

The Preservation of Significant Islamic Architectural Heritage of Al-Mustansiriya School, Baghdad City, Iraq

Omar Khasro Akram, Nada Fadhel Mohammed Jamil, Daniel José Franco, Sumarni Ismail, Andreia Graça

Abstract: Baghdad City is distinguished by its rich Islamic architectural heritage. Deterioration of heritage building values can affect the city itself as well as the country in general. This research highlights the issue that Al-Mustansiriya School, located in Baghdad City, is facing. There is no attention from local population neither governmental protection to its architectural heritage values. Therefore, there is a dire need to preserve the heritage school, aiming to increase not just tourism to the city, but also to the entire country. After the introduction of the background problem, this research presents the existing literature on Al-Mustansiriya School, highlighting the significant historical values, then summarizing the issues that it is facing. The methodology of this research uses a case study, following a qualitative method. This study contributes to the identification of the significant architectural element values of the place, proposing a theory on the protection of Islamic Architecture Heritage from the issues that Al-Mustansiriya in Baghdad City is facing and highlights the important role of local organizations and archaeologists in preservation of heritage sites, with its recommendations. It helps on the protection and documentation of heritage values in Al-Mustansiriya, having a global impact towards humanity issues.

Keywords: al-mustansiriya school; heritage values, islamic architectural heritage, preservation, baghdad city

I. INTRODUCTION

Baghdad is the largest city in Iraq and is situated on both sides of the Tigris River at a point of 40 miles from the Euphrates River. The city is approximately 300 miles from the northern, southern, and western borders of the country. It has a temperature range of 29°F (-1.6°C) to 31°F (-0.5°C) in the winter and 114°F (45.5°C) to 121°F (49°C) in the summer. The name and the site of Baghdad are pre-Islamic, where the etymology of the name is not clear.

It is not of Arabic origin and may be a combination of two Persian words, bad and dad, which together mean gift of God. Others suggest that the name existed before the time of Hammurabi as the name Baghdadu, where records of Baghdad's early history before Islam are sketchy.

Though, there are some indications that in the late period of the Sassanid and at the time of the Islamic conquest of Iraq, Baghdad was a small village next to major cities such as Ctesiphon of Sassanid (Akram, Ismail, & Franco, 2016b; Strange, 1930).

Baghdad was founded on the west bank of the Tigris by al-Mansur, the second caliph of the Abbasid Empire, in 762 c.e and was considered the administrative capital of the new empire. The construction of Baghdad was completed in 766 c.e., costing more than 883,000 dirhams and employing more than 100,000 architects, craftsmen and workers, drawn from all over the Muslim world. It was built in a circular form, in the Parthian Sassanid tradition (Strange, 1900).

The city had three concentric walls with four gates opening toward Basra, Syria, Kufah, and Khorasan. It was surrounded by a deep moat and had four highways radiating out from the four gates. Unlike the Greek, Roman, and Sassanid emperors, who named cities after themselves, Al-Mansur chose the name Dar AL Salam, abode of peace, a name alluding to paradise. Furthermore, he did not object to the use of the ancient city name of Baghdad. The city later gained many more appellations, including Al-Mudawara, meaning round city, because of its circular form, and Al-Zawarh, meaning the winding city, because of its location on the winding banks of the Tigris (Strange, 1930).

The city area was chosen because of its strategic location in the middle of Mesopotamia. It was a meeting place for caravan routes on the road to Khorasan. It had a system of canals that provided water for cultivation and could be used as ramparts for the city (Figure 1). Baghdad lost its splendor with the decline of the Abbasid Caliphate due to religious, ethnic, and regional strife. In 1258 c.e. Hülegü Khan, the grandson of Chinggis Khan (Jengis Khan), sacked Baghdad. He burned the schools and the libraries, destroyed the mosques and the palaces. The fall of Baghdad at the hands of Hülegü and the subsequent destruction of Baghdad by TimurLenk (Tamarlane), in 1401, were turning points in the history of the city, and the city never recovered. Successive Persian and Turkish dynasties have controlled Baghdad (Akram, Ismail, & Franco, 2016b, 2016c; Strange, 1900).

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Omar Khasro Akram, Universiti Putra Malaysia, Malaysia
Nada Fadhel Mohammed Jamil, Foreign Affairs Office, Kurdistan Region, Iraq
Daniel José Franco, Universiti Putra Malaysia, Malaysia
Sumarni Ismail, Universiti Putra Malaysia, Malaysia
Andreia Graça, Polytechnic Institute of Beja, Portugal



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Fig. 1 The Round city of Baghdad, Built by the Abbasid Caliph Al-Mansur in AD 762-767, Diameter: 2KM (1.2 mi) – source: <http://www.blazeweek.com>

Based on these initial considerations, this research assumes a main research question and three objectives (Akram, Mohammed Jamil, Franco, Graça, & Ismail, 2018). Main Research Question: What is the significant Islamic Architecture Heritage of Al-Mustansiriya School, Baghdad, Iraq to be preserved?

Research Objectives:

- To identify the significant historical values of Al-Mustansiriya School;
- To analyze the main architectural elements to Al-Mustansiriya School in Baghdad City;
- To highlight the role of local organizations and archaeologists in the preservation of Al-Mustansiriya School (Akram et al., 2018).

II. LITEATURE REVIEW

Historical Background

The importance of Al-Mustansiriya school, at that time, is that it was the first school dedicated to study the four Islamic doctrines: Maliki, Shafi'i, Hanbali and Hanafi, which are a set of opinions and beliefs in the field of Islamic religion, while the previous schools were specialized in studying only one of the existing doctrines. The aim of building the Mustansiriya school was to unify the Islamic nation against the anti-Islamic intellectual currents.

The next schools that were built then imitated the same approach adopted by the Mustansiriya school in teaching the four doctrines of Islam. Here, the importance of the Mustansiriya school in that period, came from being an official institution that provided the Abbasid with scientific human resources, because the last Abbasid period was distinguished from other Islamic eras, which preceded it by the appearance of schools as places of education of Muslim (Akram, Franco, & Ismail, 2016c; Strange, 1900, 1930).

The school system became a very important necessity in the new circumstances. Islamic society, as a result of the development of society and the emergence of the need for the state to supervise the educational system to achieve its objectives, felt the need of official and administrative staff to occupy positions in the state and functions, so the school became an official organization of the state to graduate educated human resources (Arnold, 1922).

This school was known as Al-Mustansiriya, in the name of its builder, the Caliph Al Mustansir Balah Abi Jaafar Al Mansoor, where it was common, in the Islamic ages, to name the school and other buildings after the name of its builders (Figure 2), Al-Mustansiriya School was completed

in 631 AH 1233 AD (Franco, Akram, Ismail, Mohammed Jamil, & Graça, 2017; Rice, 1979).

At the beginning of the Islamic era the mosque was the first place of education for all Islamic doctrines, so the establishment of the Al-Mustansiriya school was the completion of the course of development of science institutions in Baghdad. The school is located in downtown Baghdad, in the eastern side to the left bank of the Tigris River, where, on the west side, is the Tigris River and to north Al-Ashafiya Mosque (Dodge, 1962; Herzfel, 1923).



Fig. 2 Al-Mustansiriya school with its Islamic Architecture Style – Source: <https://www.al-monitor.com>

Protecting Al-Mustansiriya School

The preservation of Islamic architecture heritage faces a large number of problems that can be attributed to social and economic development (Figure 3):

- Lack of awareness about the importance of urban heritage;
- Lack of funding to achieve conservation;
- Absence of legal protection;
- Lack of community and private sectors' participation;
- Failure to develop appropriate mechanisms to increase community and private sectors' participation in conservation;
- Some kind of illiteracy that has descended on the bodies responsible for the protection of monuments and heritage in Iraq.



Fig. 3 Façade ruins by using method of fixing rain pipes in the heritage ones- source: Authors

Proposition Theory

The preservation of Islamic architectural heritage in Al-Mustansiriya School, increased the impact of heritage tourism to the city itself, giving opportunity to revive the economic values of the country, while protecting the Iraqi civilization (Akram et al., 2018).



III. RESEARCH METHODOLOGY

The qualitative method is effective on this research in the way that it is used to obtain information about Al-Mustansiriya School, like historical background about the school, significant architecture preservation of the place such as plan and architecture of al-mustansiriya school, school building, entrance, al-sahan, al-iwan, the mosque, the rooms, the halls, al-riwaq, decorative elements, al-moosnat. The exploratory case study adopts the most common qualitative approaches, based on main the research question and the nature of this research, in order to identify their problems and to find a solution for this issue, making it possible to protect them from possible losses (Franco, 2014; Graça, 2017). Case studies are composed by five different components (Yin, 2009). In the specific case of this research, where heritage school is adopted as the exploratory case study, the components are:

Study Questions:

Already mentioned in introduction of research, this research aims to answer the following questions:

Main Research Question: What is the significant Islamic Architecture Heritage of Al-Mustansiriya School, Baghdad, Iraq to be preserved?

Study Proposition:

The preservation of Islamic architectural heritage in Al-Mustansiriya School, increased the impact of heritage tourism to the city itself, giving opportunity to revive the economic values of the country, while protecting the Iraqi civilization.

Unit of Analysis:

Al-Mustansiriya School Buildings (plan and architecture of al-mustansiriya school, school building, entrance, al-sahan, al-iwan, the mosque, the rooms, the halls, al-riwaq, decorative elements, al-moosnat). Those main findings will measure by types and numbers.

Linking Data to Proposition:

Identifying architectural elements in the plan of heritage school through archival analysis, literature content, observations (triangulation).

Criteria for Interpreting the Findings:

The agreement among experts to the need of documentation of the heritage school.

IV. RESULTS AND FINDINGS

Plan and Architecture of Al-Mustansiriya School

If we look to the planned Mustansiriya school (Figures 4 and 5), it is possible to find that the current building occupies an area of an approximately rectangular shape with 105m long and 44.20m width, expanding, in the south-eastern direction, to a width of around 48.80m, with a total area of about 4836m² (Rivoira, 1918).

The building has an open courtyard called *Al-sahan*, which is a rectangular shape of 62.40m, with an area of 1740m², increasing to one-third the total area of the building. Islamic architecture styles, spread wide all over the world, including a large type of religious and secular styles,

highly influencing not just the designs but also the structures and building constructions in the Islamic culture.

It is possible to identify different types of Islamic architecture, that have enriched the structural shapes, starting from Mosques, Schools, Forts, Gardens, Houses, Domes, Unique Arches, Vaults and so on.

The rich vocabulary created by the Islamic architecture may also be used by buildings that present a more reduced importance, like fountains and public baths.

Regarding Islamic architectural heritage, it can also provide good knowledge when dealing with hard environmental conditions. On the harsh climate in Baghdad City, with a long summer period came the harsh climate solutions to reduce the difference in temperature between the inside and the outside (Rice, 1979; Strange, 1930).

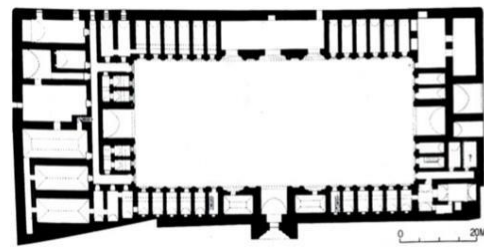


Fig. 4 Ground floor plan 2D - Source: <https://classconnection.s3.amazonaws.com>

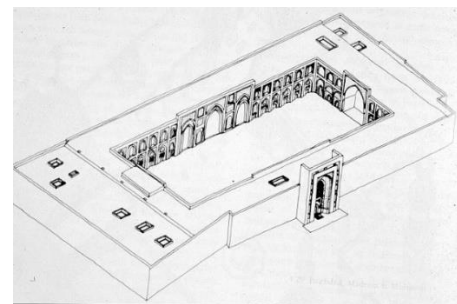


Fig. 5 School's 3D Model – Source: <http://www.essential-architecture.com>

School Building

The school was built with yellow bricks of high quality, made with different shapes and sizes and varying according to its use. It was used in the construction of cylindrical columns and various other supports (Akram, Franco, & Ismail, 2016a).

The building is characterized by not covering the surfaces of the walls with any coating (Omar Khasro Akram, Franco, Ismail, Muhammed, & Graça, 2016a), decorated with natural motifs (ornamentation of brick-level ornamentation), and it is the architectural feature of this era. It is noted that the exterior of the building is huge, high and decorated with motifs in some parts, especially the upper section, which overlooks the Tigris River, extending a bar of memorial writings (Akram, Franco, Ismail, et al., 2016a; Akram, Ismail, & Franco, 2016d; Franco et al., 2017; Lima, 2011).

It is also noticed that there is no window on the large walls, except for the wall facing the Tigris River.

It is intended to prevent external noise interference inside the school and to ensure the largest amount of health and tranquility of its residents, to reduce the degree of freedom, it is used light and air into rooms and halls, through window openings in the highest ceilings and rooms' doors and halls, where hot air is higher. The ceiling and air inside the doors of the rooms and the halls facing the spacious courtyard, with middle water fountains and some trees, make the air inside the rooms cooler and cozy (Jairazbhoy, 1972; Porter, 1909).

Entrance

The entrance to the school is located almost in the middle of its northeastern side, which is higher than other parts of the building, with almost sixteen meters, as it stands out from the wall in about three and a half meters wide, making the entrance to Mustansiriya, despite the absence of the idea of fortifying the gates of religious, an important building among Muslims (Blake & Frye, 1949; Ibn Khaldun, 1974).

It seems that a great place was given to this entrance, in terms of its construction, shape and decorations and by indication of interest of the caliph. When entering the school, it is clearly understandable how unique and majestic this entrance is.

The entrance (Figure 6) is decorated with an ornate façade, surrounded by a frame of decoration representing geometric shapes with a relatively large size. This frame encloses within a large, pointed-shaped contract culminating in the entrance, stretching its edges below the wall, in a decorated space (Herzfel, 1923; Kritzeck, 1959; Marçais, 1954). The upper part of the frame is also filled with decoration. It is located at the bottom of the façade includes geometric motifs (Creswell, 1958).

The decoration and the pointed knots at the top of the façade are a commemorative inscription in the Thuluth script showing the words above the mulch of branches and branches of a leafy plant, enhanced by splendor and beauty, and placed in ten lines or ribbons (Akram, Ismail, & Franco, 2016c).

The interior passes to the school, which resembles the Iwan with a roof decorated in a tapered vault overlooking on the (Al Sahan) are a large and tapered contract whose sides are centered on two built-in double pillars of a cylinder adhering to the wall. This large bridge mediates a luxurious façade to the entrance overlooking Al Sahan and the two sides of the two rooms on either side of the entrance appear overlaid with decoration (Herzfel, 1923).

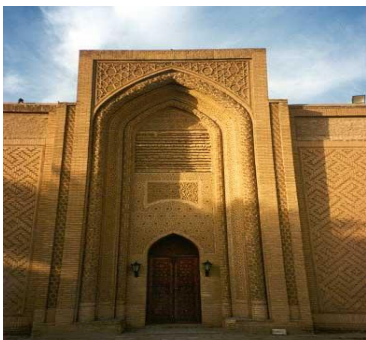


Fig. 6 Main entrance of school- source: <https://archnet.org>

Al-Sahan

As we pass through the entrance to Al-Mustansiriya, we reach a wide, rectangular square figure (Al Sahan) (Figure 7). This arena is the main source of light and air for building units in the school, and all door openings lead to this central square directly or indirectly directly (Akram et al., 2015, 2018; Strange, 1900). It was in the center of this square that the water was diverted from the Tigris River, to supply the different places used for drinking or washing and so on (Kritzeck, 1959).



Fig. 7 Al-sahan surrounded by historic Islamic Architecture buildings-source: <https://archnet.org>

Al-Iwan

In Arabic language, Iwan means a hall opened from one side and with a high ceiling overlooking a courtyard. Facing the inner courtyard of the school, are two Iwans, one of them on the North West side, and the other in the south-eastern side (Creswell, 1958; Franco et al., 2017; Hattstein and Delius, 2000; Marçais, 1954).

The construction of Al-Iwan, in opposite positions, is due to the attempt of the architect to address the problem of the changing continental climate in summer and winter (Ibn Khaldun, 1974; Marçais, 1954; Rice, 1979). The northwestern wall is treated by the winter cold for exposure to the sun, while the south-east is suitable for the summer, because it avoids the high sun. Such an architectural phenomenon was clearly manifested in residential buildings in Iraq since ancient times of Babylon and Assyria, and in the buildings and palaces of Islam such as the palace of Al-Ukhaidhir, Qasr al-Jusaq and some houses in Samarra, being spread to the heritage houses in Iraq Baghdad (Akram, Ismail, & Franco, 2016b, 2016e).

The Mosque

The existing mosque is located in the south-west of the building, in direction to Kabba in Makka and faces, inside, the courtyard with a façade that almost occupies one third of the southwestern rib. This interface consists of two pillars between the right and left sides of the prayer house, with three large pointed arches as entrances leading to the courtyard (Dodge, 1962; Herzfel, 1923).

The shape of the entrance of the mosque is influenced by the Hier style, where the mosque has a rectangular shape (23 × 5.90), containing a hollow niche in the middle of the Qibla wall, in a rectangular form with 5.20m in length, 1.90m in width meters and 1m in depth.

A pointed contract centered on two pillars of bricks, in the shape of two columns attached to the wall, each with a length of 2.90 m (Richmond, 1926).

The Rooms

Al-Mustansiriya contains many rooms built on two floors and surrounded by a courtyard in all sides designed between the two Iwans, entrance and mosque. The number of rooms on the first floor is around 40 rooms, while, on the second floor, is just 36, separate from each other. The rooms on the second floor are reached by six stairs, two located on both sides of the entrance on the right and the left, two located on the both sides of the northern Iwan and two located on both sides of the house of the mosque (Akram, Ismail, & Franco, 2016f; Akram et al., 2015; Akram, Franco, & Ismail, 2016b; Herzfel, 1923; Rivoira, 1918).

Rooms on the second floor are smaller than the lower ones, because the second floor contains the corridor leading to the rooms. The corridor is about 1.30m×1.50m and its structure is composed by a series of pillars that are bound by pointed contracts. Each opening is approximately 1.70m in width. All the rooms are open to the balcony, and they do not contain windows, apart from those that overlooks the Tigris River (Kritzeck, 1959; Lethaby, 1904; Porter, 1909; Rice, 1979).

The Halls

In the south-east of the building there are seven large halls with different shapes and dimensions and with high ceilings, reaching a high building. The ceilings of these halls have different types, where the dimensions are as following: The first hall is a rectangle (13.50×4.30m). The roof of this hall is in the shape of a cellar and in the center of the ceiling it is possible to find a hole for lighting and air flow; The second hall (66m²) is a square with a cross-shaped roof, resembling the shape of the pyramid quadrilateral, with an opening for light and air flow. The hall has a corridor with 8.10m long and 1.20m wide; The third hall dimensions are 6.10×3.80m; The fourth hall dimensions are 13.50×7.50m; The fifth hall dimensions are 13.50×6m; The sixth hall dimensions are 11.50×5m; The seventh hall dimensions are 11.50×5.3m.

These measurements are based on the field study, but there is a difference in measurements in other researches due to the maintenance work and restoration of the walls (Rice, 1979; Richmond, 1926).

On the north side, there are fewer more halls than on the south side. Two large rooms at the western corner have rectangular areas: First hall: 11.90×4.30m; Second hall: 11×5.90m; Third hall: 7.40×3.40m; Fourth hall: 5.70×3.10m.

There is a rectangular corridor separating the first and the second halls and from the third hall and the fourth hall, leading to Al Sahan. Also, there are two large halls on each sides of the building's entrance (6.80×4.30m) (Karlsson, 2006; Rivoira, 1918; Strange, 1930).

Al-Riwaq

The south-eastern Al-Riwaq, is located in front of the large halls to the south-east of the building and is connected to the school's courtyard by two passages, one to the right of the south Iwan and the other one on the left of the same Iwan. Al-Riwaq has a length of around 33,80m, a width of

around 1.40m and a high ceiling of 9m. This roof is a vaulted vault with four openings, working as windows (Akram, 2017; Marçais, 1954; Rivoira, 1918).

Al-Moosnat

Al-Moosnat, meaning a barrier built to keep back water along the Tigris River, is located on the western side of the Mustansiriya school (Figure 8) and consists on a large and thick building that is built to support and protect against the impact of the river. The front part of the school is facing the river and is decorated with memorial writings that may be easily read. Also, there are evidences of the existence of gardens for stroll and decorations (Kritzeck, 1959).



Fig. 8 Al-Mustansiriya school located on Tigris river side – Source Authors

Decorative Elements

The Mustansiriya school building has decorations (Figure 9) that were common in the Abbasid period and are very impressive for their beauty and good coordination. The material used in these motifs are mainly bricks, which can be easily made with a good quality, due to the quality of the clay extracted from different deposits of the Tigris River in the city of Baghdad (Karlsson, 2006; Porter, 1909; Strange, 1930).





Fig. 9 The Mustansiriya school building has decorations that are very impressive for their beauty and good coordination- Source: <https://archnet.org>

The Iraqi architecture was able to create a variety of exquisite shapes from the different types of regular blocks to different forms and sizes, in accordance with an engineered plan that composes decorations on a large side of precision. In addition, the engraving of the motifs, on the block pieces, varies among their levels and their variation, between light and shadow, achieving clarity and embodiment of decorative elements (Akram, 2017; Akram, Ismail, & Franco, 2016b; Akram, 2013; Franco et al., 2017).

Al-Mustansiriya School has included exquisite decorative elements, such as the tapestry we use in a technical way by manipulating bricks, as well as various geometric motifs such as rectangles, squares, triangles, hexagons and many other Arabic motifs, which were often used in the decorative themes. Also, it is possible to find the inscription in the writing of the Kufic script, mentioning the history of the school, propaganda and a verse from the Holy Quran. The façade on the Tigris River also included Kufic's scripts (Karlsson, 2006; Kritzeck, 1959; Lethaby, 1904).

V. THE ROLE OF LOCAL ORGANIZATIONS AND ARCHAEOLOGISTS IN PRESERVATION PLAN

Al-Mustansiriya school is a national affair and that would concern all Iraqi citizens and visitors. The involvement of Iraqi universities and Iraqi experts have a great impact on revitalization of Al-Mustansiriya school and the establishment of a computerized data base to document and collect data from literature, previous studies and related scientific references in the field of research, providing a view on the development of a strategic framework that helps to preserve and protect the urban heritage of Mustansiriya School.

Also, by holding a number of meetings and workshops among Iraqi archaeologists and Iraqi universities and governmental sector in concern, to develop strategies and action plans, whether at the local or global level, as well as new measures should be introduced to increase community awareness, promote community participation and encourage stakeholders, professionals and the general public to protect Al-Mustansiriya school (Akram, Mohammed Jamil, Ismail, Franco, & Graça, 2018).

VI. CONTRIBUTION TO THE EXISTING KNOWLEDGE RESULTS AND FINDINGS

If we look to the. Based on three different objectives, that complemented each other, the aim of this research was to identify, analyze and highlight the role of experts and local

population on protecting Al-Mustansiriya school, located in Baghdad City, Iraq, in a way to provide reliable information for future generations and future studies on the area.

Documenting the significant heritage values in Al-Mustansiriya is a vital factor for its identification, protection and interpretation:

- **Identification:** identification of the significant historical values of Al-Mustansiriya, providing good and reliable documentation for future generations and studies;
- **Protection:** the lack of security on the country and a possible unexpected attack by other terrorist groups, can ruin all heritage values in Al-Mustansiriya and its Islamic architectural elements, making it urgent to properly document them;
- **Interpretation:** documenting the significant heritage values of Al-Mustansiriya, provides an overview and assessment of the current state of the physical and cultural aspects of its properties.

The obtained results of this study, deliver important information for conservation management specialists, local government sector, community group, educators, students, researchers, planners and even to visitors, providing them a better knowledge and understanding of the place and the importance of its protection. This study may be used as a foundation to conservation, rehabilitation and revitalization of the heritage present in Al-Mustansiriya.

VII. RECOMMENDATIONS

- To activate the role of international bodies and organizations concerned with the preservation of heritage areas in different countries and the need for continued commitment to the performance of this role;
- The existence of a mechanism to develop the used concepts and apply the modern concepts when dealing with the preservation of heritage areas, especially within existing cities and adjacent to the heritage areas;
- The importance of exchanging information, expertise and knowledge among organizations concerned with the preservation of urban heritage locally and internationally;
- The need for a future vision of conservation policies to ensure continuity of its role with the heritage areas over time;
- The encouragement of the capacity of Al-Mustansiriya heritage site to create their own revenue, and it is appropriate that this government encouragement is represented by providing short or long-term support, as well as short grants to overcome certain obstacles at the present time.

VIII. CONCLUSIONS

The Al-Mustansiriya School is located in the heart of commercial Baghdad, being noticed that the new buildings, alleys and markets have surrounded Al-Mustansiriya school from the entrance. Because of its location, it can be seen as a profitable investment project, if the private sector was allowed to turn it into a cultural, artistic and tourism center, where festivals would be held to revive the economy.



Based on this, there is an urgent need for inviting stakeholders to take immediate and exceptional steps to develop and protect the site.

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