



## Activating the developmental potential of the historical center to city of Baghdad (Rusafa side)

PhD. Assist. Prof. Shatha Abbas Hasan

[shatha.a.h@coeng.uobaghdad.edu.iq](mailto:shatha.a.h@coeng.uobaghdad.edu.iq)

Department of Architecture/ University of Baghdad/College of Engineering

**Abstract:** The types of development potential in the city vary, from the nature of city, to its society, environment, economy, and history. The city of Baghdad contains many historical development potentials out of using, and most of them towards declining, this will be the research **problem**, within the **aim** of trying to clarify how to invest one of the important historical elements in the development of the city, based on the **hypothesis** that the sustainable development of the city should be stand on the activation of its historical assets. The historical wall of Baghdad is located on the Rusafa side, which is a wall that has not been left except for one gate and the site of another gate from it is four gates. This wall surrounds the city of Baghdad on the side of Rusafa, it was built since the late Abbasid period, the process of demolishing its parts happened in the First World War and the loss of the Ottoman Empire and the withdrawal of its troops from Iraq. The methodology will depend on old maps showing this wall will be obtained and matched with a corrected satellites image of the city through choosing of some common features, used as ground control; points (GCP). After determining the course of the wall, the land uses of the quarry are identified for this course and suggest how they can be changed with more appropriate other land uses. The importance of choosing this element would affect the sustainable development in society. This wall has an impact on the peaceful coexistence in the city, as it protected all residents of the city without discrimination. Also, this wall laying in most valuable land in the city, so that investment in accordance with its importance economically feasible. The third aspect is that the economic investment of the cultural and historical elements is one of the cleanest investments because it preserves the environment from contaminants as opposed to other productive investments.

**Keywords:** wall, heritage, Al-Rusafa, Baghdad, spatial techniques.

## تفعيل الإمكانيات التنموية للمركز التاريخي لمدينة بغداد (جهة الرصافة)

أ.م.د. شذى عباس حسن

[shatha.a.h@coeng.uobaghdad.edu.iq](mailto:shatha.a.h@coeng.uobaghdad.edu.iq)

جامعة بغداد / كلية الهندسة / قسم المعماري

### الملخص

تختلف أنواع الإمكانيات التنموية في المدينة، من طبيعة المدينة ومجتمعها وبيئتها واقتصادها وتاريخها. مدينة بغداد تحتوي على العديد من إمكانيات التطوير التاريخي غير المستغلة، ومعظمها متجهة نحو الاندثار، وستكون هذه مشكلة البحث، ويهدف البحث الى محاولة توضيح كيفية استثمار أحد العناصر التاريخية المهمة في تطوير المدينة، بناء على فرضية أن التنمية المستدامة للمدينة يجب أن تقوم على تفعيل أصولها التاريخية.

يقع سور بغداد التاريخي من جهة الرصافة وهو سور لم يبق منه الا بوابة واحدة وموقع بوابة اخرى منه، من أصل أربع بوابات. يحيط هذا السور مدينة بغداد بجانب الرصافة، وبنى هذا السور منذ أواخر العهد العباسي، تمت عملية هدم أجزائه أبان الحرب العالمية الأولى وفقدان الدولة العثمانية سيطرتها على المنطقة وانسحاب قواتها من العراق.

ستعتمد المنهجية البحثية على الخرائط القديمة التي تبين أنه سيتم الوصول الى تدقيق مسار السور ومطابقتها مع صورة أقمار صناعية مصححة للمدينة من خلال اختيار بعض السمات المشتركة، والتي تستخدم للضبط والتدقيق الأرضي (GCP) بعد تحديد مسار السور، يتم تحديد استعمالات الأرض في مسار هذا السور، ونقترح كيف يمكن تغييرها باعتماد استعمالات أخرى أكثر ملاءمة للأرض. إن أهمية اختيار هذا العنصر ستؤثر على التنمية المستدامة في المجتمع، إذ ان هذا الجدار له تأثير كبير على التعايش السلمي في المدينة، حيث حمى جميع سكان المدينة دون تمييز. كما أن هذا السور يقع في أكثر الأراضي قيمة في المدينة، بحيث يكون الاستثمار وفقاً لأهميته مجدياً اقتصادياً. الجانب الثالث يتمثل في أن الاستثمار الاقتصادي للعناصر الثقافية والتاريخية من أنظف الاستثمارات لأنه يحافظ على البيئة من الملوثات على عكس الاستثمارات الإنتاجية الأخرى.

**الكلمات المفتاحية:** السور، التراثي، الرصافة، بغداد، تقنيات مكانية.

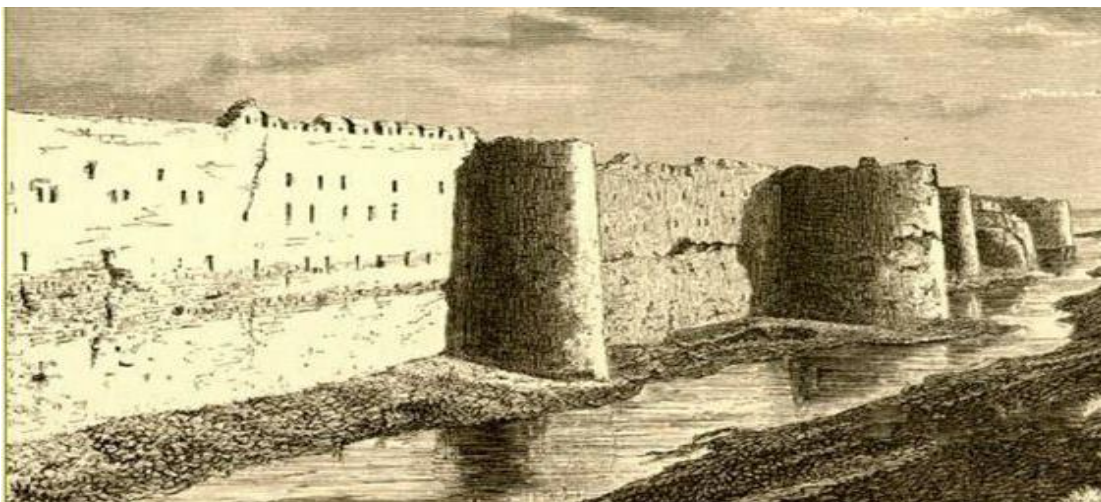
## 1. Introduction

Baghdad Alrusafa was founded at (775 AD), it was built by third Abbasid caliph (Al Mahdi), and he used it as a camp for his army. Then because it located beside Tigers River, with very good agriculture area, the people starting settlement in it, with short period of time Rusafa have population density greater than Circular City (Baghdad).

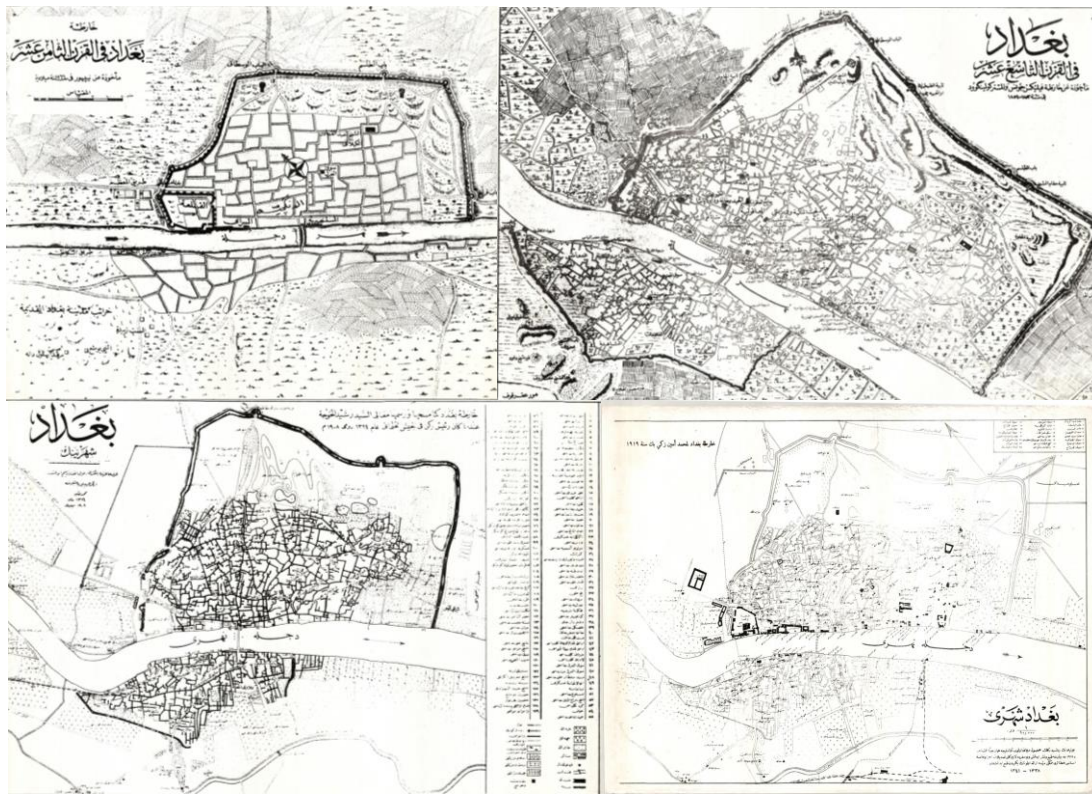
## 2. History of the Wall of Baghdad

One of the important buildings built in the Seljuk era is the Great Wall around East Baghdad, Which appeared to be created by the Abbasid caliph, Al Mustadher Be Allah, at (1095 AD), And was built during the reign of the Caliph Al Mustarshed Be Allah, at (1135 AD), This wall remained standing until the end of the thirteenth century AH, Nineteenth century AD, (Adhmi, p. 43).

It consisted of a thick wall of mud bricks supported by numerous towers, surrounded by a deep ditch connected to the Tigris River, it started from the north at the Tigris River near the northwest corner of the current Defense Ministry compound, and its end to the south at the Tigris River as well, in the section of the Bab Al Sharqiy near the Al-Jumhuriyah bridge (Adhmi, p. 44).



**Figure1. Demolished Wall of Baghdad Rusafa**



**Figure 2. Baghdad Rusafa through the time, 1800, 1900, 1908, and 1919.**

Source: Makiya, mohammed, Baghdad, alwarrak publishing ltd, Baghdad, 1<sup>st</sup> edition, 2005, P.p.(83, 86, 89), Mumayiz, Amin, Baghdad as I knew it, gemmes form lifelong memories, Lebanon, 2010, p.503.

### 3. Gates of Baghdad Wall

The wall has four gates: the gate of the Sultan, the gate of the Dufariyah, the gate of the Al Heleya, and the gate of Baslayah.

#### Gate of the Sultan

It is the first entrance to the wall on its northern side; it was called the gate of the Great Imam according to shrine of Imam Abu Hanifa al - Nu'man, also called the gate of the Sultan to descend the Sultan Seljuk (Tgralbk) in this gate,



before his entrance to Baghdad. This section remained standing until 1925, when the opening of Rashid Street and remains still visible between the Al Sha'ab Hall and the Al-Azbak mosque, (Alousi, p.42).



**Figure 3. Gate of the Sultan**

### **Gate of the Dufariyah**

It is the only gate that remains to this day, It was called al-Dufariyah, referring to a Mamluk man named Zafar, he had a residential area near the gate, It was also named the gate of Khorasan, because the way out of it leads to Khorasan, today it is called the Wastan Gate, being in the center of the wall, also is close to the tomb of Sheikh Omar al-Sahrwardi, (Alousi, p. 121).

The entrance consists of a high cylindrical tower, its perimeter is at 56 meters, and the height of the surface of the earth 14.5 meters, it has a door on the north-west side 3 meters wide, it was maintained in 1938, it was used as an arms museum and was named the Military Museum, then leave blank without using so far, (Adhmi, p. 45).



**Figure 4. Gate of the Dufariyah**

### Gate of the Al Heleya

It was named because of the racetrack near the gate location, and its location now in the current district of Bab al-Sheikh, Caliph al-Nasir Ldin Alaah renewed the gate in 1221, (Rauf, p. 140), also the gate named Bab Al Telesim, because the decorations that were in it contain symbols in the form of a seated man holding in every right hand and his left hand a large snake, as representative which is a symbol of the protection of the city, (Makiya, p. 61). The gate was blown up by the Turkish army when it withdrew from Baghdad March 11, 1917, (Mumayiz, p. 57).



**Figure 5. Gate of the Al Heleya**

### Gate of Baslayah

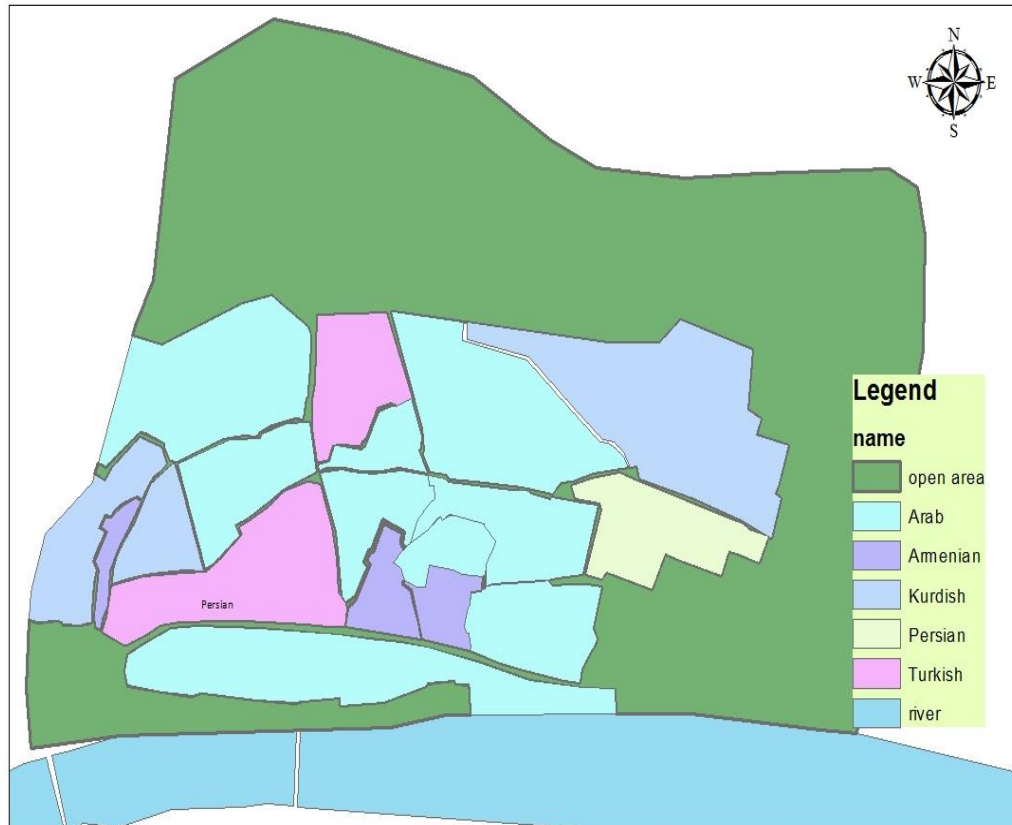
It is the southern entrance of the wall where it was located at its southern end, near the Tigris River, it was also called the gate of Cloa, because the way that is beyond it will lead to the village of Cloa, also called Al Bab Al Sharqy, it was demolished at 1938, (Adhmi, p. 44).

### 4. The importance and symbolism of the Baghdad wall

The historical wall of the Baghdad city has gained its importance from the safety element, which was adding to the all its different nationalities and religions lived inside this wall. The Baghdad wall is a symbol of peaceful coexistence through all

the events that have taken place in the city, so, all the inhabitants of the city benefited from the protection of this wall.

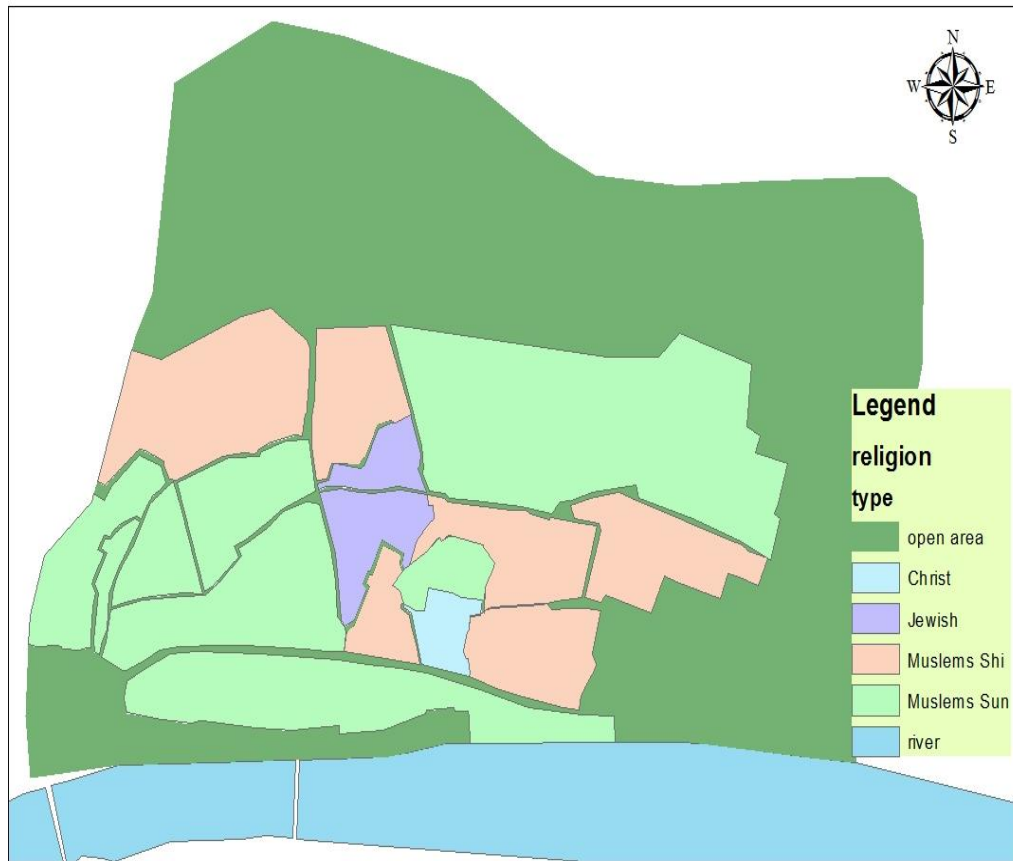
The figures (6) and (7), show the diversity of city people inside it is Wall, from all that we can recognize the impportunity of wall inside the collective memory of city people.



**Figure 6. Diversity of city people inside it is Wall according nations**

Source: research depends on (Al Jumaili, Rasem , The Baghdadi, 2<sup>nd</sup> edition, Baghdad, 2013).





**Figure 7. Diversity of city people inside it is Wall according religion**

Source: research depends on (al-Saffar, Ra'fat Marhoon, Old Baghdad neighborhoods in memory, 1<sup>st</sup> edition, Baghdad, 2011).

## 5. Finding out alignment of Wall

### *The first step*

To choose the best map for work, we analyzed all available historical maps, to elect any corrected and explained maps for adoption, so we adopted a set of criteria for preferring among historical maps:

- 1- The map should be before the recent changes that swept after the entry of the British army and the withdrawal of the Ottoman forces.
- 2- The features should be appeared clear in the map and do not mix with the explanatory writings or annotation on the map.



- 3- The map should be reliable, verified and certified by more than one scientific and research authority to verify its credibility.

On this basis the map was chosen (Baghdad in the 19th century on the map of Felix Jones and the Colleenquood), which has been shown in figure (9).

## **The second step**

Provide a high-resolution satellite image and is certified in terms of adjusting and correcting ground coordinates points, since such a process requires cost and time for field surveys, it has been completed in two steps;

- 1- The research looking for a corrected satellite image and approved coordinates for the city of Baghdad or any part of it, so, we obtained a corrected satellite image from the Geographic Information Systems department of the Mayoralty of Baghdad for the Adhamiya area in Rusafa, and it was very close to the historical center study area, it was with a precision of (60 cm).
- 2- The satellite image was adopted in the previous step as a basis for correcting the satellite image of the study area, by the method of (Image to Image), (The historical center of the Rusafa side), it was with a precision of (60cm), and it was from the same source (GIS department in Mayoralty of Baghdad).



### The third step

- 1- The research depends on correcting the shape, direction and scale of the historical map on the corrected spatial image, through adopting a set of selected points for connection and control between the satellite image of the city of Baghdad and the historical map.
- 2- The approved elected control points are the land marks that are still visible and have not changed places since the beginning of the twentieth century and so far.
- 3- The best points for this work were the famous shrines, tombs and religious buildings such as mosques or churches, Therefore, a number of points of significance that were common and obvious between the historical map and the satellite image were adopted, they are shown in the forms (8), (9).

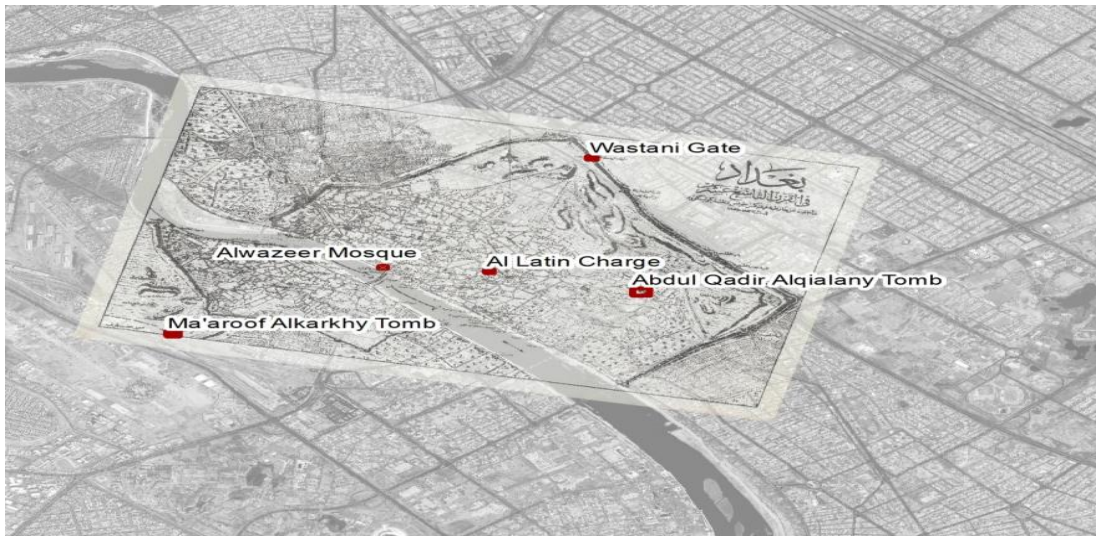
**Table 1.** Using exist reference point as control points

OBJECT ID	function	name	code
1	charge	Al Latin Charge	60
2	mosque	Alwazeer Mosque	64
3	Tomb	Omer Shihab Aldin Tomb	56
4	Gate	Wastani Gate	55
5	Tomb	Abdul Qadir Alqialany Tomb	58



**Figure 8. features used as control point between old map and image**





**Figure 9. distributing control points to create full coverage to georeferencing map**

#### The fourth step

- 1- Matching map with image to georeferenceing map to correcting positions.
- 2- Doing that by drooping locations from map to real location at the correcting satellite image to the same area.
- 3- Figure (10) showing the map merging with image.



**Figure 10. Adjusted historical map by referencing it on the image.**

### Fifth step: Verifying work accuracy

To verify the correctness and accuracy of the work, the matching of the wall with the three sites of the gates mentioned in the historical descriptions was approved, The site of the eastern gate (Al Bab Al Sharqy) near the Tigris River, the site of the Great Gate near the remains of the historical wall between the Al-Azbak mosque and the Al Sha'ab Hall, and remnants of the Gate of the Al Heleya.

- 1- Draw the path of the Wall based on the historical map after corrected direction, scale and location.

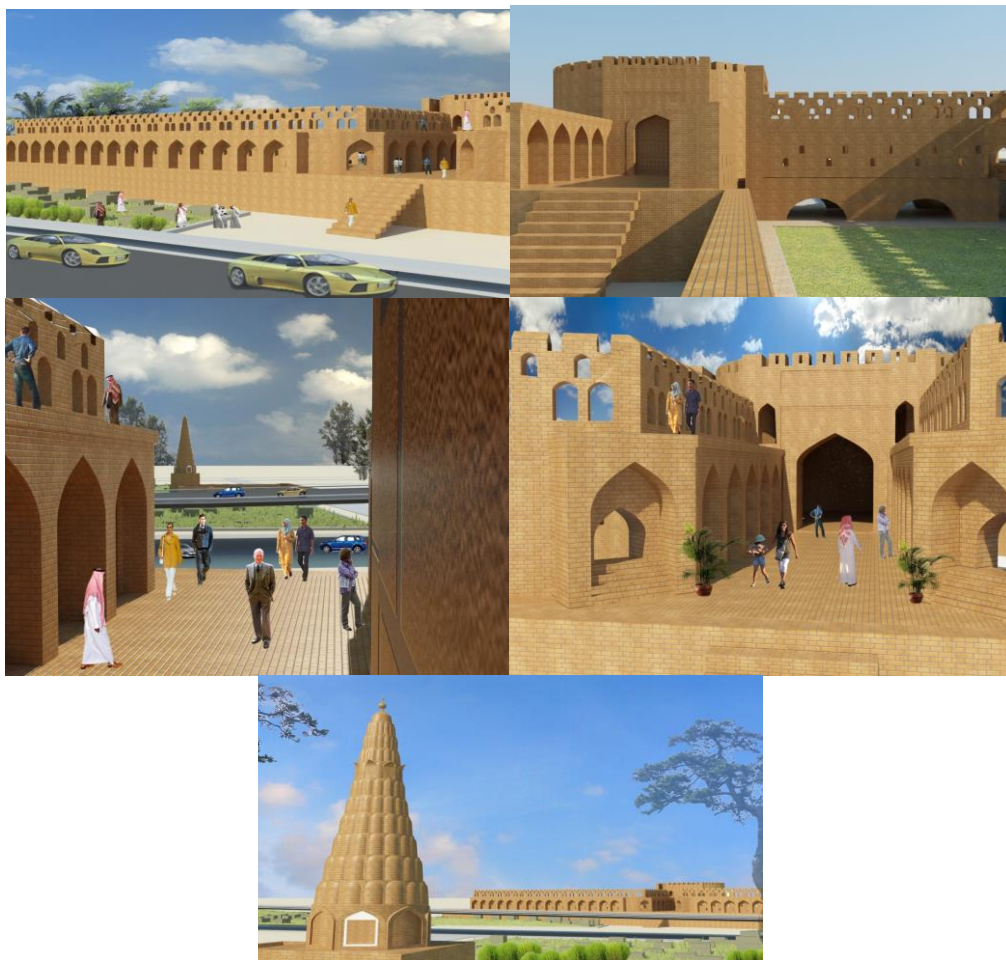


Figure 11. proposal to develop the study area.



## conclusions

- 1- It is very important to adopt modern spatial analysis techniques in the fields of preservation and the study of history because it reveals new relationships that were not realized.
- 2- The tangible heritage can be an essential element in the economic, tourism and social development of cities and highlight its identity.
- 3- There are many historical and heritage elements that can be revived and inferred through spatial analysis of the historical affiliation of their sites.

## Recommendations

- 1- The analytical techniques of the place and the spatial information systems must be included in the study materials of the majors disciplinary related to heritage and history.
- 2- It is necessary to redefine the identities of Iraqi cities by highlighting the events they went through and their locations.
- 3- It is very important to locate the removed historical and heritage elements and to introduce people to them, because it gives another reading of history.
- 4- It is possible to easily re-simulate the removed elements with others that carry the spirit of modernity and the permanence of the place.





## 6. References

- 1- Al – Adhmi, Khaled Khalil Hamoudi, Wall decorations in Baghdad, altaleaa press, Lebanon, 1980.
- 2- Al Hassani, Mohammed Hassan Salman, The old neighborhoods of grandparents in Baghdad, Baghdad, 2009
- 3- Al Jumaili, Rasem , The Baghdadi, 2<sup>nd</sup> edition, Baghdad, 2013.
- 4- Alousi, Mahmoud Shukri, History of mosques in Baghdad and its monuments, Baghdad, 2006.
- 5- al-Saffar, Ra'fat Marhoon, Old Baghdad neighborhoods in memory, 1<sup>st</sup> edition, Baghdad, 2011.
- 6- Data Resource Centre, University of Guelph, Georeferencing images in arcmap 10.1.
- 7- M J Hamzah, M A Ebraheem, Analyzing Urban Attraction Nodes by using GIS and Space Syntax (case study-Al-Adhamiya), IOP Conf. Series: Materials Science and Engineering 737 (2020) 012181.
- 8- Makiya, mohammed, Baghdad, alwarrak publishing ltd, Baghdad, 1<sup>st</sup> edition, 2005.
- 9- Malk Jamal Hamzah, Mustafa Abduljalil Ebraheem, USING COLLECTIVE MEMORY TO BULID AUTHENTICITY CASE STUDY (AL-ADHAMIYA AND AL-KADHMIYA DISTRICTS IN BAGHDAD-IRAQ), International Journal of Civil Engineering and Technology (IJCIET), Volume 9, Issue 10, October 2018.
- 10- Malk Jamal Hamzah, Mustafa AbdulJalil, Place Energy and Urban Scene Drama in Iraqi City Centers (Case study Rusafa district in Baghdad-Iraq), IOP Conference Series: Materials Science and Engineering, Volume 518, Issue 2, 2019.
- 11- Moheb Kamel Al-Rawe, Cancerous expansion of the city of Baghdad, Turkish Journal of Computer and Mathematics Education (TURCOMAT), Vol. 12 No. 13 (2021)
- 12- Mumayiz, amin, Baghdad as I knew it, gemmes form lifelong memories, Lebanon, 2010.







- 13- Mustafa Abduljalil Ebraheem, Zainab Abbas Ahmed, Function of Urban Space in strengthen social interaction through Time, Journal of planner and development, Vol. 25 No. 3(Suppl.) (2020).
- 14- Rauf , Emad Abdel Salam, Baghdad schools in the Abbasid era, 1<sup>st</sup> edition, Baghdad, 1966.
- 15- Tufts University ArcGIS Tip Sheet, How to align a non-georeferenced image to an existing geographic layer or georeferenced image, revised 24 April 2007.