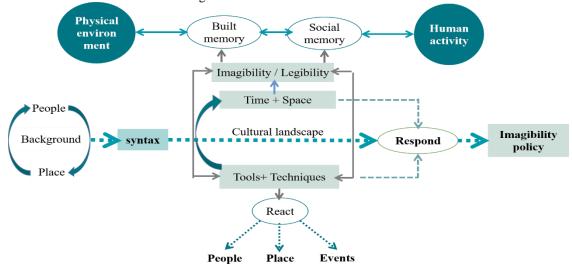


Fig.1. Methodology explaining connections and interdependence to people places and events to document the morphological and cultural imagery. By researcher

For the successful design of an open-air museum, a visual perception must be achieved, which is influenced by the following factors:

- 1- The nature of the external stimulus and characteristics of the perceived formation
- Formative traits (dominance singularly simplicity of form repetition and similarity)
- Expressive features/meaningful (value and spirit)
- 2- The nature of the scenes

3- Factors related to the conditions of the viewing process (the relationship between composition and the surrounding environment, lighting, motion speed of the viewer, viewing angle, period of vision)

The elements of visual composition are realized architecturally through the architectural form (shape, construction, openings) and the formation of the architectural surface (color, texture, materials, decorations, and details). Fig.2 [9-13].

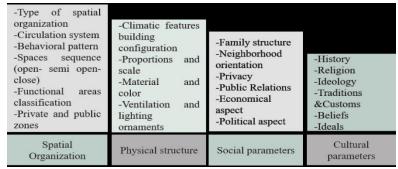


Fig.2 Parameters for the successful design of an open-air museum. By researcher

The feasibility of transforming the urban heritage area into an open-air museum

The feasibility is represented in several points with objectives as follows:

- 1- An architectural feasibility aims to document and preserve heritage buildings of value according to their current condition requirements and remove visual pollution on their facades.
- 2- Urban feasibility aims to upgrade the urban area in the heritage area in general, solve its various problems, provide basic services to the population, raise the level of its functional efficiency, protect it from deterioration, and control the new urbanization.
- 3- Aesthetic and symbolic feasibility are represented by creating an attractive visual image of the area with a distinctive character by exploiting the site, highlighting its unique value, and preserving the personality of the urban area.
- 4- A historical feasibility aims to preserve the cultural continuity of the heritage area and preserve its historical sequence represented by the accumulation of human creativity over the ages.

- 5- Economic feasibility is represented by achieving the maximum use of the site's potential and making financial use of the heritage buildings and urban spaces. The economic feasibility is concentrated in the following:
  - -creating attractive places for tourisms
  - -increasing the value of land and property in the region and encouraging and strengthening commercial centers!
  - -Using the economic return from the project to implement new urban coordination projects in the region or other areas.
- 6- Social feasibility is represented by the existence of a strong relationship between the social classes and the physical environment for housing. The social patterns of the heritage area were formed because of the physical urban environment, contributing to raising the urban development of the region. Fig.3 [14-19].

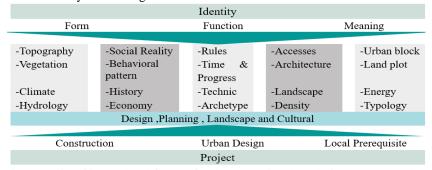


Fig.3 Matrix of interrelated factors for the open-air urban design. By researcher

### 3. World examples of open -air museum

Around the world, there are many experiences for open-air museums with different cultures and

heritage elements that vary in form, content and culture emanating from them, them as shown in the table 1.

### Table 1.: World examples of open -air museum

### Descriptive

# Strengths and benefits

#### Norsk Folkemuseum.

King Oscar II established the first open museum in the world in Oslo in 1881. The wooden church in it is the distinctive element, which was erected in the 13th century and was restored and carvings from the Middle Ages and decorated with intricate painted muralsfrom the century-th16.



Exploiting the existence of a distinctive historical building and restoring it and using the area around it.

## Colonial Williamsburg.

The most famous open museum in America, its 18th-century buildings have been restored to simulate history in all its details, even the systems of dealing within the region and the clothes of workers dating back to this historical era.



The area has a distinct historical character that contributed to its rehabilitation to simulate the historical period of the area.

# Open-air Museum in Shekhawati.

The walls of Haveli are decorated with the motifs of Hindu myths and the life and dreams at that time were beautifully depicted, the frescos decorated everywhere in the cities.



The presence of the ruins of buildings and temples, its splendor and bright colors.

# Hampi in South India.

The Largest Open-Air Museum in the World and was the capital of the flourishing Vijayanagara Empire. It is one of the most popular holiday destinations in South India as it is also a UNESCO World Heritage sit.



The presence of historical ruins on a large area of land.

# 3. An applied analytical study

Egypt includes multiple regions full of monuments and heritage elements, but there are entire cities that can be considered historical cities, Luxor, for example, includes a third of the world's monuments, and Alexandria was the capital of the ancient Roman state. The research focuses on the city of Cairo, the capital of Egypt; it is located on the eastern side of the Nile. It was founded by Jawhar al-Siqilli in 969 AD during the reign of the Fatimid Caliph al-Muizz Lidin Allah. It is one of the most culturally diverse cities so that it can be taken care of and reformulated as air museums where:

- -Diversity in cultural returns (historical era) .
- -Diversity in the heritage element (spine region landmark)

Four areas have been proposed that include heritage

elements, in which a museum can be created in the air in its surroundings, so that:

- -Different areas, creating a historical diversity throughout the city.
- -Creating outlets for the city's residents in the congested urban environment.
- -Design of a sequential visual axial city.

The researcher chose a specific group of archaeological monuments in Cairo, through which it is possible to create a series of open- air museums that include various historical era, which would serve as a lung and an outlet for the crowded city, these 4 areas are (Fostat- cairo Khedive- Islamec Cairo-Heliopolis district), as shown in the figure 4.



Fig.4 chosen areas to create a series of open- air museums in Cairo.

Analysis some historical and archaeological monuments at the selected sites for study to be

converted into an open museum. Table 1. [20-23].

Table 2. Historical and archaeological monuments at the selected sites.

Heritage element (spine - region - landmark)

(El-Fostat) Old Cairo in 5th century.







Amr Ibn Al-Aas Mosque The Hanging Church

Wall of Majri Al-Ayoun

The city of Fustat is the first and oldest Islamic capital, as it was built after the Arab Islamic conquest of Egypt in (20 AH / 641 AD). Currently, this area is known as the Old Cairo Neighborhood, and it is one of the oldest neighborhoods in Greater Cairo, and includes many archaeological sites, including the Ibn Ezra Synagogue, the churches of ancient Egypt, the Amr Ibn Al-Aas Mosque, the excavations of the ruins of the city of Fustat, the Nilometer on Al-Rawda Island, and the Manasterly Palace., and the Palace of Muhammad Ali in Manial.

Cairo Khedive In 18th century.





Planning of the squares

Building styles

One hundred and fifty years ago, Khedive Cairo was established.. That was when Khedive Ismail, during his visit to Paris in 1867 to attend the World Exhibition, asked Emperor Napoleon III that the French engineer Haussmann, who planned Paris, should plan "Khedival Cairo". Urban planning and architectural designed with a mixture of European styles,

Islamic Cairo in 9th century



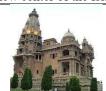




Lift: Al-Maazlidin Allah Al-Fatimi Street-Right: Elzaher bebars mosque

Islamic Cairo or Al-Muizz Cairo also called Historic Cairo and generally refers to the historical areas of Cairo, Egypt, which existed before the modern expansion of the city during the nineteenth and twentieth centuries. Particularly the central parts around the old walled city and around the Cairo Citadel. This area has one of the largest and most dense concentrations of historical architecture in the Islamic world. in 1979, the United Nations Educational, Scientific and Cultural Organization (UNESCO) declared "Historic Cairo" a cultural heritage site Universal, as "one of the oldest Islamic cities in the world, with its famous mosques and madrasas, baths and fountains" and "the new center of the Islamic world that reached its golden age in the fourteenth century.

Heliopolis district in the early 19th century







Baron Empain Palace

Basilica

Ibrahim Al- Laqani Street and Roxy Square

Heliopolis district is one of the most prestigious suburbs of Greater Cairo, founded by the Belgian Baron Amban, owner of the rich (Baron) Palace, which dates back to 1905 and gave the district a distinct character and lifestyle of modern European civilization, starting with the design of roads, streets, buildings with distinctive designs, and many gardens and Open spaces.

# **Open-air Museum Design**

To re-design an existing area that includes heritage buildings, the existing identity in the area must be reflected in terms of buildings and elements of site, coordination, and culture for the site. in order to plan the principles and methods of the new design and does not ignore the environmental dimension, but rather enhances and raises its value in the site, which contributes to the comfort of residents or visitors as well as preserving the environment and energy. [24-29]. Fig.5

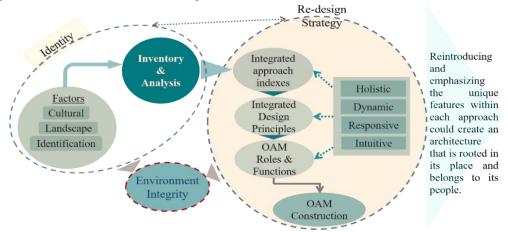


Fig.5 Integration elements to design open-air museum. By researcher

Thus, a proposal has been developed to design an open museum that can be applied in the proposed areas in a way that contributes to preserving the environment, energy, and resources and raising its cultural value. Fig. 6.[32-25].

Proposal concept and design determinants

- 1- Determining the main entrance from the beginning of the trip to the museum
- 2- The region/the cultural element is the dominant element in the project
- 3- Creating a plaza / recreational zone for the project linked to most of its elements .
- 4- The cultural zone is aligned so that it is linked to the entertainment arena and is clear at the entrance to the project.

- 5- The historical zone must include areas for rest and seating
- 6- commercial service elements such as a food court and children's zone should be close to the entrance and easy access to them through all the elements of the project
- 7- Blazers' and commercial stores should be distributed through the project's movement scenario to encourage the movement of trade and tourism.
- 8- distributed garages to meet all the numbers expected to arrive throughout the day to the site

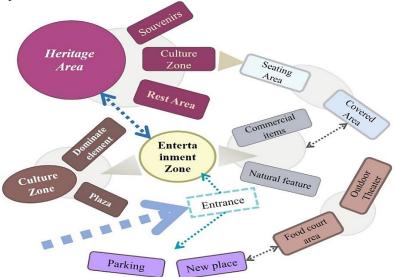


Fig.6. Suggested open-air museum functional diagram. By researcher.

# .4 Result and Discussion

The research demonstrates the importance of designing open museums in countries, presenting the

heritage value of the case study area, its challenges, and its ingredients. It also suggests a design to reformulate the area as an open-air museum.

Table 3. Integrated design approach conceptual criteria for designing an open-air museum.

	Analysis of the heritage area problems	Planning criteria for the open-urban museum
Environment	High pollution [4]\noise, traffic jam, no treatments about this, no shaded seats to protect from weather factors	-Reducing pollution in the urban area -Reducing noise -Protecting museum visitors from weather changes - Achieving sustainability by reducing pollution and water requirements
Urban	Distortion of the urban and architectural concept of the region Mixed uses Building state varies between dilapidated and good The deteriorated parts of the heritage buildings	- Developing degraded heritage urban areas -Preserving the components of the heritage urban spaces (floors-walls-roofs) -Building facades conserve, some building facades modify by adding parts whose design resembles that of the historic styleStreet floor pave by domestic granite Pavements using Granite tilesOptimizing infrastructure, total replacement of deteriorating networks (water, sanitation, electricity networks; and rain drainage networks) -improving current parking spaces and increasing parking areas near the museum - Stores facades sign replace in some parts of the street Night lighting provides outside the monuments.
Architecture	The demolition of some buildings of a distinguished character and replacement with residential buildings.  No vision for the formation of building facades	- Preserving the heritage architectural content -Rehabilitation and use of heritage buildingsMonuments totally restore, structurally, architecturally, in fine restoration.
Landscape	The plant component is a small area that does not exceed 5%. It is distributed in an unplanned manner, such as the remains of old plants and trees that were in the area.  There are no functional or recreational fountains or water sources in the area.	- Achieving design standards for hardscape elements (floors, furniture, stairs, and ramps-shading devices), soft (green spaces, landscaping, water elements, and sage plants), and complementary elements (lighting poles, landmarks, kiosks, signboards, and signs, trash cans, transportation stations, toilets).  - Landscape Coordination in a homogeneous and integrated manner -Availability of public services in the open museum -Lighting of coordination elements at night -Pave the street floor and pavements with granite and basalt blocks after specifying the street level -Putting seats and fences in front of historic buildings trash cans, identifying signs for monuments and distributing lighting units in the streets using cantilevers and lamps, manufacture for heritage styles.
Functional	The width of the sidewalks is not commensurate with the movement and density of pedestrians.  Deterioration of floors and sidewalks in some roads,  There are no special lighting units for pedestrian paths. Rather, it depends on shop lighting, and there are some disabled lighting poles.	- Diversity of uses -Adequacy of the functional uses of heritage buildings -Clarity of the beginning and end of the museum path -Adaptation of traffic paths to the density of users - Ease of movement, communication, and continuity - Direction of movement Allocate circulation paths inside the open-air museum for pedestrians, with vehicular movement allowed at specific paths and providing electric cars for serving visitors - Encouraging celebrations and festivals held in the street

		Table 3- continued
Functional		-Contract with security and cleaning companies for the open-air museum.  - Install electronic gates at the exits and inlets of the open-air museum to organize traffic at day for bicycles and motorcycles only besides police/fire fighting/ ambulance vehicles, and setting the dates of opening the street to vehicles for commercial purposes.  Adequate length of the museum path  Availability of public rest areas during the museum trip  There are special resting places during the museum trip  Convenience of landscape elements  Thermal comfort
Cultural	The area has heritage features that contribute to the enrichment of the cultural aspect, but they are neglected and untapped	- Raising visitors' awareness of the heritage area through symposiums held in cultural centersAvailability of advanced information guides -Diversity and their suitability to the region; stage/cinema with stands, sound, and light shows, art exhibitions, platforms for literary seminars, celebrations in public squares. Specialized fairs are held inside cultural areas. Some handcrafts fairs are held in the street Literary symposiums are held inside cultural centers .Putting identification signs -
Sociality	The region is inhabited by the middle class and less, and with the lack of organized cultural activities and the large spread of cafes, workshops and violence.	<ul> <li>-Achieving safety and security.</li> <li>-Achieve privacy.</li> <li>-Improving and raising the living environment.</li> <li>-Availability of social activities.</li> <li>-Displaying the culture, customs and traditions of the heritage area.</li> <li>-Street development will promote acceptable social activities such as friendly meetings, enjoying heritage buildings, and participation in events and programs held in the street.</li> </ul>
Economical	Lack of periodic maintenance, the low level of shops to suit the level of social visitors, and lack of investments in the area	<ul> <li>-Achieving an economic boom in the region.</li> <li>- Regular preventive maintenance.</li> <li>-Attracting investors and shareholders to the region.</li> <li>- Encouraging workshops, activities to bazaars, gift shops, and cafe equipment.</li> <li>- Allocating some streets for pedestrians only has a positive influence on improving trade at stores whose number increased in the development project.</li> <li>- The project attracted investors, such as the investment by the rehabilitation of a residential building to another function.</li> </ul>
Services and technological	Unavailability of food and beverage kiosks, information counters, toilets, rubbish bins, and public transportation stations.  There are no guiding signs that introduce visitors to heritage buildings or increase their knowledge of the area	-Reducing the consumption of natural energy -Using modern techniques in designing an open museum (informational directories, landscape elements, using modern lighting units for lighting heritage facades, providing electric cars for serving open-air museum visitors).
Visually	inconsistency in the elements of site coordination and the presence of infringements on heritage facades with formation, colors and signs	-Obstacle-free vision -Clarity of movement paths -Clarity of nodes -Good impressions generated from the facades (clarity and directness, intimacy, acquisition, Stimulus, excitement, relax, anticipation, dominate

Table 3- continued			
		-Clarity of buildings value	
	<del>,</del>	-The ability to see the distinctive signs	
	tract	Optical sequence-	
_	Att	Monumental scale-	
Visually		-Feeling of containment in the heritage spaces	
isn		-Intimate Scale	
>		-Diversity and difference of elements	
	Comfort	-The richness of the elements of urban spaces	
		-Consistency of design elements in the open museum	
		-The presence of aesthetic relationships and proportions	

#### 5. Conclusion

- -The study sheds light on an important goal of architecture which is to preserve heritage areas and architectural identity
- -The study dealt with linking with a group of axes in Cairo; the capital of Egypt; through which a scenario can be created for a series of open-air museums.
- -The study emphasized the necessity of paying attention to the heritage element at the outset and designing complementary elements without affecting it negatively but rather increasing and highlighting its value.

The cultural, heritage, and economic elements of entertainment must be integrated into the design of the open museum

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-Heritage areas represent an important turning point in the urban fabric with the diversity of land use and basic services.

Finally, the study recommended paying attention to the heritage areas and buildings located in different areas in Egypt, which have been neglected for many years, and maximizing the use of them by converting them into open museums in a way that enhances human health and creates open-air outlets in cities and capitals.

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