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ARCHITECTURE ENGINEERING

*An Outlook on Jordan Urban Public Open Space:**The Case-Study of Zarqa City*

نظرة للفراغ الحضري في الأردن - حالة مدينة الزرقاء

Samer Abu-Ghazaleh

إن الحاجة إلى فراغات حضرية دخلت الساحة فأصبح أكثر أهمية بعد دخول عصر الثورة الصناعية واكتظاظ المدن بالمباني والسيارات. وأن الناظر إلى الفراغ الحضري في القرن العشرين يدرك أنه فراغ مزروك أمام العيون وليس مصمما ليكون فراغاً حضرياً إنسانياً كما كان في الماضي .

يهدف هذا البحث إلى إلقاء الضوء على مشاكل الفراغ الحضري للمدينة العربية المعاصرة وباخذ مدينة الزرقاء في الأردن كمثال على هذه المدن. كما يتعرف البحث على العوامل التي تشكل الفراغ الحضري العربي الأردني من البيئة المحيطة إلى العامل التاريخي والترابي إضافة إلى العامل الإقتصادي . كما يحاول البحث وضع نصيب للفراغ الحضري في مدينة الزرقاء .

ويخلص البحث إلى وضع توصيات عديدة بما يتعلق بالفراغ الحضري العربي وكيفية تصميمه في المستقبل لتحقيق بيئة حضرية إنسانية موائمة .

Abstract

The need for public open spaces increased after the industrial revolution and became a critical need in crowded cities where the value of land is at the peak. The majority of the twentieth century urban open space are in front or between buildings that are far from the focus of the city as used in the past

This paper about Zarqa city in Jordan investigates its urban open spaces in terms of the factors that shape them such as the physical setting, historical precedent, cultural heritage and economic situation. It also classifies the morphology of Zarqa's urban open spaces into three types and spot light upon their problems.

An end it concludes several recommendations in terms of planning and designing Zarqa's public open spaces to fulfill environmental and social convenience

1. Introduction

1.1 Definition and Description of Open Space

The structure of urban context consists of two main elements: the positive elements that are blocks of buildings, and the negative element which is the around them.⁽¹⁾

The importance of negative space is stressed upon by several architects, planners and urban designers. Bacon describes the basic ingredient of architectural design as consisting of two elements: mass and space, and the essence of design as the interrelation between them.⁽²⁾

Gosling also emphasises the consistence of the city as a coherent experience in terms of formal solutions, in which the open space plays a major role.⁽³⁾

1.2 Historical Development of Middle Eastern Urban Open Spaces

The earliest civilizations of the Middle East made use of the simplest forms with geometrical relationship between each other. The rectangular plan of Ziggurats, the temple of Babylon civilization in Iraq, and the earliest circular plan of Mari and Qatna in Syria are two examples.⁽⁴⁾

The ancient urban open space was used for community meetings and was separated from religious forms physically and functionally. The market space was integrated with the urban fabric by commercial streets that open into different city quarters.⁽⁵⁾

The Graeco-Roman open space consisted of a main street with pillared pathway on either side led straightly to the city which was axial, and its main street is right angled with crossing streets.⁽⁶⁾ Intersections and termination of streets were landmarked by triumphal arches that created an exciting atmosphere to the urban open space. Theaters, stadiums and amphitheaters were built and used as public open spaces and had plazas connected to them.

The Graeco-Roman city existed in the Middle East during Greek and Roman periods where Damascus, and Palmyra in Syria, and Jerash north of Amman, capital of Jordan are examples.⁽⁷⁾

Islamic civilization dealt with urban open spaces differently. An irregular form bound a rectilinear space that is usually open and named courtyard. This was achieved in both public and private forms. A reduction in public buildings and public open space is clearly seen. No forums, theaters or gymnasiums were available as in Roman civilization. The open space is inwardly inverted due to religious and climatic reasons.⁽⁸⁾

1.3 Twentieth Century Urban Open Space

The majority of urban open spaces in the twentieth century are in front of buildings. They are usually the left over spaces between a group of buildings that have not been designed perceptually as open spaces. New urban open spaces are not made to be the focus of the city as in the past.⁽⁹⁾

The developers of the 20th century move their buildings back from the property line a few meters to provide more space for car parking instead of designing a plaza or a pleasant open space. The more the developing land is close to the city center the higher its value is and more difficult to provide for open spaces.⁽¹⁰⁾

Twentieth Century streets that facilitate vehicular movement lack human scale and human movement and they are becoming less human for people.⁽¹¹⁾

Modern economy leads people to depend greatly on vehicular transportation. The pedestrianisation of some streets is becoming much favourite in recent times to overcome 20th century problems.

2. Influences of Public Open Spaces in Jordan

2.1 Physical Setting

The geographical location plays an important role in determining the typological and morphological aspects of open spaces. The shape, size, height, ratio of open space to building and environmental aspects are all part of the factors that differentiate between various types of open spaces.⁽¹²⁾

Jordan lays west of the Fertile Crescent where the Mediterranean weather prevails. Zarqa is located in the upper central part of Jordan at the edge of Desert Climate, which is mainly hot during summer (fig. 1). During winter temperatures vary between 8 to 10 degrees centigrade with relatively low rainfall of 300 to 400 mm per year. A track of the Zarqa River is in the central part of Zarqa that divides the city into two sections, east and west.⁽¹³⁾ The climatic factor should limit any large open space and propose a dense environment to overcome the desert climate.

2.2 Religion and Culture

Jordan is an Islamic country and religion is reflected in its culture since the seventh century. The privacy in Islamic religion requires separation between private and public spaces. This would abolish axiality in public open spaces and require integration with nature.

Islam inherited many rich cultures. It preserved only symbols that support its principles. The colonnaded avenues and markets of classical European cities were transformed into the bazaar linear street with commercial shops on both sides.⁽¹⁴⁾

In Islamic cities open spaces were not independent squares as were in Roman forums, they were linked to the streets that flowed into them, where the Muslim street is rarely seen as a public way. Simplicity of Muslim culture resulted in the reduction of

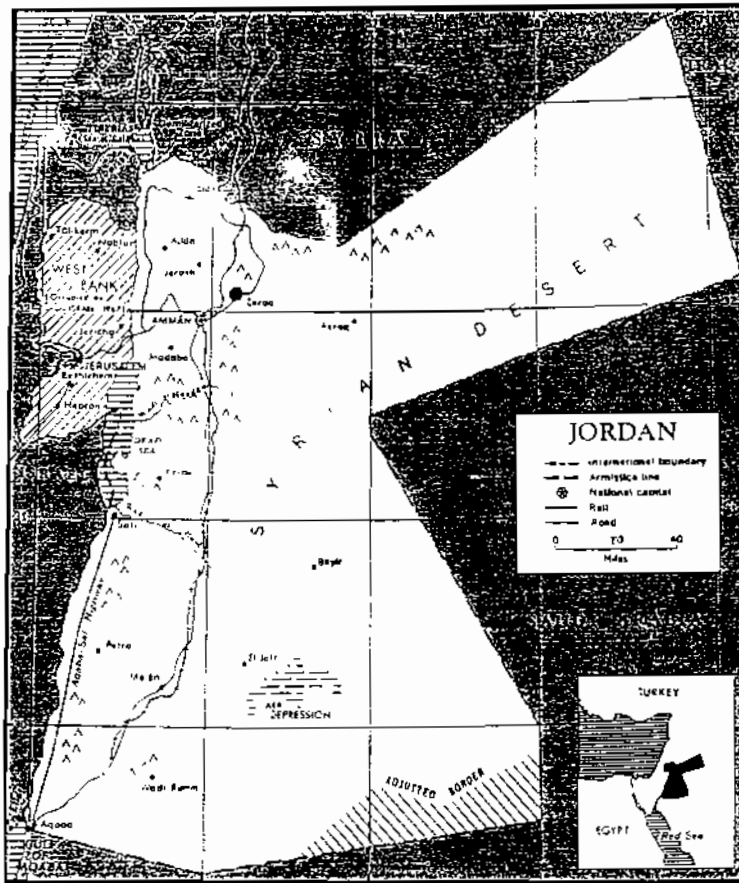


Fig (1) Location of Zarqa
Source: The Middle East, 1980

social activity, as the forums, basilicas, theaters and gymnasium of Roman culture were absent in a Muslim city.

2.3 Economic Situation

There are several factors that affect the urbanizational process of any city. The economic factor is one of the strongest that also shape the urban open space.⁽¹⁵⁾ Cities are considered as financial devices where the correct balance between population growth and its distribution will assure density equilibrium and uniform distribution of open spaces. A general pattern of urban land values provides a vivid overall picture of urban structure where the higher value, where offices and banks is radiating from the city center and where the public open space is at its lowest.⁽¹⁶⁾

A quick look at the city skyline clears its economic case, its effectiveness upon urban planning. Economic forces are always in conflict with public open space, where the provision of such open space is hardly achieved in city centers where economic forces rule the area.

3. The Case-Study of Zarqa Open Space

3.1 Past and Present of Open Space

Zarqa which is considered the second largest city, in terms of population with about 650,000 people, and the first industrial city in Jordan goes back in history to around 3000 B.C.⁽¹⁷⁾ During Umayyad Islamic period in the 7th century Zarqa Castle was built.⁽¹⁸⁾ This castle was transferred into a palace named Shabib in later epochs. Zarqa importance increased during Ottomans between 16th century and up until now. When Al-Hijaz rail ways line was extended between 1900 and 1908 to link Mecca in Saudi Arabia with Istanbul in Turkey, the line passed through Zarqa in Jordan, for the purpose of pilgrimage.

Zarqa importance increased when the Chechan people coming from central Asia, started to settle around Zarqa River in 1902. After this Zarqa became the base

for the military force that control eastern part of Jordan in 1926. A large number of houses were constructed in Zarqa to accommodate the soldier's families⁽¹⁹⁾

3.2 Development of City Structure

Zarqa is considered a new city. It started to grow up in 1918 and until 1976 no development plan was applied to Zarqa. Buildings grew in an irregular manner before 1976 and the lack of open spaces was clear. The city center now lacks car parking areas, pedestrian lanes, and public gardens.

After 1976 several areas were added to Zarqa for development until its total area reached 5.1 square Kilometer. in 1994. A provision of some 2,538,000 square meters or about 9.6% of the land subject to regulations in Zarqa, for open spaces were planned between 1976 and 1994. Only 53% or about 26,288,000 square meters of the total area of Zarqa is a regulated land. All the other 47% is a vacant land⁽²⁰⁾ (Fig. 2)

3.3 Zarqa Open Space

The equilibrium of density distribution inside Zarqa city is distributed. About half of the area of Zarqa, 5.1 square Kilometers, is empty. The rest building density varies from high (120 persons per one thousand square meters to almost nothing in other areas)

Open space area is around 0.55 square meters for each person in Zarqa, contrary to universal figure of 4 square meters per person in Jordan. This would suggest that the area of open spaces in Zarqa should be eight times the existing figure in later development of Zarqa, and new open space areas in the city center should be provided.

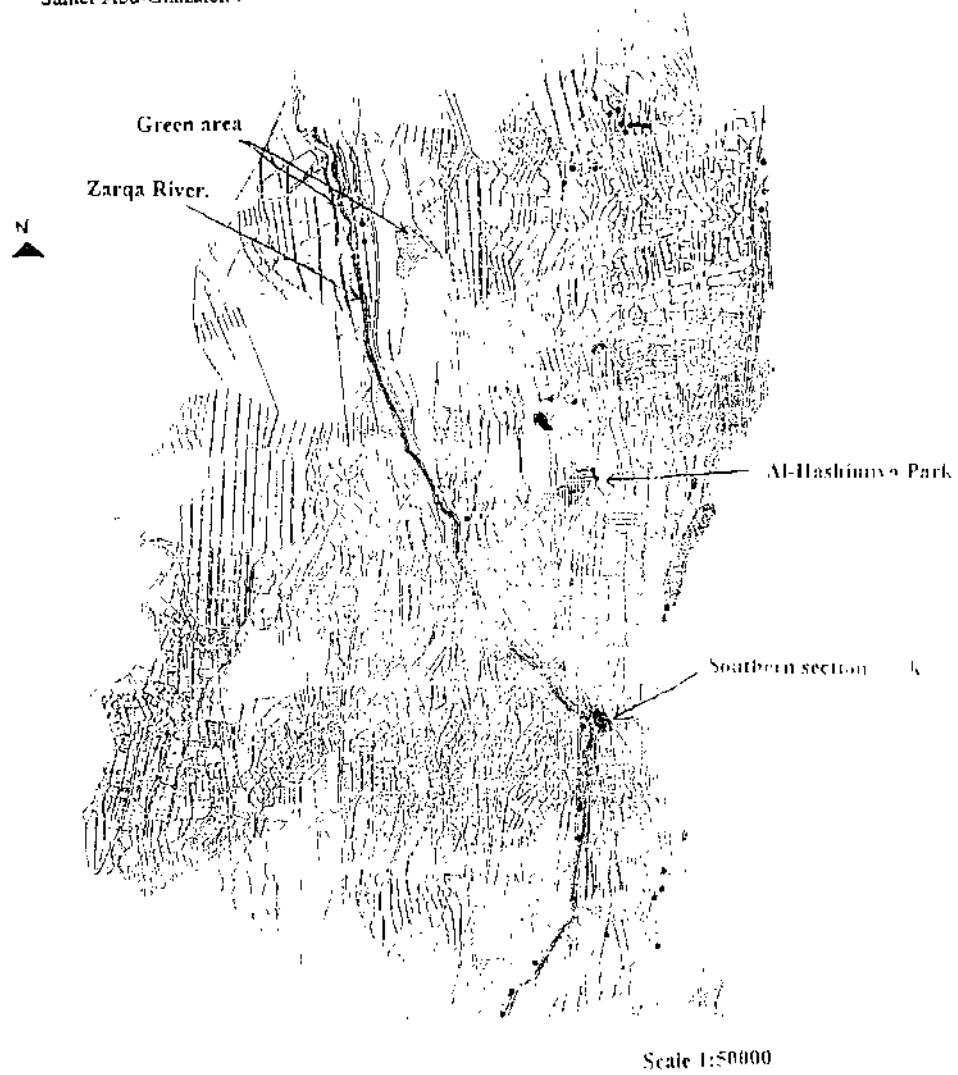


Fig. (2) Zarqa skeleton map
Source: Zarqa Municipality, 1995

3.4 Morphology of Zarqa Open Space

After studying public open space in Zarqa three classifications can be seen:

3.4.1 Pre-Planned Public Open Space

This type of public open space usually has a rectangular shape with an important building inside such as Al-hushimiya Park, where the museum of Zarqa exists (Fig. 3), or Queen Noor-Al-Hussien Park where the municipally building exists. The pre-planned public space can be also, a large park with various kind of activity inside such as Prince Mohammed Park that occupies about 96000 square meters where a children playground and a football ground were designed.

3.4.2 Irregular Public Open Space

This type of public open space has an irregular shape, and either planned for or not, it lacks human scale and livness. It is usually a space alongside highways or underneath bridges or a cross highway that users can not use. Southern section park (fig. 4) and Northern section park are two examples from Zarqa that look like a left over space in the city and not as a part of its morphology.

3.4.3 Green Area Zone

The third type of public open space in Zarqa is usually planned near the boundaries of the city to serve as a pollution controller. It usually exists near the industrial zone. Al-Istiklal park in northern section of Zarqa near the refinery and the Old Bridge of Zarqa Park of the southern section of the city, where the industrial zone and the solid waste disposal areas are located.

All the area around Zarqa River that penetrates through the city from the south to the north, dividing it to east and west is used as an agricultural land with green areas. (Fig. 5).



Fig. (3) View of Al-Hashimiya Park



Fig. (4) View of Southern Section Park

4. Problems and Solutions of Zarqa Public Open Space

4.1 The Psychology of Open Space

Public space is regarded as an important amenity. It depends on culture. Cultural heritage is expressed in our behaviour, and public open space is the most important element in the city.

The need for public parks increased after the introduction of the industrial revolution, and became a critical need in crowded cities where the value of land is maximum.⁽²¹⁾

Physical features in parks and public open spaces are important as the space itself. Some spaces are famous because of special features or because they are adjacent to a nice scene such as water front or green hilly area that overlooks a beautiful landscape.⁽²²⁾

Zarqa pre-planned public open spaces, as in many modern cities, are spaces between several buildings that has not been designed as part of the urban design. Mostly it is not an exciting nor an active kind of urban open space, and seems to be designed largely for convenience of planners and architectural photographers. It is designed as a place and not as an activity place.⁽²³⁾

4.2 Problems of Public Open Space

Several problems can be classified:

- a The universal ratio of public open spaces 4.0 square meter per person was not reached in Zarqa. The current ratio is 0.55 square meter per person. This creates a lot of pressure on public activities within the city.
- b The historical precedent and cultural heritage side by side to the climatic conditions were not taken into consideration in planning and designing Zarqa public open space.

- c. The activities undertaken in Zarqa public open space are limited compared to other cities.
- d. The design of the pre-planned public open space is criticised in terms of its hard and soft landscapes. Street furniture is very limited. (fig. 6) No telephone kiosks, lighting objects, disposal bins or flooring patterns exist.
- e. The irregular spaces alongside highways or underneath bridges cannot be used as public open spaces. It is un-accessible for regular users and can not involve a regular activity. In Zarqa this kind of space is used as parks and green area for regular uses.
- f. Industrial liquid disposal is directed to Zarqa River with minor treatment. This cause great damage to the water and becomes a source of visual and environmental pollution. Green areas around Zarqa River are insufficient to overcome this problem.

4.3 Solutions and Recommendations for Zarqa

- a. More area should be added to Zarqa public open spaces within the municipality boundaries to reach the universal ratio of open spaces of 4 square meters/person. Planners introduce minor changes to Zarqa skeleton map to achieve that ratio.
- b. Historical precedent and cultural heritage should be taken into consideration when planning and designing new public open spaces.
Climatic conditions should be stressed widely to achieve comfortable environment.
Public open spaces should be treated as a part of the urban tissue of the city and not as left over spaces.



Fig. (5) View of Zarqa River

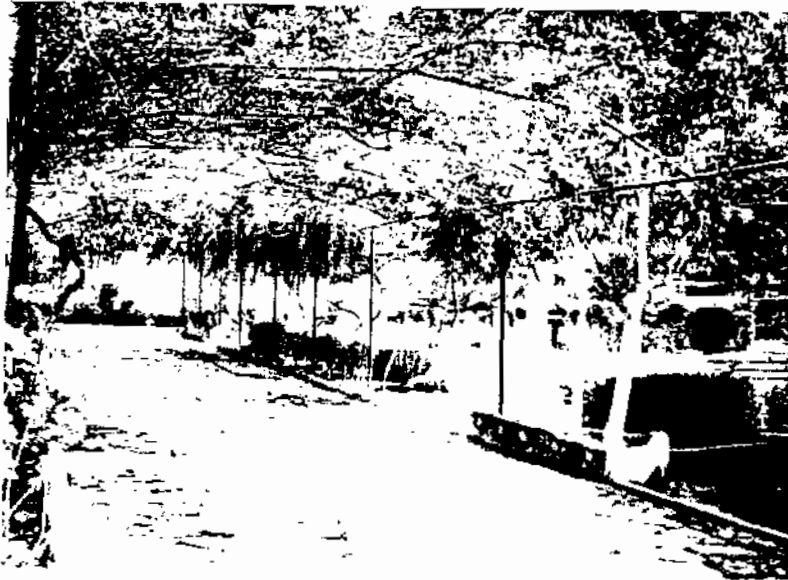


Fig. (6) View of Zarqa municipality Park where no street furniture existed.

- c. More activities within Zarqa's public open space should be planned
Libraries for adults and children, open theaters, restaurants, botanical gardens in new public open space designs.
- d. Street furniture such as seats, lighting objects, telephone kiosks, disposal bins, post boxes, flooring patterns and others should be provided and well designed in Zarqa existing and proposed public open space. Soft landscape should also be studied alongside hard landscape. Various kinds of local plantation should be encouraged.
- e. A comprehensive solution to Zarqa River pollution should be undertaken urgently. Well treated industrial water should only be allowed and a dense green area should be planned around the river
- f. A green area should be planned around the industrial Zone to the north and south of Zarqa. This should decrease environmental pollution and filter the city air. (Fig. 7)

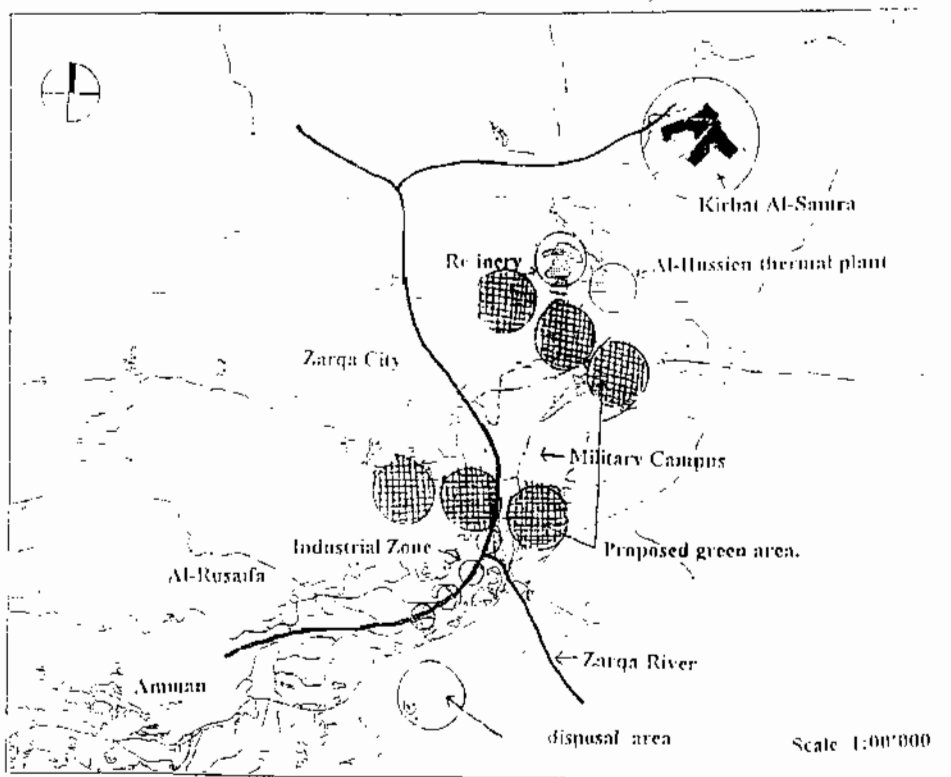


Fig. (7) Proposed solution to Zarqa open space.
Source: Zarqa Municipality, 1994

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