



**GERMAN ARCHAEOLOGICAL  
INSTITUTE**

**THE ARCHITECTURE OF THE  
TRADITIONAL ISLAMIC MADRASAS IN THE  
OLD CITY OF ALEPPO  
(A COMPARATIVE ANALYTICAL STUDY)**

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## **1. Project Information**

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## **2. Work steps and modifications**

- The research included the study of the traditional Islamic madrasas in Aleppo for four periods (Zinged, Ayyubid, Mamluk, and Ottoman) through collecting historical and architectural information describing madrasas. Due to lack of time and the large amount of information needed to cover the Ottoman period as well, the research was modified to include the study of traditional Islamic madrasas in Aleppo during three periods (Zinged, Ayyubid, and Mamluk) excluding the Ottoman period.
- The research provides a comprehensive study of madrasas during the three periods through presenting historical information and architectural description and analysis of madrasas.
- It focuses on Madrasas that were originally built as a madrasa – not as a mosque for example and then converted- and preserved their original architectural and structural elements.
- The study resulted in producing a catalogue of Madrasas in each period including the same detailed data; including the history, location, year of establishment, architectural drawings, and architectural, structural and decorative elements of each madrasa.
- The study includes an analysis of three madrasas each belonging to a different period. The three madrasas are Al Asadiyya (Zengid period), Al Kamiliyya (Ayyubid period) and Al Saffahiyya (Mamluk period) .The analysis of each madrasa includes the political, social and architectural aspects as well.
- The research concludes with an assessment of the architectural development of the Islamic madrasas in Aleppo from the Zengid to the Mamluk period, in addition to compiling all madrasas of the different Islamic periods in one map.

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Mouhanad Aboudan

## **ABSTRACT**

### **PROPOSAL FOR THE ARCHITECTURE OF THE TRADITIONAL ISLAMIC MADRASAS IN THE OLD CITY OF ALEPOO (A COMPARATIVE ANALYTICAL STUDY)**

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Aleppo is one of the oldest cities in the world Aleppo that was successively ruled by many kingdoms and empires throughout its history starting with the Hittites until the Ottoman period. In addition, Aleppo was located at the crossroads of several trade routes that gave the city a great importance. The old city of Aleppo has an Islamic identity because the majority of the historical monuments, which survived until today, belong to Islamic periods, especially Ayyubid and ottoman periods.

The traditional Islamic madrasas are one of the most important architectural monuments that characterize the old city of Aleppo, due to the architectural character and the educational importance of these madrasas. These madrasas were established as educational institutions offering to teach Islamic principles and applied sciences.

The traditional Islamic madrasas in Aleppo belong to three sequentially periods; Zinged, Ayyubid and Mamluk. A Limited number of madrasas has survived the natural and man-made disasters. The madrasas, which belong to the different periods, have different plans (irregular plans and regular plans) depending on the period they were built in as well as the location of madrasas in the old city of Aleppo.

The aim of this research is to make a comprehensive study of madrasas during the three periods. The madrasas included in the research were originally built as madrasa and preserved most of their original architectural and structural elements. The research will provides a catalog for madrasas in each period including the same detailed data, such

as the history, location, year of establishment, architectural drawings, architectural, structural and decorative elements ,as well as an analysis of three madrasas each belonging to one of the three different periods.

The main aim is to help the reader understand how these madrasas evolved by providing a conclusion on the development of Islamic madrasas in Aleppo in terms of the architectural, structural and decorative aspects from the Zengid to the Mamluk period, all gathered in one map showing the location of madrasas in the old city of Aleppo.

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## **1. INTRODUCTION**

Aleppo has witnessed many civilizations starting from the Hittites until the Ottoman reign. The sequence of these civilizations gave the Old City of Aleppo a distinguished historical characteristic and enriched the urban fabric with many monumental structures such as the city walls, citadel, mosques, madrasas and markets. The cultural variety made Aleppo a bridge that connects the sea and desert.

The Old City of Aleppo has a clear Islamic character because most of the historical monuments belong to the different periods of the Islamic rule, starting from the early Islamic period until the end of the Ottoman period.

Madrasa is an Arabic common word that means “School” or a place for learning. Madrasas were established by governor charities and operated through the WAQF system (religious endowments). The main purpose of the madrasa was to teach Islamic principles such as religious sciences and applied sciences such as logic, philosophy, mathematics, and astronomy (Ahunbay, 2000, p. 338).

The first madrasa can be traced to the Nizamiyah that was built in Baghdad in the 11th century. The school offered food, dwelling, and free education. Madrasas curricula varied from place to place; however, they were always religious in character (Blanchard.2008, p. CRS\_2).

Al madrasa al Zujajiyya, which is considered the first madrasa in Aleppo, was established in 1122 by Bader Al Dulah in the Seljuk period. This madrasa does not exist anymore, as many of other early madrasas in Aleppo (al Jasser, 2000, p. 100).

The Traditional Islamic madrasas in Aleppo date back to four Islamic periods; Zinged (1122-1183) most madrasas on that period were not built exclusively, as most of madrasas were mosques that then had cells and classroom added to them and the curriculum focused on religion sciences, Ayyubid period (1183-1259) the number of madrasa increased in that period and we notice a development in the approached sciences and architecture features .

,Mamluk period, (1259-1516) in this period the number of madrasa was less than in Ayyubid period. Most Mamluk madrasas are actually not comparable to Ayyubid madrasas in the aesthetic and architectural aspects, Ottoman period. (1516-1916) the madrasas in this period increased in number and quality of curricula too especially in the classical period of the Ottoman Empire .A Limited number of madrasas survived the natural exposures such as earthquakes and human effects such as intervention, changing their functions, war and armed conflict.

## **1.1 DEFINITION OF THE PROBLEM**

There were a lot of contributions and studies regarding Islamic madrasas in Aleppo, most of which, especially with Arabic content focus on the historical aspects more than the architectural aspects of madrasas. Most books about Aleppo (the city) focus on historical events and political situation in the city. Most of the architectural studies of madrasas are descriptive and there is no or little analysis included in the studies .The conducted studies are general (not detailed), and finally there is a lack of visual (photographs) and historical documents including surveys and drawings. As a result, there is a limited number of researches about madrasas without any comparison between madrasas belonging to different periods.

## **1.2 SUBJECT AND PURPOSE OF THE RESEARCH**

This research is a comprehensive study of the traditional Islamic madrasas in Aleppo during three periods (Zinged, Ayyubid and Mamluk) through presenting historical information and architectural description and analysis of three madrasas.

It will only deal with the madrasas that were originally established as madrasas and have preserved their original architectural , structural elements and decorative elements,because such madrasas can help us accurately determine the architectural features whereas other madrasas which have not preserved their original elements will not answer the question on the structural and architectural element development from period to period. Therefore, it is possible to study development process of elements of those madrasas by comparing these common architectural elements that had been used in those sequential eras and elements which gradually evolved of these madrassas.

The results of the study will help in future researches about Islamic madrasas in Aleppo, and it may benefit other studies about different madrasas in different cities of the same region (Levant), as the same analysis of Aleppo could apply to madrasas in the same region such as in Damascus and Tripoli on the architectural and structural levels. In addition, this research could be the base of a more holistic study about Islamic madrasas including the Ottoman period, which the author is thinking of developing as a PhD thesis.

### **1.3 METHODOLOGY**

This research will come up with an assessment of the architectural development of the Islamic traditional madrasas in Aleppo from different periods starting from the Zingid period until the Mamluk period passing by the madrasas in the Ayyubid period. This will be achieved through the following steps:

#### **I. Collecting data**

This will include:

- \* Historical accounts on Aleppo and its urban structure. Some of these accounts include information on the history of madrasas.
- \* Architectural Previous studies and reports
- \* Existing surveys and drawings includes architectural drawings and plans.
- \* Archival documents and photos.

#### **II. Analyzing data.**

The collected data will be revised, classified and arranged in an inventory format. Inventories will be designed to include historical, architectural and structural information of each madrasa .It will also include photographic records that usually belong to different periods, which the study will use to figure out the original status of the madrasas in the old city of Aleppo to learn about changes since that date. This will help with starting the chronological and comparative study of these madrasas.

#### **III. Result of research**

Outlining the main findings in terms of:

- 1). giving a clear idea about madrasas' history and the architectural features in Aleppo during three Islamic periods (Zengid ,Mamluk and Ayyubid).

2). Studying the architectural and structural elements of madrasas from one period to another including the type and the plan arrangement and architectural style. The result of this study is a catalog of madrasas covering historical information such as date of construction as well as architectural features such as plans, iwan, cells, and courtyard of the madrasa, structural elements such as wall columns, etc and decorative elements. There is one madrasa(Al Zahiriyya) from Ayyubid period which was not included in the catalog due to the great similarity with other madrasas mentioned such as Adimiyya madrasa from the Ayyubid period.

The catalog was done depending on information from previous research, in addition to detailed analysis of the available plans and photographic evidence. After assessing the collected data, the estimated information was added to the catalog.

The analysis of three madrasas, Al Asadiyya (Zengid period), Al Kamiliyya (Ayyubid period) and Al Saffahiyya (Mamluk period) is the other result of this study. The analysis includes the political, social and architectural aspects as well.

3). Identifying the architectural development of madrasas from Zengid to Mamluk periods by comparing the the architectural spaces and elements from each example .Through this comparison, we can conclude what architectural , structural and decorative elements that were continuously used in these eras, in addition to the architectural elements that had developed sequentially.

#### **1.4 IMPORTANCE AND EXPECTED RESULTS**

One of the most important outcomes of this research is giving a clear idea about Islamic madrassas in general and in Aleppo particularly, which would be accomplished by providing a clear comprehensive catalog about most important Islamic madrasas in Aleppo during Zinged, Ayyubid and Mamluks eras in a chronological order; and its distinct architectural, structural and decorative elements. The most important of these results would be recognizing the development of Islamic madrasas in terms of architecture and structure, which will help the reader to understand how these madrasas had developed clearly.

## 2. TRADITIONAL ISLAMIC MADRASAS IN ALEPOO DURING THE ZENGID PERIOD

### 2.1 CATALOG OF AL ASADIYYA MADRASA

#### Madrasa Al Asadiyya

<b>Location</b>	The madrasa is located in Bab Qinnasrin district on the road between Bab Qinnasrin and the old city souks (markets) (Figure 2.1) (Figure 2.3).The building is considered as a Waqf (religious endowment) property (Al Jaseer, L, 2000, p. 127).
<b>Establishment year</b>	Zengid period, 1168 (Osman, 2009, p. 127).
<b>Founder</b>	Assad Al-Din Sherko, the uncle of Saladin (founder of the Ayyubid Empire), who was the most valuable commander for Nur Ad-Din Zengi, the ruler of the Zinged Empire (Al Assadi, L, 1984, p. 108) (Altan, E, 2014 p. 66).
<b>Previous Restoration Processes</b>	The madrasa has been restored in 1898 during the Ottoman period, which included renewing the cells and halls. The Iwan of this madrasa belongs to the Ottoman period (Tabbak, M 1926, p. 246,) (Al Jaseer, L, 2000, p. 127).The madrasa was widely restored in 1998 by the Ministry of Antiquities and Awaqaf Directorate. The restoration included: cleaning of the walls, replacing the missing stones with new ones that have a similar shape of the originals, dismantling the stones of the water fountain of the courtyard and reconstructing it after cleaning the stones, renewing the wooden work of the prayer hall and cells, paving the middle part of the floor of the prayer hall with modern tiles, in addition to injecting the pendentives of the prayer hall to consolidate them and restoring the entrance of the madrasa (Al Jaseer, L, 2000,p. 127, 2000) (Osman, 2009,p. 128).

#### The Features of Al Asadiyya

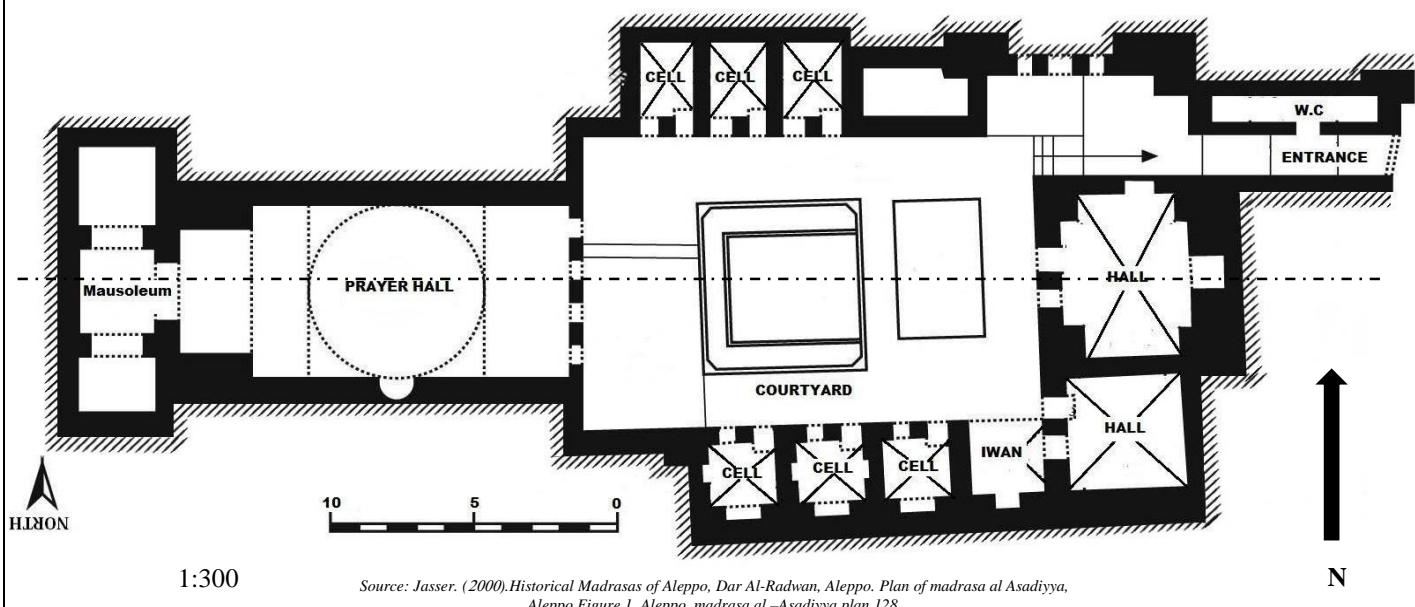
Al Asadiyya is considered the only madrasa, which was originally built with this function still existing from the Zengid period. The madrasa includes all the basic elements of madrasa such as the courtyard, the cells and the prayer hall. Al madrasa al-Assadiyye has a semi-symmetrical rectangular plan. The prayer hall is located on the eastern side of the madrasa. It has a rectangular plan divided into three parts; this prayer hall is shaped as a big iwan opens onto the courtyard through a big pointed arch that was later filled with stones (Figure 2.2).

#### Plan of Madrasa

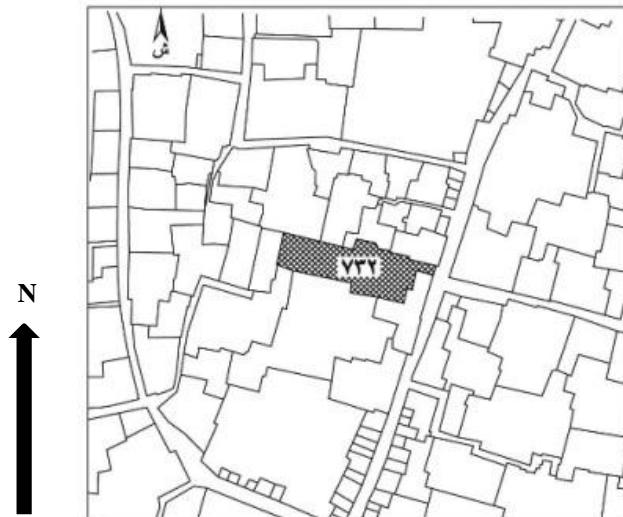
Madrasa Al Assadiyye has a semi-symmetrical irregular shaped plan. The plan consists of an entrance, which leads to an open passage leading to an open courtyard surrounded by an Iwan, six cells (accommodation rooms for students), two halls (recently used to teach), and a large prayer hall located on the western side of the courtyard. Next to the prayer hall, there is a mausoleum, which had graves in the past. The total area of the madrasa is around 520m<sup>2</sup>, whereas the built area is 335m<sup>2</sup> (Al Jaseer, L, 2000, p. 127-128) (Osman, 2009, p. 128) (Fischer, M, 2012, p. 89) (Figure 2.2).

1. Entrance 2.courtyard 3.prayerhall 4.iwan 5.halls 6.cells 7. Mausoleums (figure2, 2).

Figure 2.2: plan of madrasa Al Asadiyya, Aleppo

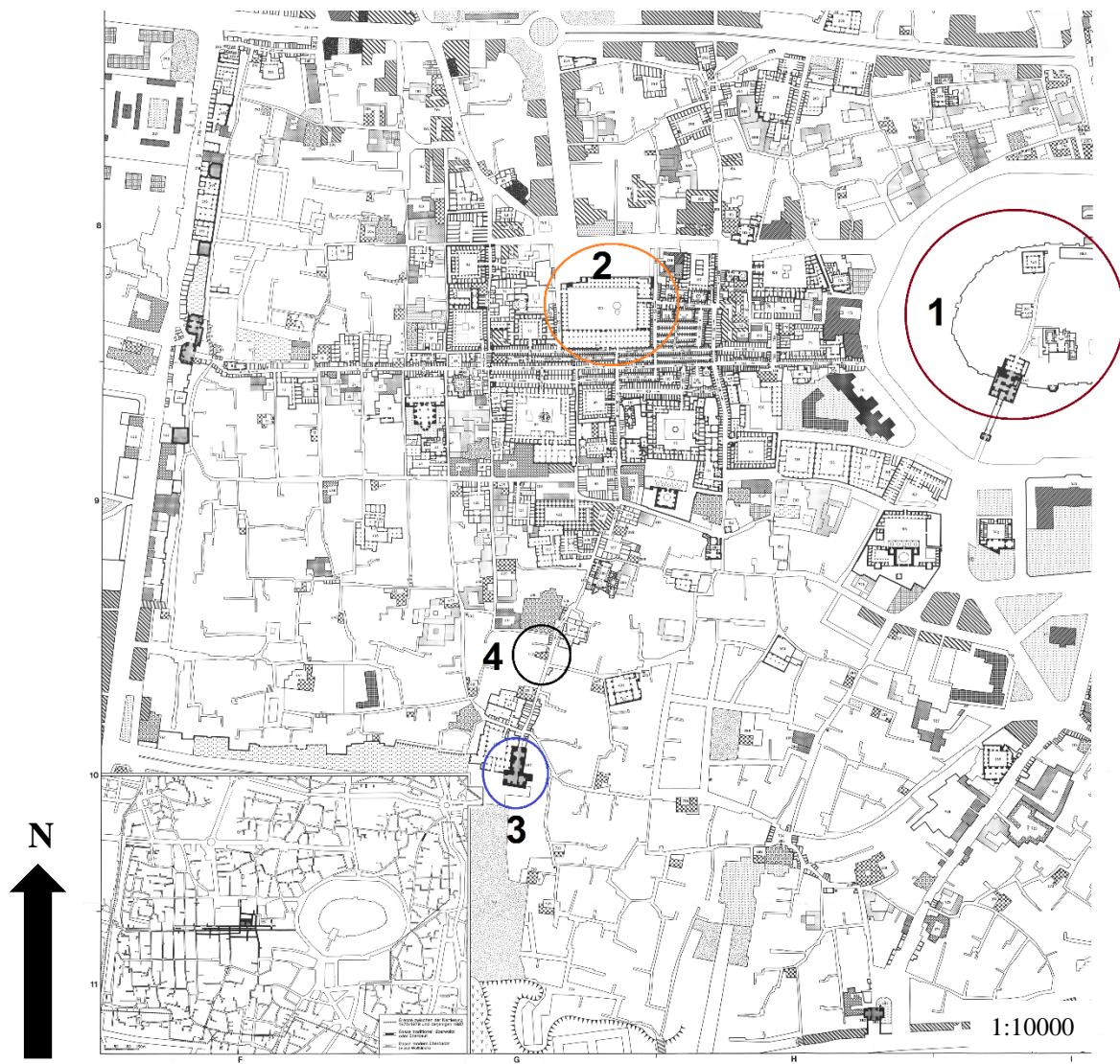


**Figure 2.1:** site plan of madrasa Al Asadiyya, to neighbourhood fabric Aleppo



Source: [https://www.arabency.com/\\_details.artifacts.php?full=1&nid=166092](https://www.arabency.com/_details.artifacts.php?full=1&nid=166092)

**Figure 2.3:** location of the Al Asadiyya madrasa to the old city of



1. Aleppo Citadel 2. Umayyad Mosque 3. Gate of Qinnasrin 4. Madrasa Al-Asadiyya

Source: Gaube.(1984).Aleppo. Gaube-Wirth Kartenlegenden (kamatlyya413)

## Madrasa Al Asadiyya

### Plan Elements

<b>Entrance</b>	The entrance is located on the east of madrasa. It consists of a small simple door with a segmental arch that has a text inscription (the name of the madrasa in Arabic) on its keystone (Figure 2.4). The door opens to a narrow unroofed passage leading to the courtyard. The passage consists of two parts (due to a later addition of a restroom facility); the first part is narrow and has three wide steps and the restroom is located on the left side of it (Figure 2.5). In the second part, the passage becomes slightly wider and connects with the main courtyard with four narrow steps. On the left wall of the second part, there is a big window (the window of a hall), whereas on the right wall there are three small windows opening to the outside (Figure 2.5).
<b>Courtyard</b>	The courtyard has an almost rectangular plan with one right angle (Figure 2.2). The courtyard include a square basin made of stone with a fountain in the center (Figure 2.6), on the west of it (in front of the prayer hall) there is a rectangular high step, whereas on the eastern side (in front of the halls) there is a rectangular plant basin (added later),and a big well next to it (Figure 2.7). The courtyard is surrounded by a prayer hall on the western side, two halls and a long passage on the eastern side, three cells and a small iwan on the southern side and three cells on the northern side. The water basin was probably used for ablution but had other functions as well such as watering the trees and acting as an air-cooling element.
<b>Prayer hall</b>	<p>The prayer hall is located on the west side of the madrasa, it has a rectangular plan and it opens from the west onto a mausoleum (Figure 2.2).The façade of prayer hall has an iwan shape, open onto the courtyard with a big pointed arch, which was later filled (in the Ottoman period) (Figure 2.8) (Al Jaseer, L, 134, 2000).. Nowadays the prayer hall opens onto the courtyard by a big door and three windows next to it with a small window or hole above each window (Figure 2.9).</p> <p>The prayer hall consists of three unequal parts and three pointed arches divide these parts. The middle part is the biggest and it has a square shape, whereas the other two parts are smaller in comparison and have a rectangular shape (Figure 2.2) (Figure 2.10). The middle part has a Mihrab, located in the middle of the south wall of the prayer hall (Figure 2.11).</p> <p>The middle part of prayer hall is roofed with a pointed dome made of brick, whereas the other two parts of prayer hall are roofed with barrel vaults (Al Jaseer, L, 2000, p. 129). The dome is based on short dodecagonal drum that has a small window in each side of the four basic sides. The dodecagonal drum is based on pendentives.</p>
<b>Iwan</b>	The small iwan is located on the east end of the south side of the madrasa, next to the cells and it has the same size of the adjacent cells. The iwan has a square plan and it is raised one-step above the level of the courtyard. The iwan's front is semi-circular arch. This iwan is roofed with a barrel vault and a cross vault in a part of it (Figure 2.12) (Al Jaseer, L, 2000, p.129). There was probably another iwan in the past, which was most likely bigger according to Abo Zar's (historian) description “the madrasa has a big iwan” (Al Jaseer, L, 2000, p . 127).
<b>Cells</b>	<p>The madrasa has six cells (accommodation for students); three of which are located on the southern wing of the courtyard (Figure 2.14), whereas the other three are located on the northern wings of the courtyard (Figure 2.13) (Figure 2.2).</p> <p>Each cell opens onto the courtyard by a door one-step above the level of the courtyard. A rectangular window and a small opening are located on top between the window and door. Doors and windows of cells have equal sizes and have a segmental arch above each of them. All cells are roofed with a cross vault. Cells on the northern wing of the courtyard have rectangular openings (Figure 2.13), whereas the southern cells have circular opening (Figure 2.14).</p>
<b>Halls</b>	There are two big halls located on the eastern wing of the courtyard (Figure 2.2) (Figure 2.15). The hall next to iwan opens onto the courtyard by a door and a window, the other hall next to passage has two windows and a door. The door and one window open to the courtyard, whereas the other window opens onto the passage of madrasa. Each of the halls is roofed with a cross vault and above each window and door of the halls there is a segmental arch (Al Jaseer, L, 2000, p. 129) (Figure 2.15)

## Madrasa Al Asadiyya

<b>Mausoleum</b>	The mausoleum is located to the west of the prayer hall and is connected with it through a portal with a segmental pointed arch (Figure 2.16). The mausoleum consists of two parts, the northern and the southern sides are roofed with barrel vaults, whereas the area between these two parts is roofed with a flat roof with flat wooden beams (Figure 2.2). The mausoleum had graves in the past. But not anymore. (Al-Tabbak, M, 1924, p. 246).
<b>External facades</b>	
<b>Eastern facade</b>	The exterior eastern façade is simple. It consists of a considerably low wall with a small simple portal considered as the main entrance of madrasa, the portal has a segmental arch, (Figure 2.4) (Figure 2.17).
<b>Internal facades</b>	
<b>Northern facade</b>	The northern interior facade from left to right consist of: Three cells (accommodations of students )of madrasa each cell has a door raise one-step above the level of the courtyard and a window, both of which have a segmental arch, also there is a small rectangular opening located on the top part of each cell between the window and door those opening are used for ventilation. The low part of the cells' façade was built using ashlar blocks, whereas the upper was part built with rubble smaller stones, which is probably a later addition to the Madrasa as second floor (Figure 2.13). In addition, there are two stone gutters on the façade. Next, to the façade of three cells, there is a solid wall lower than the facade. Next to this wall, there is a high step and a segmental arch window, which is open to the outside.
<b>Southern facade</b>	The southern interior facade from left to right consist of: Façade of the Iwan of the madrasa, which with a semi-circular arch. Next to it are three cells. Each cell has a door raised one-step above the level of the courtyard and a window and all openings have a segmental arch. There is also a small circular opening located on top of each cell between the window and door (Figure 2.18). In addition, The cells façade is distinguished with inscription, which belongs to Ottoman period with the writing "this madrasa was renewed in 1898/1316 AH". , There are also two stone gutters on that façade as well (Al Jaseer, L 2000, p. 134,) (Figure 2.6). Next to the cells, there is a high solid, the lower part of which is built using big stones, whereas the upper part is built with small stones (Figure 2.18).
<b>Western facade</b>	The western interior façade is the façade of the prayer hall. This façade consists of a big wall (built with ashlar blocks), which has two stone gutters and a big pointed arch that gives the façade an iwan shape. This arch was filled later by with rubble smaller stones (Figure 2.8). This facade includes from right to left: a big wooden segmental arch door, next to which is a high step ,three segmental arch windows, -these windows are raised 20 cm above the level of the step- (Al Jaseer, L, 2010, p. 343), and four openings above the door and the windows, above each opening a four-centered arch (Figure 2.9). Probably this wall was built during the Ottoman period because the four- centered arch was first used in the Ottoman period.
<b>Eastern facade</b>	The east interior facade from right to left consists of:Two big halls, each of which has a segmental arch door and window- the façade of the first hall has a niche above a door (Figure 2.19) the window open to the iwan whereas the window of next hall open to the courtyard . In addition, there are two stone gutters on the façade. Next to the halls, there are four steps leading to the passage near the entrance, which has a wooden door with a segmental arch (Figure 2.15).

## Madrasa Al Asadiyya

### Decorative elements

The madrasa lacks decorative elements, except for two brackets located above the Mihrab of the prayer hall. These brackets have geometric motifs (Figure 2.11). In addition, there are text inscriptions (Arabic alphabet) above the portal of madrasa and in the middle part of the southern internal facade of the madrasa.

### Structural elements

<b>Vaults</b>	Barrel and cross vaults were widely used in Madrasa Asadiyya. Barrel vaults are used to roof the two side parts of the prayer hall and the mausoleum (Figure 2.10) as well as the iwan of the madrasa. Cross vaults are used to roof the cells, the halls and a small part of the iwan. The parts roofed by cross vaults were probably rebuilt or added later because the barrel vaults were used widely in Zengid area whereas the cross vaults used later.
<b>Domes</b>	The madrasa has one pointed dome located on the top of middle part of prayer hall. This dome is made out of brick, and is based on short dodecagonal drum (Figure 2.10) (Figure 2.20).
<b>Arches</b>	The segmented arches were widely used in different areas of the madrasa, such as in the entrance (Figure 2.4), restroom, halls (Figure 2.15) and cells (Figure 2.13), whereas pointed arches were used in the prayer hall (Figure 2.8) (Figure 2.10) (Figure 2.11). A Semicircular arch was used in the iwan (Figure 2.12) and a pointed segmented arch in the portal between the mausoleum and prayer hall (Figure 2.16). A four-centered arch was used in the internal western façade (prayer hall façade) (Figure 2.9). All kinds of arches were widely used in different periods, except for the Four-centered arch used in the opening of prayer hall to the mausoleum, which was used only during the Ottoman period.
<b>Walls</b>	The walls of the madrasa are very thick in some parts (walls of prayer hall). They were built using ashlar blocks in the lower parts and rubble smaller stones in the upper parts (cells and halls) (Al Jaseer, L, 2000, p. 134).
<b>Transition elements</b>	The transition elements used from the square plan of the middle part of the prayer hall to a dodecagonal plan of dome drum was the triangular pendentives. In addition, the dodecagonal drum itself is considered a transition element, as it serves the transfer from the dodecagonal shape to the circular shape of the base of the dome (Figure 2.10) (Figure 2.20).

### **2.1.1 Analysis of Al Asadiyya Madrasa**

Nur Al-Din's reign was distinguished by conquests and recovery of many areas that were controlled by the Crusaders, which led to an increase of the size of the state, an increase of the resources and the population. These conditions reflected positively on Aleppo's development, as it was the capital of the Zinged Empire.

During the reign of Nur Al-Din Al-Zanki, (1146-1174) Aleppo was the target of developing efforts on more than one level, including the social, political, economic, and architectural aspects.

Many parts of Aleppo were rebuilt after the great earthquake in 1138 during the Zengid rule. In addition, Nur Al-Din had an interest in religious education and ordered building many madrasas in Aleppo for the revival of Sunni doctrine (Al Ghazzi, K, 1991, p. 94-95) (Al Jaseer, L, 2000, p. 101).

Al Asadiya madrasa was founded by Assad Al-Din Sherko, who was considered the most valuable commander for Nur Al-Din Zanki. He was the uncle of Sallah Al-Din the founder of the Ayyubid Empire (Al Assadi, L, 1984, p. 244) (Altan, E, 2014, p. 66).

Madrasa Al Asadiya has had several waqfs (endowments); its first waqf was a share in the village of Sard and several shops outside Banqusa. Then they were replaced by a shop in Swiqet Hatem. Today, the madrasa stands next to shops and a bakery (Al Tabbak, M, 1924, p. 246).

This madrasa's plan is a semi-symmetrical shape with not completely straight walls set, which indicates that it was built within the city and located within a residential area and was surrounded by buildings, (The Madrasa was built later than its surrounding).

The entrance to the madrasa is located in its corner and the axis of the madrasa does not go through the Mihrab of the prayer hall. The madrasa is small and includes students' cells (accommodation for students). The courtyard is semi-rectangular with a simple water basin, which are most likely used to cool the atmosphere.

The facade is simple and sober. The madrasa has a simple entrance. The decorations are almost non-existent. The madrasa, although containing most of the elements, is very simple and practical. This is probably because the Zengids wanted to build as many madrasas as possible to graduate Sunni Islamic imams and establish a new generation to follow the Sunni sect instead of Shia sect that was followed by the majority in Aleppo at that period. Therefore, there was no interest in the aesthetic and decorative sides of the madrasa, rather an interest in giving religious education (Sunni school) for the largest possible number of students.

The madrasa may have had a different plan with two opposite iwans, probably beside the two halls of the madrasa because these halls are roofed by cross vaults that were first used after the Zinged period. According to Al Jaseer, the barrel vaults were widely used in the Zengid period, whereas cross vaults were not used during that period (Al Jaseer, L, 2010, p. 343).

The iwan was closed later by a wall in which an entrance and several windows were opened .the opening have multi-centered arches which appeared for the first time in Aleppo during the Ottoman period therefore, the iwan which is located on the southern side of madrasa was probably built later. Also according to Abo Zar (historian), the madrasa had a big iwan (Al Jaseer, L, 2000, p. 127). The current iwan is small and could not be the one mentioned by Abo Zar.

In addition, in madrasa Al-Nuriyya, which was founded in 1167 by Nur Al- Din in Damascus, the iwan of faces the prayer hall (Al Jaseer, L, 2000, p. 30). This comparison might support the author's assumption about the existence of a bigger iwan.

**Figure 2.4:** the door of the main entrance of the madrasa Al Asadiyya. Aleppo. 31 January 2015.



Source: Aleppo is history.

[https://www.facebook.com/halab.attarikh/photos/p.345246262334715/?type=1&opaqueCursor=AbrUezszywzoETIDTB1e0DNlCWTtoAp3Nlq8VBlcADje4GLeLOVy\\_bYJrJ\\_T64GO74Jasj1HAHf0i-ueMs8SmMMqEdpy97DFqOr22ChlHwzNSgPLORf54FYlYbGODWhQ0bmJRmx25IDzOZuE9rLaGMG3kFTgKCAelOVxguUmvqvj2\\_feZuXiZLgiKJ0ojrEaVkpjWfjGK0V\\_pqN3y9C1thSgaDRjMR\\_yX4sN9WDm7r84-ykhvJcTNEDPXg9R6pbibVBE0hVzCGGmb8hqao8A2pzVOjMuFdCrTLTr-nw7h3PtBxgoFlBzlyprEJtmllAmAd5Bq0Q2hvBG4OsPMpVPO6zuAlk4N9J-IT4IKfF8IfGNM9\\_97zqBksgbcZyruR4FBDaT0kKgDgHyevByKccAod2gMg6-7fmE5eSZqkXM2TCFbNCkYxCg5vbQLY1637O1ZXhgEP\\_JXbeQRz8gPACaLGc&theater](https://www.facebook.com/halab.attarikh/photos/p.345246262334715/?type=1&opaqueCursor=AbrUezszywzoETIDTB1e0DNlCWTtoAp3Nlq8VBlcADje4GLeLOVy_bYJrJ_T64GO74Jasj1HAHf0i-ueMs8SmMMqEdpy97DFqOr22ChlHwzNSgPLORf54FYlYbGODWhQ0bmJRmx25IDzOZuE9rLaGMG3kFTgKCAelOVxguUmvqvj2_feZuXiZLgiKJ0ojrEaVkpjWfjGK0V_pqN3y9C1thSgaDRjMR_yX4sN9WDm7r84-ykhvJcTNEDPXg9R6pbibVBE0hVzCGGmb8hqao8A2pzVOjMuFdCrTLTr-nw7h3PtBxgoFlBzlyprEJtmllAmAd5Bq0Q2hvBG4OsPMpVPO6zuAlk4N9J-IT4IKfF8IfGNM9_97zqBksgbcZyruR4FBDaT0kKgDgHyevByKccAod2gMg6-7fmE5eSZqkXM2TCFbNCkYxCg5vbQLY1637O1ZXhgEP_JXbeQRz8gPACaLGc&theater)

**Figure 2.5:** the uncover passage lead to the courtyard of madrasa Al Asadiyya. Aleppo. March 2017.



*Source: Directorate –General of Antiquities and Museums [http://www.dgam.gov.sy/archive/docs/Image/2017/2017.03.01-%20Damage%20of%20Al\\_Madrasah%20Al\\_Asadia%20and%20Tarsousi%20Mosque/Al\\_Madrasah%20Al\\_Asadia\\_03.jpg](http://www.dgam.gov.sy/archive/docs/Image/2017/2017.03.01-%20Damage%20of%20Al_Madrasah%20Al_Asadia%20and%20Tarsousi%20Mosque/Al_Madrasah%20Al_Asadia_03.jpg)*

**Figure 2.6:** the square basin on courtyard of the madrasa Al Asadiyya.Aleppo.28 December 2011.



Source:[http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9\\_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9\\_...%D9%85%D8%B1%D9%83%D8%B2\\_%D8%B5%D8%AD%D9%8A\\_%D9%81%D9%8A\\_%D8%AD%D9%84%D8%A8\\_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9\\_28-12-2011.html](http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9_...%D9%85%D8%B1%D9%83%D8%B2_%D8%B5%D8%AD%D9%8A_%D9%81%D9%8A_%D8%AD%D9%84%D8%A8_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9_28-12-2011.html)

**Figure 2.7:** the plant basin on courtyard of the madrasa Al Asadiyya. Aleppo. 28 December 2011



Source:[http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9\\_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9\\_...\\_%D9%85%D8%B1%D9%83%D8%B2\\_%D8%B5%D8%AD%D9%8A\\_%D9%81%D9%8A\\_%D8%AD%D9%84%D8%A8\\_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9\\_28-12-2011.html](http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9_..._%D9%85%D8%B1%D9%83%D8%B2_%D8%B5%D8%AD%D9%8A_%D9%81%D9%8A_%D8%AD%D9%84%D8%A8_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9_28-12-2011.html).

**Figure 2.8:** view of façade of prayer hall of madrasa Al Asadiyya. Aleppo, 24 February 2015.



Source : <https://www.facebook.com/photo.php?fbid=809771232437260&set=pb.100002131728713.-2207520000.1531139947.&type=3&theater>

**Figure 2.9:** view of holes and windows of the façade of prayer hall of madrasa Al Asadiyya. Aleppo. 28 may2015.



*Source: The Scream of Heritage.*

[https://www.facebook.com/1595169457432294/photos/p.1601646370117936/1601646370117936/?type=1&opaqueCursor=AhpClylrUZ0zA7LnPUJWobZt7aHhKafk8eHwi\\_ac0GwlWzuQo9Nw0mUyrI4tbVhhU0\\_ntKfmcTev9yYxr1zopQ9ALtkp4l1cBGzozJPH0gaq3AVDiOAqEk4k7Vh4i1\\_WcO3s0uLnQA7vwatnXLNmw7JD6euLHq8Yq8G\\_ICTQ\\_IKKBOajhbe3X5S4A75LxeINKr6MNaDHe9HLV8\\_4q1OsBBybrgbBbt1NwwVYNVJ\\_KZW8tg502MdrVFa6o\\_4pekWapITyauKBkTGS9d2dB7oFIKeJWjFKNnbX4hatY47UeYjvVJNO8n\\_xxc81bP87d2j3YOsbb9IwdBM](https://www.facebook.com/1595169457432294/photos/p.1601646370117936/1601646370117936/?type=1&opaqueCursor=AhpClylrUZ0zA7LnPUJWobZt7aHhKafk8eHwi_ac0GwlWzuQo9Nw0mUyrI4tbVhhU0_ntKfmcTev9yYxr1zopQ9ALtkp4l1cBGzozJPH0gaq3AVDiOAqEk4k7Vh4i1_WcO3s0uLnQA7vwatnXLNmw7JD6euLHq8Yq8G_ICTQ_IKKBOajhbe3X5S4A75LxeINKr6MNaDHe9HLV8_4q1OsBBybrgbBbt1NwwVYNVJ_KZW8tg502MdrVFa6o_4pekWapITyauKBkTGS9d2dB7oFIKeJWjFKNnbX4hatY47UeYjvVJNO8n_xxc81bP87d2j3YOsbb9IwdBMLxyT_HFBniSL-ePnJQwcZpJjOSIPOQzYi4TXquq0470PEsGAN2G5eaNy9jZBrX3P5bdowOGZVskKQ32Z7D3eU6ba9gF0TgYSHd2ajUxbGsnx7M&theater)

**Figure 2.10:** interior view of prayer hall of madrasa Al Asadiyya. Aleppo. 8 Jun 2011.



Source : <http://www.esyria.sy/ealeppo/index.php?p=stories&category=places&filename=201106080955032>

**Figure 2.11:** view of mihrab of prayer hall of madrasa Al Asadiyya. Aleppo. 8 Jun 2011.



Source : <http://www.esyria.sy/ealeppo/index.php?p=stories&category=places&filename=20110608095503d2>

**Figure 2.12:** view of the iwan of madrasa Al Asadiyya.Aleppo.2011.



*Source: Arabic Encyclopaedia,*

**Figure 2.13:** view of cells on the north side of madrasa Al Asadiyya.Aleppo.2011.



*Source: Arabic Encyclopaedia.*  
[https://www.google.com.tr/search?biw=1366&bih=586&tbo=isch&sa=I&ei=0lBDW6HCKZKlwQKQq7ygCA&q=%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D8%A9+%D8%A7%D9%84%D8%A7%D8%B3%D8%AF%D9%8A%D8%A9+%D8%AD%D9%84%D8%A8&oq=%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D8%A9+%D8%A7%D9%84%D8%A7%D8%B3%D8%AF%D9%8A%D8%A9+%D8%AD%D9%84%D8%A8&gs\\_l=img.12...0.0.0.46835.0.0.0.0.0.0.0....1c..64.img..0.0.0....0.4WrropufchE#mgdii=CX6tSwk6H5SzM:&imgrc=Kl9Gnx70QckyVM](https://www.google.com.tr/search?biw=1366&bih=586&tbo=isch&sa=I&ei=0lBDW6HCKZKlwQKQq7ygCA&q=%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D8%A9+%D8%A7%D9%84%D8%A7%D8%B3%D8%AF%D9%8A%D8%A9+%D8%AD%D9%84%D8%A8&oq=%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D8%A9+%D8%A7%D9%84%D8%A7%D8%B3%D8%AF%D9%8A%D8%A9+%D8%AD%D9%84%D8%A8&gs_l=img.12...0.0.0.46835.0.0.0.0.0.0.0....1c..64.img..0.0.0....0.4WrropufchE#mgdii=CX6tSwk6H5SzM:&imgrc=Kl9Gnx70QckyVM)

**Figure 2.14:** view of cells on the southern side of the madrasa Al Asadiyya.Aleppo.2011.



*Source: Arabic Encyclopaedia,*

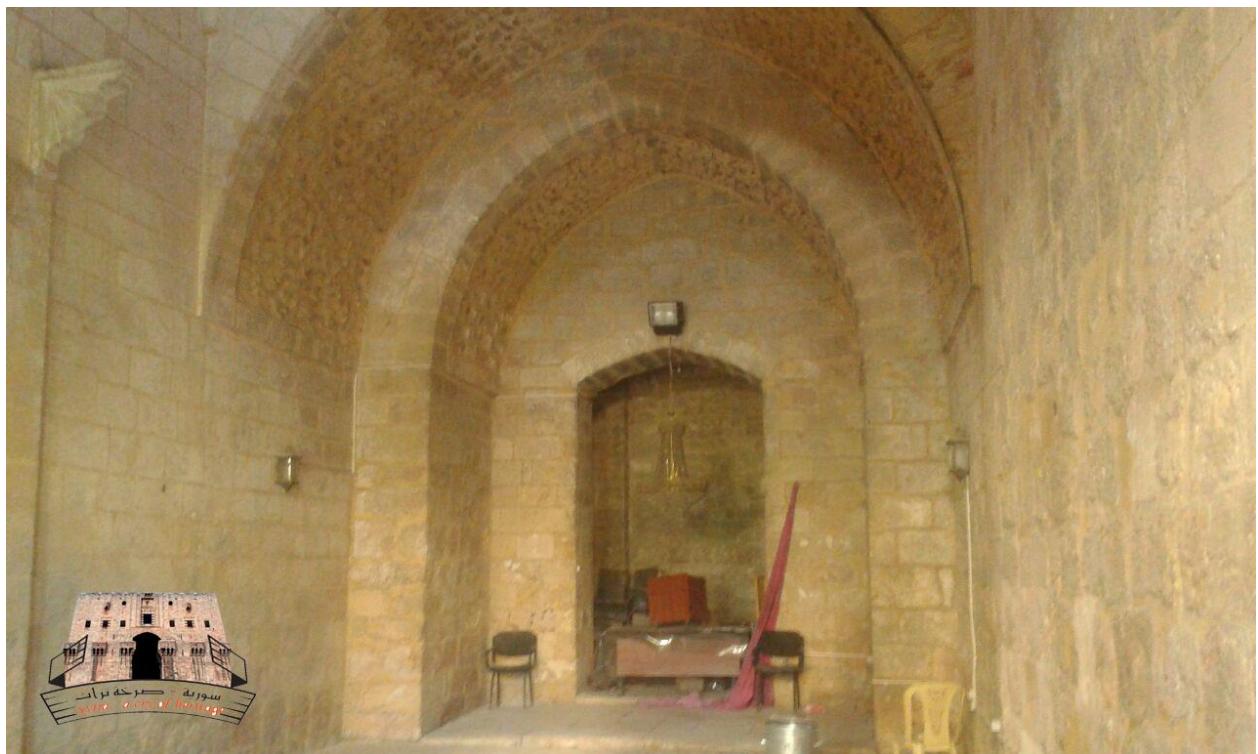
[Source: Arabic Encyclopedia](https://www.google.com.tr/search?biw=1366&bih=586&tbs=isch&sa=1&ei=0IBWDH6CKZLhQKQq7yqCA&q=%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D8%A9+%D8%A7%D9%84%D8%A7%D8%B3%D8%AF%D9%8A%D8%A9+%D8%AD%D9%84%D8%A8&qo=%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D8%A9+%D8%A7%D9%84%D8%A7%D8%B3%D8%AF%D9%8A%D8%A9+%D8%AD%D9%84%D8%A8&gs_l=im2g..0.0.46835.0.0.0.0.0.0...1c..64/img..0.0.0...0.4WifopufchE#imgid=22RCoWFds0JHyM:&imgrc=MPB1kvT14JM)

**Figure 2.15:** view of halls on the eastern side of the courtyard of madrasa Al Asadiyya. Aleppo. 28 December 2011.



Source: [http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9\\_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9\\_...\\_D9%85%D8%B1%D9%83%D8%B2\\_%D8%B5%D8%AD%D9%8A\\_%D9%81%D9%8A\\_%D8%AD%D9%84%D8%A8\\_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9\\_28-12-2011.html](http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9_..._D9%85%D8%B1%D9%83%D8%B2_%D8%B5%D8%AD%D9%8A_%D9%81%D9%8A_%D8%AD%D9%84%D8%A8_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9_28-12-2011.html).

**Figure 2.16:** view of the portal on prayer hall leads to mausoleum of the madrasa Al Asadiyya. Aleppo. 28 May 2015.



*Source: The Scream of Heritage. View of portal located on the west side of prayer hall and lead to mausoleum e of prayer hall madrasa.28 May 2015.  
[https://www.facebook.com/1595169457432294/photos/p.1601646370117936/1601646370117936/?type=1&opaqueCursor=AbpClylrUZ0:A7LnPU1WobZi7aHhKafk8eHwi\\_ac0GwlWzuQo9Nw0mUyrl4tbVlhU0\\_niKfmcTev9yYxr1zopQ9ALikp4l1cBGzozJPH0gaq3AVDiOAqEk4k7Vh4i1\\_WcO3s0uLnQA7vwatnXLMmw7JD6euLHq8Yq8G\\_JCTQ\\_IkJKB0ajhbe3X5S4A75LxelNkr6MNnaDHe9HLV8\\_4q1OsbBybrgbBb1tNwwVYNVJ\\_KZW8tg502MUDrVFa6o\\_4pekWapITyauKBkTGS9d2dBk7oFIKeJWifKNlNbX4hatY47UcYyjVJNO8n\\_xcx81bP87d2j3YO8b9IwdBMLxyT-\\_HFBniSL-ePnJQwcZpJjOSIPOQzYI4TXquq0470PEsGAN2G5eaNy9jZBrX3P5b](https://www.facebook.com/1595169457432294/photos/p.1601646370117936/1601646370117936/?type=1&opaqueCursor=AbpClylrUZ0:A7LnPU1WobZi7aHhKafk8eHwi_ac0GwlWzuQo9Nw0mUyrl4tbVlhU0_niKfmcTev9yYxr1zopQ9ALikp4l1cBGzozJPH0gaq3AVDiOAqEk4k7Vh4i1_WcO3s0uLnQA7vwatnXLMmw7JD6euLHq8Yq8G_JCTQ_IkJKB0ajhbe3X5S4A75LxelNkr6MNnaDHe9HLV8_4q1OsbBybrgbBb1tNwwVYNVJ_KZW8tg502MUDrVFa6o_4pekWapITyauKBkTGS9d2dBk7oFIKeJWifKNlNbX4hatY47UcYyjVJNO8n_xcx81bP87d2j3YO8b9IwdBMLxyT-_HFBniSL-ePnJQwcZpJjOSIPOQzYI4TXquq0470PEsGAN2G5eaNy9jZBrX3P5b)* Source: The Scream of Heritage.  
View of portal located on the west side of prayer hall and lead to mausoleum e of prayer hall madrasa.28 May 2015.

**Figure 2.17:** View of the exterior eastern façade of madrasa. Al Asadiyya .Aleppo 1 February 2000.



*Source :* <https://www.facebook.com/photo.php?fbid=809770565770660&set=pb.100002131728713.-2207520000.1531155547.&type=3&theater>

**Figure 2.18:** view of southern interior façade of madrasa Al Asadiyya. Aleppo. March 2017.



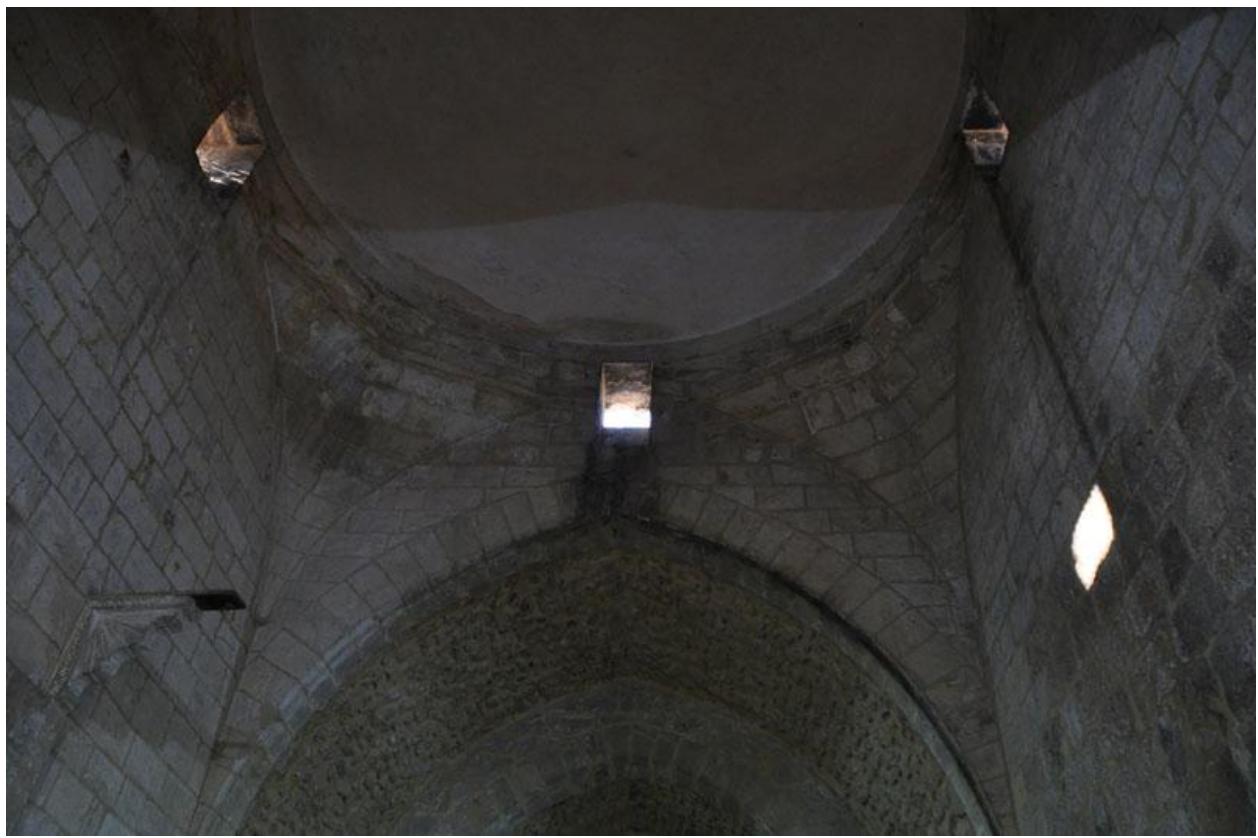
*Source: Directorate –General of Antiquities and Museums.  
[http://www.dgam.gov.sy/archive/docs/Image/2017/2017.03.01-%20Damage%20of%20Al\\_Madrasah%20Al\\_Asadia%20and%20Tarsousi%20Mosque/Al\\_Madrasah%20Al\\_Asadia\\_02.jpg](http://www.dgam.gov.sy/archive/docs/Image/2017/2017.03.01-%20Damage%20of%20Al_Madrasah%20Al_Asadia%20and%20Tarsousi%20Mosque/Al_Madrasah%20Al_Asadia_02.jpg)*

**Figure 2.19:** view of the façade of the right hall of madrasa Al Asadiyya. Aleppo. March 2017.



*Source: Directorate –General of Antiquities and Museums.  
[http://www.dgam.gov.sy/archive/docs/Image/2017/2017.03.01-%20Damage%20of%20Al\\_Madrasah%20Al\\_Asadia%20and%20Tarsousi%20Mosque/Al\\_Madrasah%20Al\\_Asadia\\_08.jpg](http://www.dgam.gov.sy/archive/docs/Image/2017/2017.03.01-%20Damage%20of%20Al_Madrasah%20Al_Asadia%20and%20Tarsousi%20Mosque/Al_Madrasah%20Al_Asadia_08.jpg)*

**Figure 2.20:** View of dome of prayer hall and transition element of Al Asadiyya .28 December 2011.



Source:[http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9\\_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9\\_...\\_%D9%85%D8%B1%D9%83%D8%B2\\_%D8%B5%D8%AD%D9%8A\\_%D9%81%D9%8A\\_%D8%AD%D9%84%D8%A8\\_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9\\_28-12-2011.html](http://www.nouhworld.com/article/%D9%85%D8%AF%D8%B1%D8%B3%D8%A9_%D8%A7%D9%84%D8%A3%D8%B3%D8%AF%D9%8A%D8%A9_..._%D9%85%D8%B1%D9%83%D8%B2_%D8%B5%D8%AD%D9%8A_%D9%81%D9%8A_%D8%AD%D9%84%D8%A8_%D8%A7%D9%84%D9%82%D8%AF%D9%8A%D9%85%D8%A9_28-12-2011.html)

## **2.2 THE ARCHITECTURAL FEATURES OF ISLAMIC MADRASAS IN ALEPPO DURING THE ZENGID PERIOD 1183-1122**

The main aim of building madrasas in the Zengid period was to graduate Sunni Islamic imams and establish a new generation following the Sunni sect instead of Shia sect that was followed by the majority in Aleppo at that period. Therefore, there were little or no interest in the aesthetic and decorative aspects of the madrasa, in addition most of the madrasa at that time were originally built as mosque and later experienced the addition of other architectural elements, such as cells (Accommodation for student).

Hence, the majority of the madrasas during the Zengid period was not built originally as madrasas; but as mosques and was later converted, except madrasa Al Asadiyya. Al Asadiyya is the only original Zengid madrasa that survives until the present day. Therefore, we can say that Zengid madrasas did not have a clear plan type to be generalized and they are mostly not symmetrical.

The Zengid madrasas were built within the city walls, especially in the western part of it. Most madrasas have irregular plan and wall thickness because they were built within a residential area and was sort of fit in an empty spot between the adjacent buildings.

Each of these madrasas has most of the architectural spaces necessary for a madrasa, such as prayer hall, iwans, cells, courtyard, mausoleums and halls. Each of these spaces has a rectangular or a square plan.

The entrances of most Zengid madrasas are simple; the majority of them lead to a passage. Generally, the entrances were located on the western or eastern sides of the madrasas. Madrasa Al Asadiyya is an example, which has a simple entrance with a simple door leading to a passage opening onto a courtyard.

The courtyards were also simple, most of them were located in the centre of the madrasas and had a rectangular or square fountain in the middle and the floor was paved with normal stone. The other architectural spaces surrounded the courtyard.

Simple rectangular prayer halls are found in all Zengid madrasas, those halls were not located on a specific location in Zengid madrasas. The prayer hall normally includes a mihrab. Probably the prayer hall that consists of three parts divided by two arches, appeared first on the Al Asadiyya madrasa.

The cells (accommodation of student) existed in most Zengid madrasas. These cells are relatively small. The cells are located on one side or two sides of madrasas, each cell opens onto the courtyard with a window and door, such as in the Al Asadiyya madrasa.

The iwans exist in some of madrasas and are not located in specific locations, the iwan (usually has three sides with one end entirely open to the courtyard with an arch) such as in Asadiyya madrasa. Although halls exist in most Zengid madrasas, these halls are bigger than cells in size. The mausoleums exist in some Zengid madrasas. The mausoleums were small in, most of them and appendix to the prayer hall.

Domes were used in Zengid madrasa. Most madrasas have one dome made of brick, which is located on the middle part of the prayer hall, and some domes are based on a

polygon drum, such as the pointed dome in Asadiyya, which is based on a dodecagonal drum whereas some domes are not based on a drum. In addition, the vaults were used for roofed Zengid madrasas.

The vaults were widely used in Aleppo madrasas during the Zengid period, the barrel vaults are the most common vaults. The vaults are not located in specific place in Zengid madrasas, such as in Asadiyya madrasa, the barrel vaults roofed the iwan and two sides of the prayer hall. Cross vaults found in Zengid madrasas are probably not original to the Zengid period and were probably built in other periods.

The columns limited used in some Zengid madrasas, especially in mihrab of prayer halls, also some of those columns belong to other periods.

The pointed and segmental arches were used in Zengid madrasas. The pointed arches are the most common arches during that period and appear in different places in each madrasa, whereas the segmental arches are seen on small doors and windows opening onto the courtyard of madrasa. Such as the segmental arches above doors and windows of cells and halls in Asadiyya madrasa. The pointed trefoil arches can be seen on the portal of the main entrance of Al Maqdumiyya madrasa (Osman, 1992, p. 175).

The transition elements were found mostly in prayer halls of Zengid madrasas, such elements includes drum and pendentives. The pendentives are used as transition element from square plan to the circular plan of the base of the dome or to the polygonal plan (dodecagonal) of the drum of the dome. The drum is considered transition elements from the polygonal plan to the circular plan of the base of dome such as on the drum of the middle part of prayer hall of the madrasa Al Asadiyya.

The walls of most Zengid madrasa are built from ashlar blocks.

The Zengid madrasas are poor in decorative elements; the decorative elements, in Zengid madrasas are mostly text inspiration, motifs and muqarnas. The majority of these elements were located on the façade of main entrance of Zengid madrasas.

### 3. TRADITIONAL ISLAMIC MADRASAS IN ALEPO DURING THE AYYUBID PERIOD

#### 3.1 CATALOG OF AL FIRDAW MADRASA

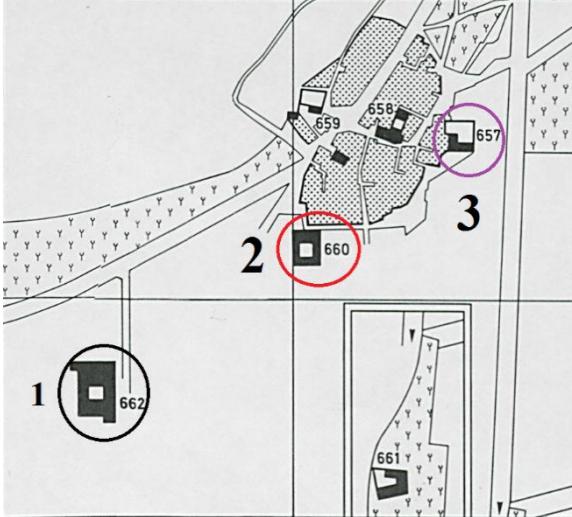
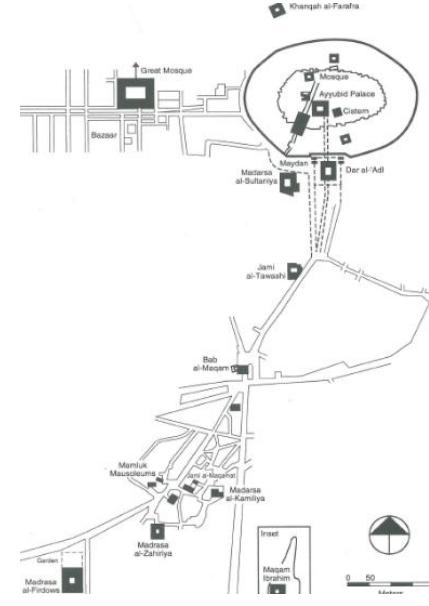
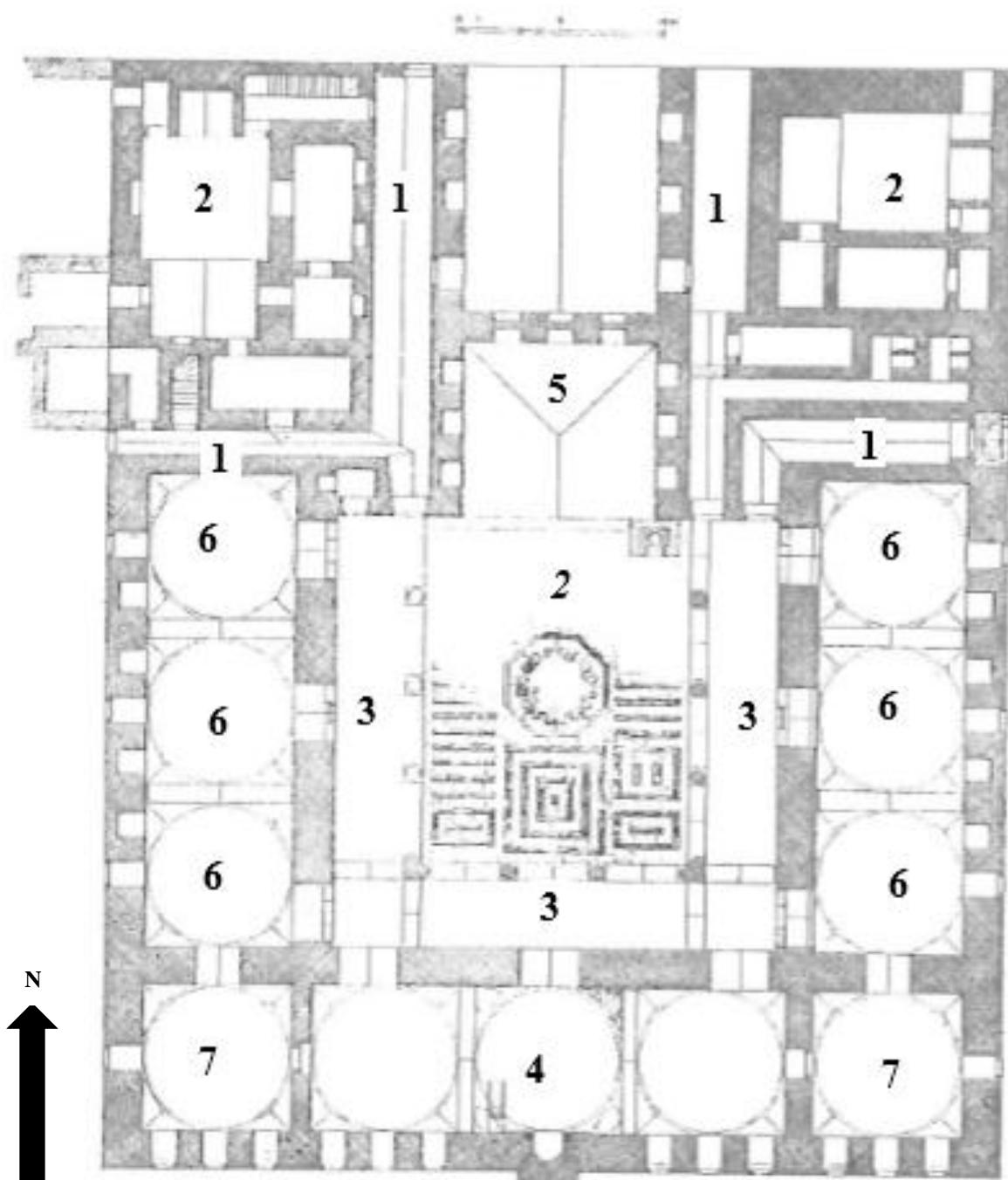
Madrasa Al Firdaws	
<b>Location</b>	The madrasa is located in Al Firdaws district, 500 meters southwest of Bab Al Maqam (Osman, N, 2009, p. 235) (Tabba, Y, 1997, p. 168) (Figure 3.1.1) (Figure 3.1.3).
<b>Establishment year</b>	Ayyubid period 1235(Osman, N, 2009, p. 235).
<b>Founder</b>	Dayfah Khatun, the daughter of the king Al Malik Al Adill and the wife of Ayyubid sultan Al Malik Al Zahir Ghazi and the son of Saladin (founder of the Ayyubid Empire) (Osman, N, 2009, p. 235) (TAlas, 1956 ,p. 84).
<b>Previous Restoration Processes</b>	In 1958, an octagonal minaret has been moved from being on top of the iwan to a new place that is a few meters away to the north west of the original location. In addition, the madrasa was widely restored in 1965, the restoration included; restoring the arcade surrounding the courtyard, rebuilding the broken columns and applying a layer of reinforced concrete on the ceiling of the arcade. The madrasa was also restored in 1989; the restoration included tiling the floor of the halls with yellow stones and resorting the north-western part of the madrasa and the northern iwans (Osman, N, 2009, p.236) (Al Jaseer, L, 2000, p. 209).
The Features of Al Firdaws	
Madrasa Al Firdaws has a symmetrical rectangular plan with regular walls. It is considered a royal madrasa because of its large size, which includes six iwans and three courtyards, which is exceptional for both spaces (ordinary madrasa has one courtyard and one or two iwans). The arcade surrounds the courtyard from three sides. The madrasa is distinguished with decorative element especially with a long cursive inscription (Figure 3.1.25), which was widely used along the arcade, around the main Iwan and on the eastern exterior facade of the madrasa. The main entrance of madrasa has an L shape to make the prayer hall facing the main iwan of the madrasa and have them on the same axes crossing the courtyard (Figure 3.1.2). The madrasa is considered the first madrasa that has muqarnas columns.	
Plan of Madrasa	
Madrasa Al Firdaws is considered as a complex because it includes a madrasa, mausoleums, Ribat and Zawiyya .The madrasa has a semi-symmetrical rectangular plan. (44*56)(43.5*55) with a total area of 2400 M <sup>2</sup> (Tabba, Y, 1997, p. 142) (Al Jaseer, L, 2000, p. 209-211). The current plan of the madrasa consist of one main entrance that is located on the eastern side, whereas the other three entrances are currently closed; one of them is on the western side and the other two are on the northern side and both of them open onto the courtyard. The main courtyard has a small octagonal basin in its center. The courtyard is surrounded by a large iwan in northern side and three arcades that surround a domed prayer hall on the south side, flanked on its east and west by domed mausoleum, hall and passage of the main entrance on the western side and the eastern entrance and a hall on the eastern side (Figure 3.1.2)	
1. Entrance 2.courtyard 3.peryarroom 4.iwan 5.hAlls 6.cells 7. Mausoleums (Figure 3.1.2)	
<p>Figure 3.1.3: site plan of madrasa Al Firdous, to neighbourhood fabric Aleppo</p>  <p>N</p> <p>1:8000</p>	
<p>Figure 3.1.1: location of the Firdows madrasa to the Aleppo citadel</p>  <p>N</p> <p>1:20000</p>	
<p>1. Madrasa Al Firdous 2. Madrasa Al Zahiriyya 3. Madrasa Al Kamiliyya</p> <p>Source: Gaube-Wirth_Kartenlegenden (Firdous 662)</p>	

Figure 3.1.2: plan of madrasa A Firdaws, Aleppo



1:300

1. Entrance 2.courtyard 3.arcade 4. Prayer hAll 5.iwan 6.hAlls 7. Mausoleums (Figure.2)

Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*... Yasser Tabbaa plan of madrasa al Firdaws, Aleppo Figure 192 Aleppo .madrasa al -Firdaws plan

## Madrasa Al Firdaws

### Plan elements

<b>Entrance</b>	The madrasa had four entrances: two of them are located on northern side, one on west, whereas the main entrance is on the eastern side of madrasa, which is the only portal that is still opened until today (Figure 3.1.4). The main entrance consists of an outer portal followed by a vestibule that has an L shape and is roofed with the barrel vault, it opens onto the main courtyard (Figure 3.1.5). The gate takes a shallow iwan shape; it is roofed with a half pointed dome and muqarnas vault, whereas the vestibule is roofed with the barrel vault (Figure 3.1.4).
<b>Courtyard</b>	The madrasa has three courtyards, the main courtyard and two small courtyards located on the two sides of the outer Iwan. The main courtyard has a square plan, the main courtyard includes an octagonal basin in the center and an octagonal close to northern iwan, the floor of courtyard is tiled with black and yellow stones that have a geometrical shape. The main courtyard is surrounded on three of its four sides by a covered passage with an arcade, whereas the north side has a big Iwan (Figure 3.1.6). The small courtyard which is located on the northeastern side of the madrasa, has a broken octagonal basin as well as a waterway extending from the basin to the floor of courtyard to the room located to the west of the courtyard (Figure 3.1.7). The other small courtyard has a well (Figure 3.1.8).
<b>Prayer hall</b>	<p>The prayer hall is located on the southern side of the madrasa; it has a rectangular plan (Figure 3.1.2). The prayer hall opens from the north onto the arcade by three big pointed arches regularly spaced and raised one-step of the level of the courtyard (Figure 3.1.11).</p> <p>The prayer hall consists of three equal parts divided by two big pointed arches (tripartite prayer hall). The central part is roofed with a dome based on a dodecagonal drum based on muqarnas pendentives and has twelve windows whereas the other two side parts are roofed with ordinary stone dome lower than the center dome. These two side parts open onto the two side mausoleums by two small doors, in addition each side has a window opening to the outside (Figure 3.1.9) (Figure 3.1.10). The middle part has a beautiful mihrab made of yellowish stone located in the middle of the southern wall of the prayer hall (Figure 3.1.35).</p>
<b>Iwan</b>	The main interior Iwan is located on the southern side of madrasa and opens onto the courtyard by a huge pointed arch. It is on the same axes with the prayer hall, which crosses the main courtyard (Figure 3.1.2) (Figure 3.1.12). The iwan has a square plan and it raised two steps above the courtyard; each wall of the Iwan has three niches probably used for the storage of books. Above each niche, with a segmental arch above each of them separated from the niche with a rectangular lintel. Above the arches is a long cursive inscription. The main Iwan is roofed with mitered vault (Figure 3.1.13). The main outer iwan is located on the southern side and it is backed by a main courtyard iwan, the outer iwan faces the north and opens onto the exterior of the madrasa by huge pointed arch. The iwan has a rectangular plan (Figure 3.1.2) The Iwan is roofed with barrel vault. Nowadays the iwan closed with a short wall (Figure 3.1.14). In addition, there are two small iwans located in background buildings on the northeastern and northwestern side of the complex and these iwans are roofed with barrel vault (Figure 3.1.7) (Figure 3.1.8).
<b>Halls</b>	There are two long rectangular symmetrical halls occupying the western and eastern sides of madrasa (Figure 3.1.2) each hall opens onto the courtyard by three large pointed arches and opens onto each mausoleum by one door located on the southern wall. The halls are divided to three equal parts by two pointed arches. Each hall has six niches and one window located on the east. Above each niche, there is a segmental arch separated from the niche with a lentil. The halls are roofed by three pointed domes based on triangle pendentives, There are two graves in the eastern hall. The halls have probably been used for the educational functions of the institution (Allen, T, 2003) (Figure 3.1, 16) (Figure 3.1.17) (Figure 3.1.18).
<b>Rooms</b>	The rooms in this madrasa are probably not cells because cells usually have a smaller size and number so it maybe that the cells were located on the first floor of the complex, which has totally collapsed (Al Jaseer, L, 2000, p. 214) or perhaps there was a dorm built separately close to the madrasa .
<b>Mausoleums</b>	The mausoleums are located at the southeastern and southwestern corners of the madrasa on each side of the prayer hall. Each mausoleum has two doors; one opens onto the prayer hall whereas the other opens onto a hall. Also each one has one window opening to the street. The mausoleums have a square plan and are roofed with pointed domes based on pendentives. In the western mausoleum, there is a text inscription. (Al Jaseer, L, 2000, p. 214) (Figure 3.1.2).
<b>Minaret</b>	The minaret is located on the roof close to the northwestern corner of madrasas. It has a cylindrical shape and is made of stone, the minarets rests on an octagonal base, and has a decagonal balcony resting on ten brackets. The top of the minaret is roofed with a Semi-spherical dome (Figure 3.2.15). The minaret was probably added later because it is short and inconsistent with the building.

## Madrasa Al Firdaws

### External facades

<b>Northern facade</b>	The northern facade consists of the northern exterior Iwan, which is closed with a short wall. The facade has a big pointed arch and two small arches on each side of the big arch. These two arches lead to two long passage on each side of the iwan. Nowadays the western small arch is filled with stone (Figure 3.1.23). According to Ibn Ajami (1479), the exterior iwan was opening onto a walled garden with basin (Tabba,Y, 1997, p. 170).
<b>Southern facade</b>	The southern facade consists of the southern exterior wall of prayer hall and mausoleums. The façade is mainly a huge solid wall without any decorations with four regularly spaced rectangular windows. On top each window there is lintel and above it a pointed segmental arch. Above the wall, there are five domes the middle one is bigger and is based on dodecagonal drum (Figure 3.1.22).
<b>Western facade</b>	The western facade includes the western hall and mausoleums. The façade consists of a huge solid wall with four regularly spaced rectangular windows on top each window there is lintel and above it segmental pointed arch. Nowadays all those windows are closed with stones except the one on the left side of the western facade. Four pointed domes are also seen from this façade (Figure 3.1.21) (Allen, T, 2003).
<b>Southern facade</b>	The eastern exterior façade is distinguished with a beautiful triple –tiered muqarnas vault portal on the main entrance of the madrasa. The facade consists- from right to left- of a frontal muqarnas-vaulted portal and a solid wall next to it (The exterior eastern façade of eastern mausoleum and hall) and above the wall, there are four equal pointed domes (Figure 3, 19). The portal takes a shallow iwan shape form and it has a wooden door with two benches. Above the door there is a lintel and above it a relieving arch of three plain slipping voussoirs, rectangular on the exterior, topped by the long inscription band, which cuts right across the entire eastern facade of the madrasa. The portal is roofed with a half pointed dome and muqarnas vault (Figure 3.1.4). Additionally and in the middle of this façade above window there is an inscription with name of building supervisor and the date of establishment (633/1235) (Figure 3.1.20) (Allen, T, 2003) (Al Jaseer, L, 2000, p. 214).

### Internal facades

<b>Northern facade</b>	The northern interior facade consists of the façade of main interior Iwan in madrasa (previously mentioned). It is raised two-steps above the level of the courtyard. The façade includes the interior northern wall of iwan, which has three rectangular niches with segmental arches above each niche. The iwan is roofed with a mitered vault. There is one door (door lead to passage of entrance) on each side of the big frontal arch of the iwan. These doors open onto the courtyard, the doors are raised one-step above the level of the courtyard, and each door has a lintel above, which is a segmental arch. There is a rectangular window on the top right of the pointed arch (Figure 3.1.12).
<b>Southern facade</b>	The southern interior facade is considered as the interior façade of the prayer hall, which opens onto the southern arcade by three pointed arches and the arcade, which opens onto the courtyard (Figure 3.1.24). The facade consists of three pointed arches fronted by the southern arcade, and is raised one-step above the courtyard. These arches are carried by muqarnas columns. The middle arch is carried by two ordinary columns, whereas the other arches are carried by two composite column ones on each corner. Behind the arcade The facade of the prayer hall consists of three regularly spaced pointed arches. Nowadays each arch is closed with a wooden door (Figure 3.1.24).
<b>Western facade</b>	The western interior facade is considered as the interior façade of the western hall, which opens onto the western arcade by three pointed arches and the arcade, which opens onto the courtyard (Figure 3.1.25). The facade consists of four pointed arches fronted by the western arcade, and is raised one-step of courtyard. These arches are carried by muqarnas columns and open onto the courtyard, except for one Corinthian column of a pointed arch that is attached with northern wall of courtyard. All arches are carried by ordinary columns except the one on the corner (shared with southern interior facade) carried by two composite column. Behind the arcade, the facade of western hall consists of four regularly spaced pointed arches (Figure 3.1.25). In the middle of the hall facade, there is long cursive inscription (Qur'anic inscriptions) that is extended along the wall (Al Jaseer, L, 2000, p. 218).

## Madrasa Al Firdaws

### Internal facades

<b>Eastern facade</b>	<p>The eastern interior facade is considered as the interior façade of the eastern hall, which opens onto the eastern arcade with three pointed arches and the arcade, which opens onto the courtyard (Figure 3.1.26).</p> <p>The facade consists of four pointed arches fronted by the eastern arcade, and is raised one-step of courtyard. These arches are carried by muqarnas columns and opens onto the courtyard.</p> <p>It consists of four pointed arches of the arcade, which is raised one-step of the courtyard, and it's carried by Muqarnas columns except one Corinthian column of a pointed arch which is attached with northern wall of the courtyard. All arches are carried by normal columns except one on the corner (shared with southern interior facade) carried by two composite column. Behind the arcade, the facade of eastern hall consists of four regularly spaced pointed arches (Figure 3.1.26). In addition, in the middle of this facade, there is long cursive inscription extended along the wall. This inscription contains a text about the founder of madrasa (Fatima Khatun) (Al Jaseer, L, 2000, p. 218).</p>
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### Decorative elements

Madrasa Al Firdaws is rich with decorative elements, especially with text inscriptions that are considered the most attractive decorative elements in madrasa.

These inscriptions vary between Sufi poetry and Quranic texts. The inscriptions texts are widely used in two-locations, one of them goes along the interior walls of the madrasa, the arcade and the main Iwan (Figure 3.1.27) (Figure 3.1.28). The exterior inscriptions extend along the east exterior facade of the madrasa (Tabba, Y, 1997, p. 171-175). In addition, there are Quranic inscriptions in the Mihrab of the prayer hall, which surrounds the semicircular stripe above it (Figure 3.1.29).

The floor of the courtyard and arcades are paved with a black and white stones, which have a rectangular shape in the floor of the courtyard, whereas it forms sequential strips of white and black stones on the floor of the arcade .The basin (fountain) is located at the center of the courtyard, and has an octagonal shape (Figure 3.1.30) (Figure 3.1.6).

The madrasa is distinguished with muqarnas used on the main gate, the columns of the arcade and the dome of the mihrab in the prayer room. The muqarnas on the main portal are three tiered rows making up the muqarnas vault, which has an Iranian style (Figure 3.1.4) (Figure 3.1.31) (Tabba, Y, 1997, p.168). Most of the columns of the arcade have Muqarnas capitals (Figure 3.1.32) except two of them that have Corinthian capitals (Figure 3.1.33). The Muqarnas of the mihrab dome is complex because it consists of four tiered rows with squinches of three tiers in each corner of the complex muqarnas (Figure 3.1.34).

The mihrab is considered one of the most beautiful mihrabs in Aleppo because it is decorated with four different colored marble (white, red, porphyry and green diorite marble) and is the only mihrab that has quranic inscription. In addition, there are two granite columns with muqarnas capitals on both sides of the mihrab (Figure 3.1.35).

### Structural elements

<b>Vaults</b>	<p>The barrel vaults were widely used in Al Firdaws madrasa, these vaults are used to roof the passage of the main entrance that leads to the courtyard (Figure 3.1.5) and roof the passages, which flank the iwans and lead to the courtyard (Figure 3.1.36). The mitered vault is used to roof the main interior iwan (Figure, 13). Whereas other iwans are roofed with barrel vaults (Figure 3.1.8). In addition the main entrance is roofed by a muqarnas-vaulted portal</p>
<b>Domes</b>	<p>The madrasa is roofed with eleven hemispherical domes, all of them are equal in size except the central dome of the prayer hall, which is higher than other domes (Figure 3.1.37) (Figure 3.1.38).</p> <p>The middle pointed dome of the prayer hall is made of stone. It is based on dodecagonal drum whereas the other domes (domes of halls, mausoleums and prayer hall) are based on triangular pendentives that are made of brick (Figure 3.1.39).In addition, there is a half-pointed lobular dome located on the top of the portal of the main entrance of madrasa (Figure 3.1.4).</p>
<b>Arches</b>	<p>The pointed arches were widely used in different areas of madrasa such as in the arcade (Figure 3, 1, 24), prayer hall (Figure 3.1.9), halls (Figure 3.1.16) (Figure 3.1.17), iwans (Figure 3.1.12), and the main entrance of the Madrasa. Whereas the segmental arches were used in windows, niches and doors of madrasa with some segmental arches in iwans (Figure 3.1.27) (Figure 3.1.13), and halls (Figure 3.1.21). In addition, there is the frontal arch of the entrance, which includes muqarnas (Figure 3.1.4).</p>

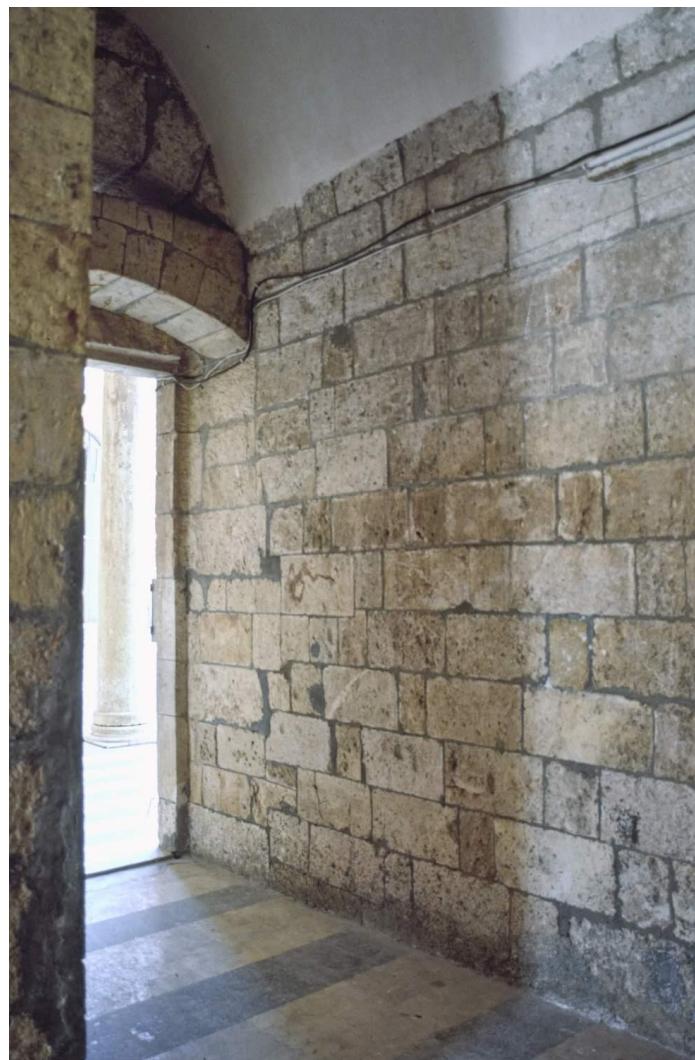
Madrasa Al Firdaws	
Structural elements	
<b>Walls</b>	The walls of the madrasa are thick. They were built using medium and big rectangular ashlar blocks.
<b>Columns</b>	<p>The columns were used in the arcade of madrasa and in mihrab of the prayer hall. The arcade of madrasa has ten columns surrounding the main courtyard on three sides (Figure 3.1.24). Two of them are composite columns (double capital) that are located on each corner of the northern interior facade (Figure 3.1.24) (Figure 3.1.30) (Figure 3.1.32), whereas other are normal columns (Figure 3.1.24) (Figure 3.1.11). All columns have muqarnas capitals except two with Corinthian capitals, which are located close to the main interior iwan (Figure 3.1.33) (Figure 3.1.24). All columns of the arcade have a circular base except two columns, which are located in the center part of the western and eastern wing of the arcade. The columns of the arcade are made of yellowish marble (Figure 3.1.33) (Figure 3.1.26).</p> <p>The mihrab of the prayer hall has two columns with muqarnas capitals on each side of it; the base of the columns has a circle shape (Figure 3.1.41). The columns are made of white marble (Figure 3.1.35).</p>
<b>Transition elements</b>	<p>The transition element used from the square plan of the middle part of the prayer hall to the dodecagonal drum of the dome drum was bipartite triangular pendentives, which has complex muqarnas (Figure 3.1.34), the dodecagonal drum itself is considered a transition element, as it serves the transfer from the dodecagonal shape to the circular shape of the base of the dome (Figure 3.1.9) (Figure 3.1.34) (Figure 3.1.39) (Figure 3.1.40).</p> <p>Whereas the transition elements used from square plan to the circular shape of the base of the dome was the triangular pendentives such as in mausoleums, halls and the two sides of prayer hall (Figure 3.1.16) (Figure 3.1.17) (Figure 3.1.18).</p>

**Figure 3.1.4:** the main entrance of madrasa Al Firdaws, Aleppo



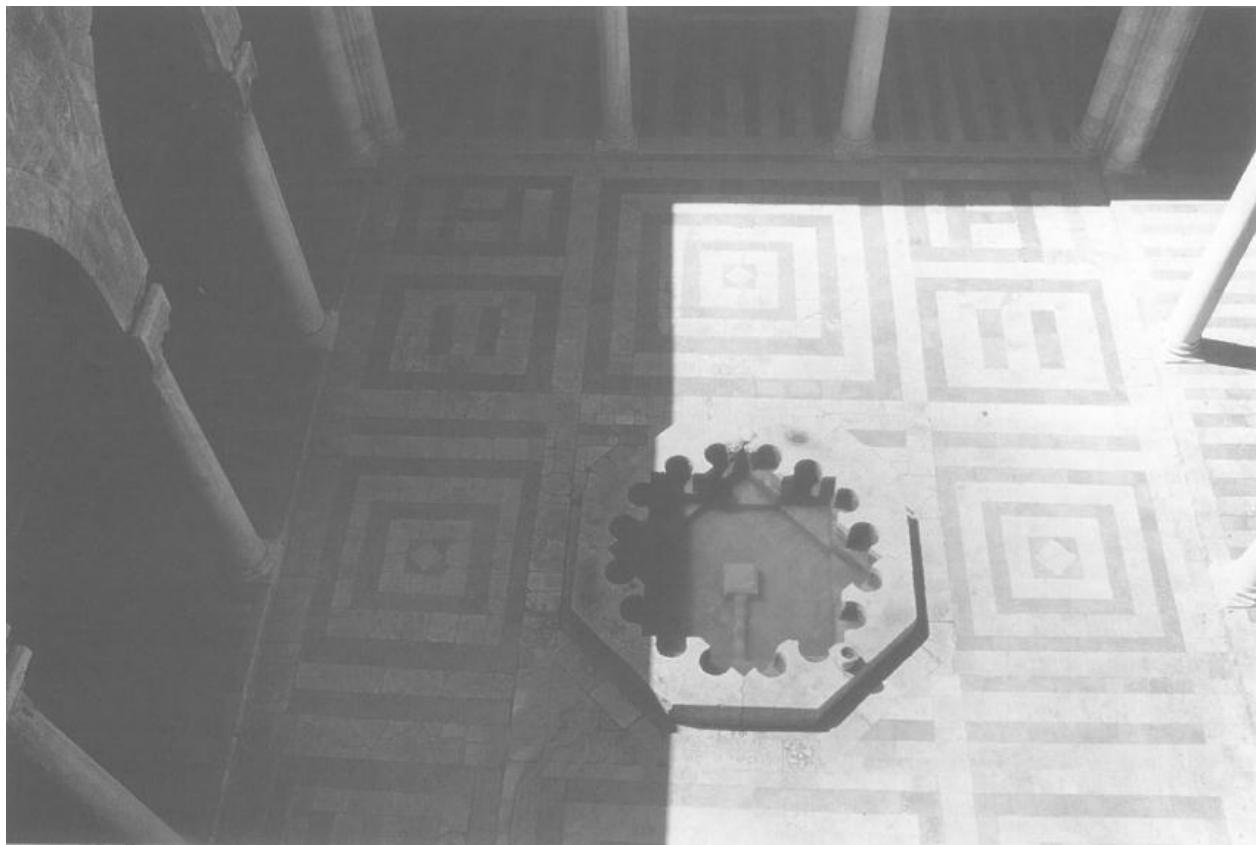
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 195 Aleppo .madrasa al -Firdaws portal

**Figure 3.1.5:** the corridor of main entrance of madrasa open onto the courtyard of madrasa Al Firdaws, Aleppo. Jun 1990.



*Source: Sanctuary 20th Archnet.  
<https://archnet.org/print/preview/mediacontents=111905&views=i>.*

**Figure 3.1.6:** the main courtyard of madrasa Al Firdaws.



Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*. Figure 197 Aleppo .madrasa al -Firdaws courtyard from above

**Figure 3.1.7:** northeasters courtyards and Iwan of madrasa Al Firdaws, Aleppo.



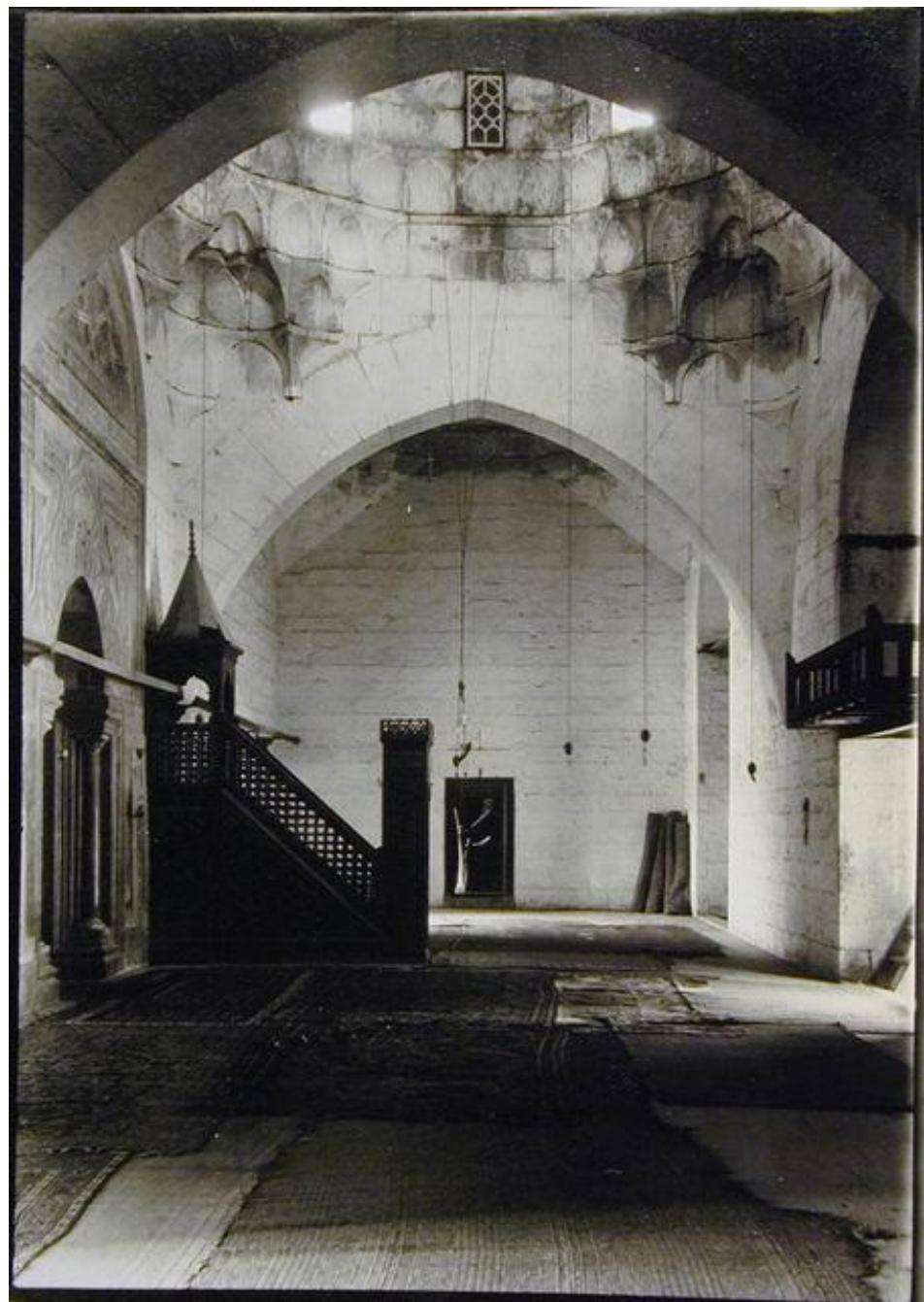
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 178 Aleppo .madrasa al –Firdaws northeasters courtyard from above

**Figure 3.1.8:** northwestern courtyard and Iwan of madrasa Al Firdaws, Aleppo.



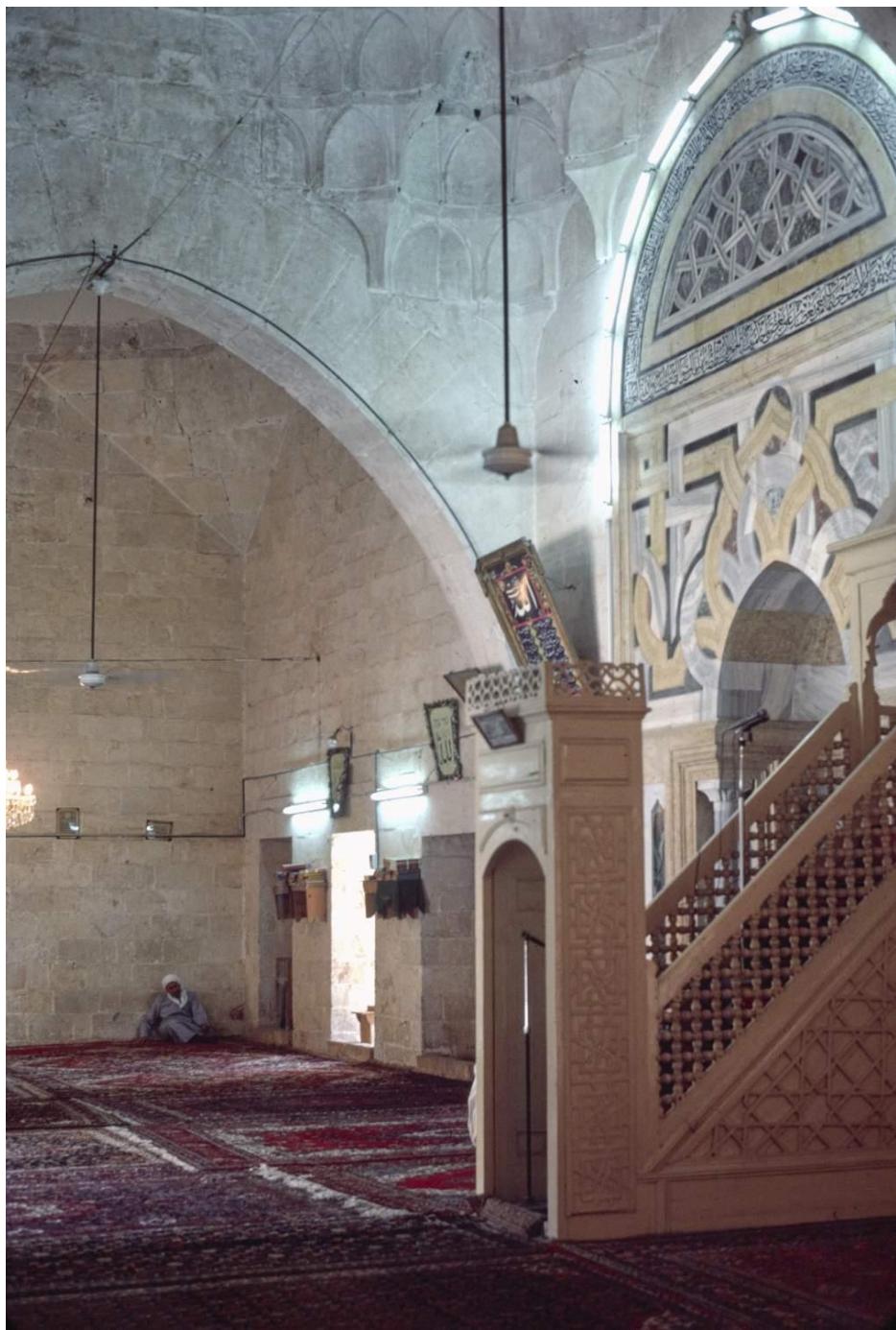
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 179 Aleppo .madrasa  
al -Firdaws north western courtyard :east courtyard facade

**Figure 3.1.9:** prayer hall of madrasa Al Firdaws, Aleppo. Early 20<sup>th</sup>



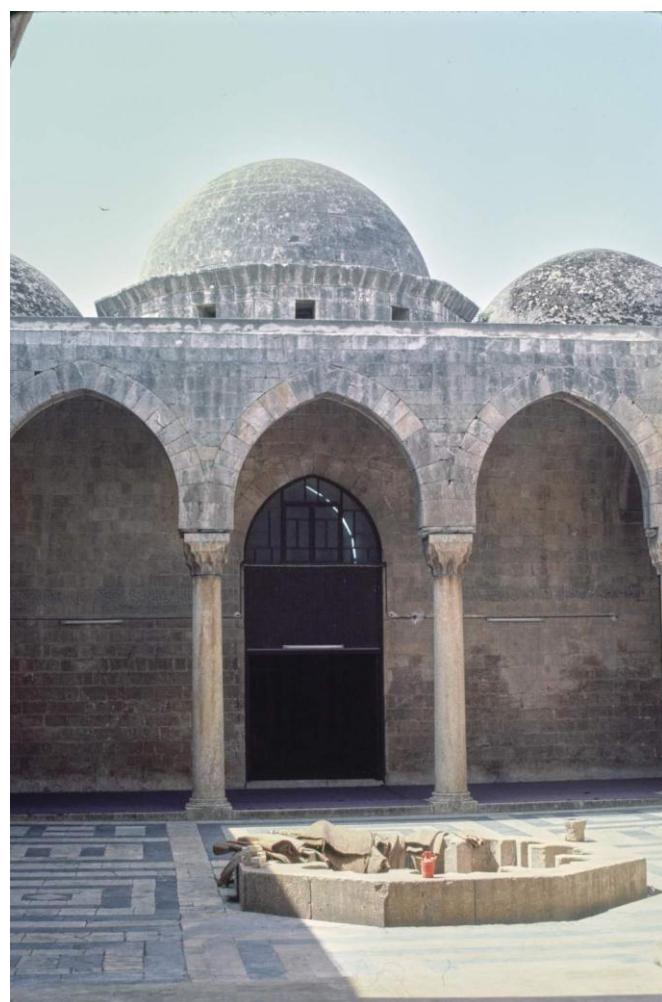
*Source: Sanctuary 20th Archnet .[https://archnet.org/sites/1803/media\\_contents/35695](https://archnet.org/sites/1803/media_contents/35695)*

**Figure 3.1.10:** prayer hall of madrasa Al Firdaws, Aleppo.1983



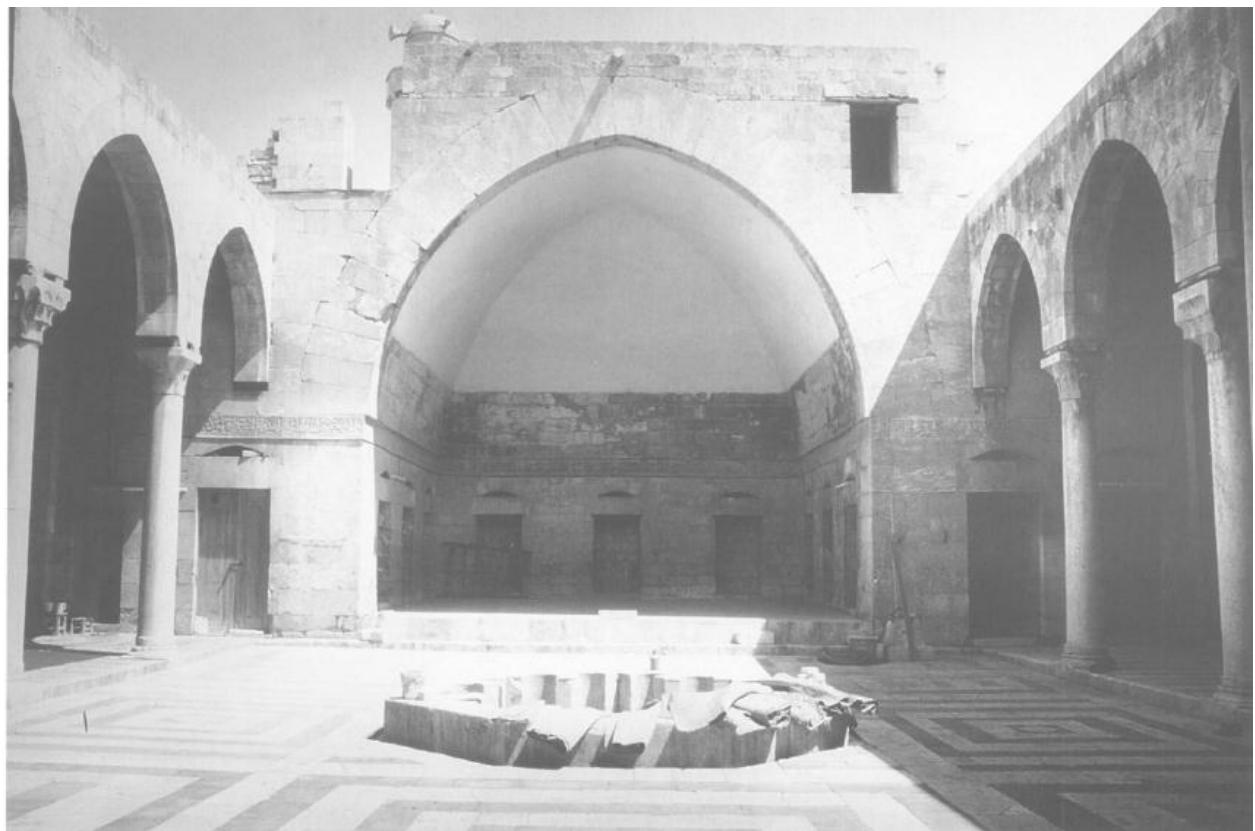
*Source: Sanctuary archnet. [https://archnet.org/sites/1803/media\\_contents/111900](https://archnet.org/sites/1803/media_contents/111900)*

**Figure 3.1.11:** façade, domes and entrance of prayer hall of madrasa Al Firdaws, Aleppo.1983



Source: Archnet, [https://archnet.org/sites/1803/media\\_contents/111851](https://archnet.org/sites/1803/media_contents/111851)

**Figure 3.1.12:** the main interior Iwan and façade of madrasa, Aleppo



Source: Tabbaa. (1997). *Constructions of Power and Piety in Medieval Aleppo*. Figure 202 Aleppo. Southern iwan

**Figure 3.1.13:** the main interior Iwan of madrasa, Aleppo, 1990



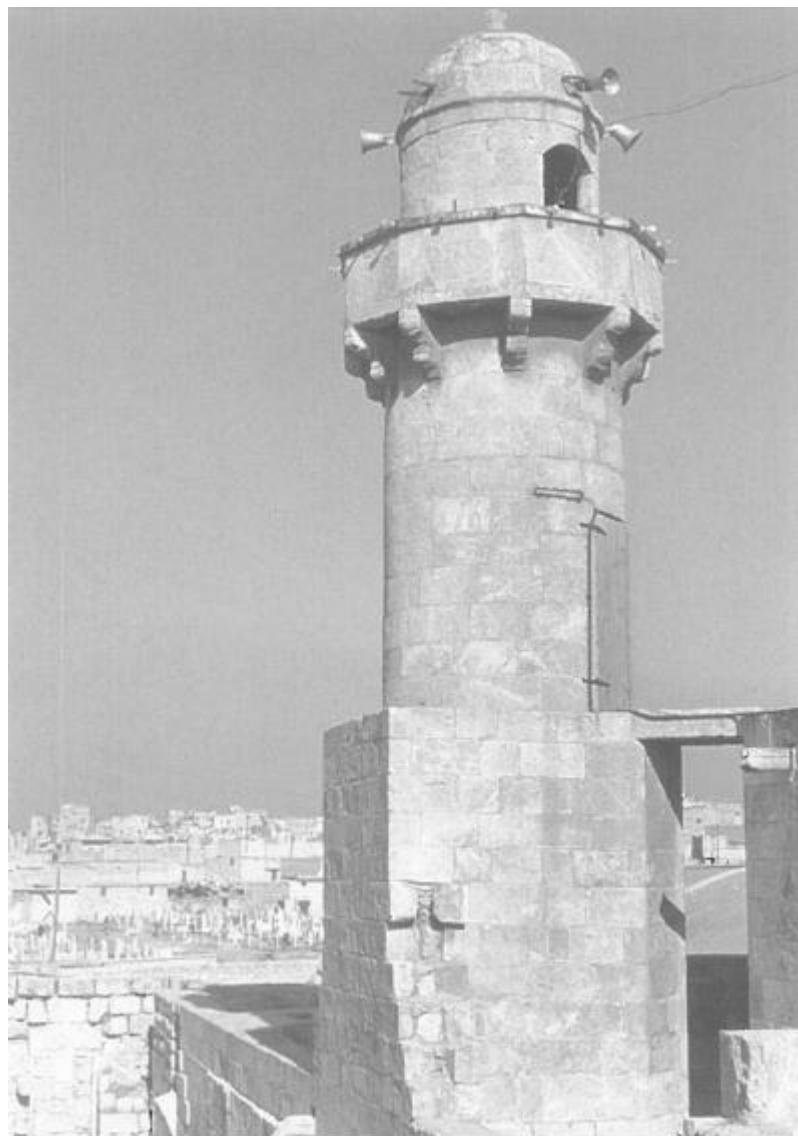
Source: *Sanctuary* 20th Archnet . <https://archnet.org/print/preview/mediacontents=111907&views=i>

**Figure 3.1.14:** the main exterior Iwan of madrasa, Aleppo, 1984



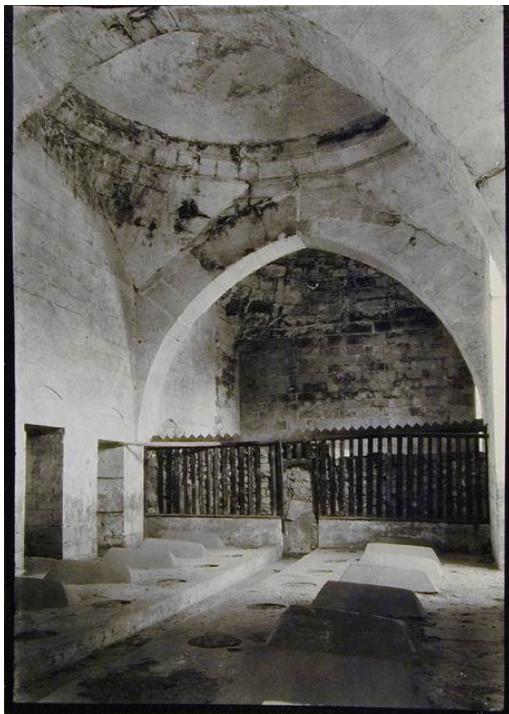
Source: *Sanctuary* 20th Archnet. <https://archnet.org/print/preview/mediacontents=111956&views=i>.

**Figure 3.1.15:** the minaret of madrasa Al Firdows, Aleppo



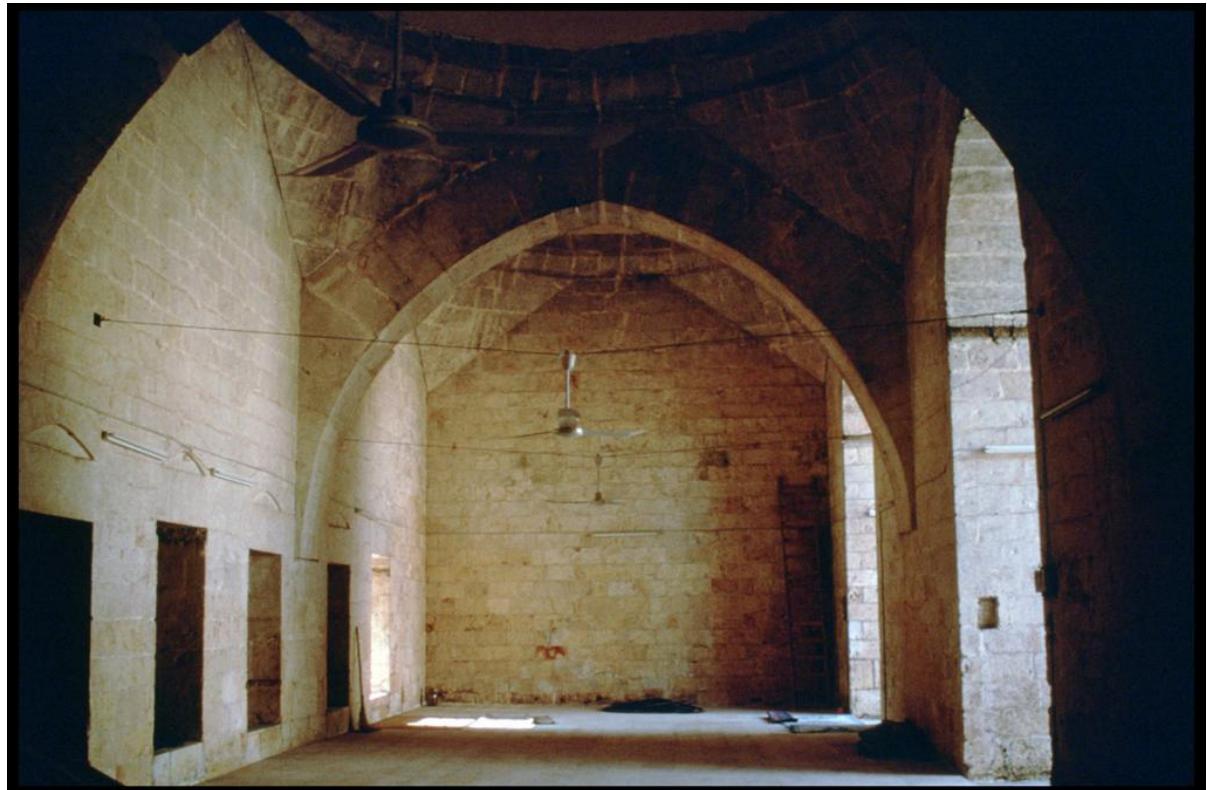
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 175 Aleppo . Minaret

**Figure 3.1.16:** the eastern hall of madrasa Al Firdows, Aleppo 20ceuntry



Source: *Sanctuary 20th Archnet*. <https://archnet.org/print/preview/mediacontents=35705&views=i>

**Figure 3.1.17:** the western hall of madrasa Firdows, Aleppo 1990



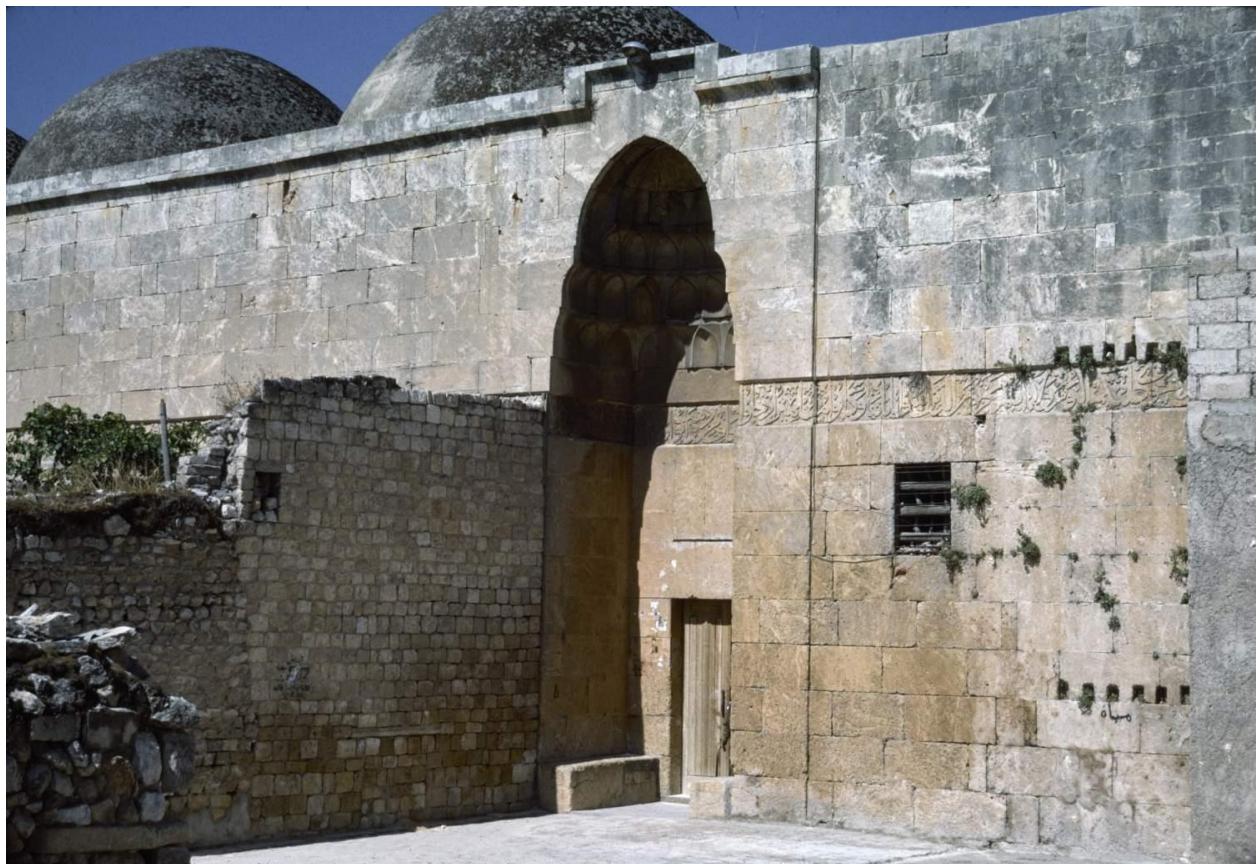
Source: *Sanctuary 20th Archnet*. <https://archnet.org/print/preview/mediacontents=4088&views=i>

**Figure 3.1.18:** the western hall of madrasa Firdows, Aleppo 1990



Source: *Manar hammed. 2004).Architectures Ayyoubides, le style austere a Alep the interior hall on west side of courtyard .*

**Figure 3.1.19:** view of eastern exterior facade of madrasa Al Firdows, Aleppo 1990



Source: *Sanctuary* 20th Archnet. <https://archnet.org/print/preview/mediacontents=111947&views=i>.

**Figure 3.1.20:** inscription in middle of eastern exterior façade of madrasa Al Firdows, Aleppo 1990



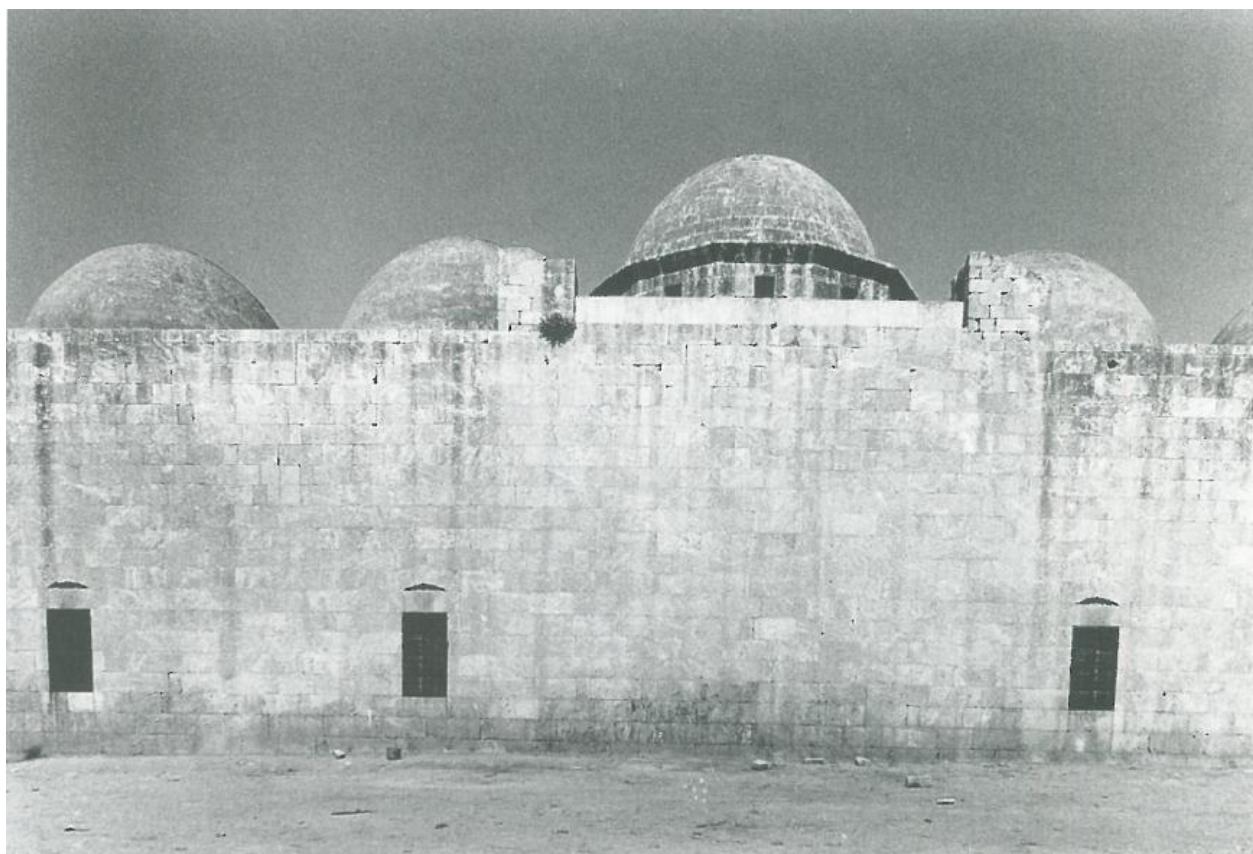
Source: *Sanctuary* 20th Archnet. <https://archnet.org/print/preview/mediacontents=111856&views=i>.

**Figure 3.1.21:** view of western exterior facade of madrasa Al Firdows, Aleppo



Source : [https://www.panoramio.com/user/4238861?photo\\_page=8](https://www.panoramio.com/user/4238861?photo_page=8)

**Figure 3.1.22:** view of southern exterior facade of madrasa Al Firdows, Aleppo



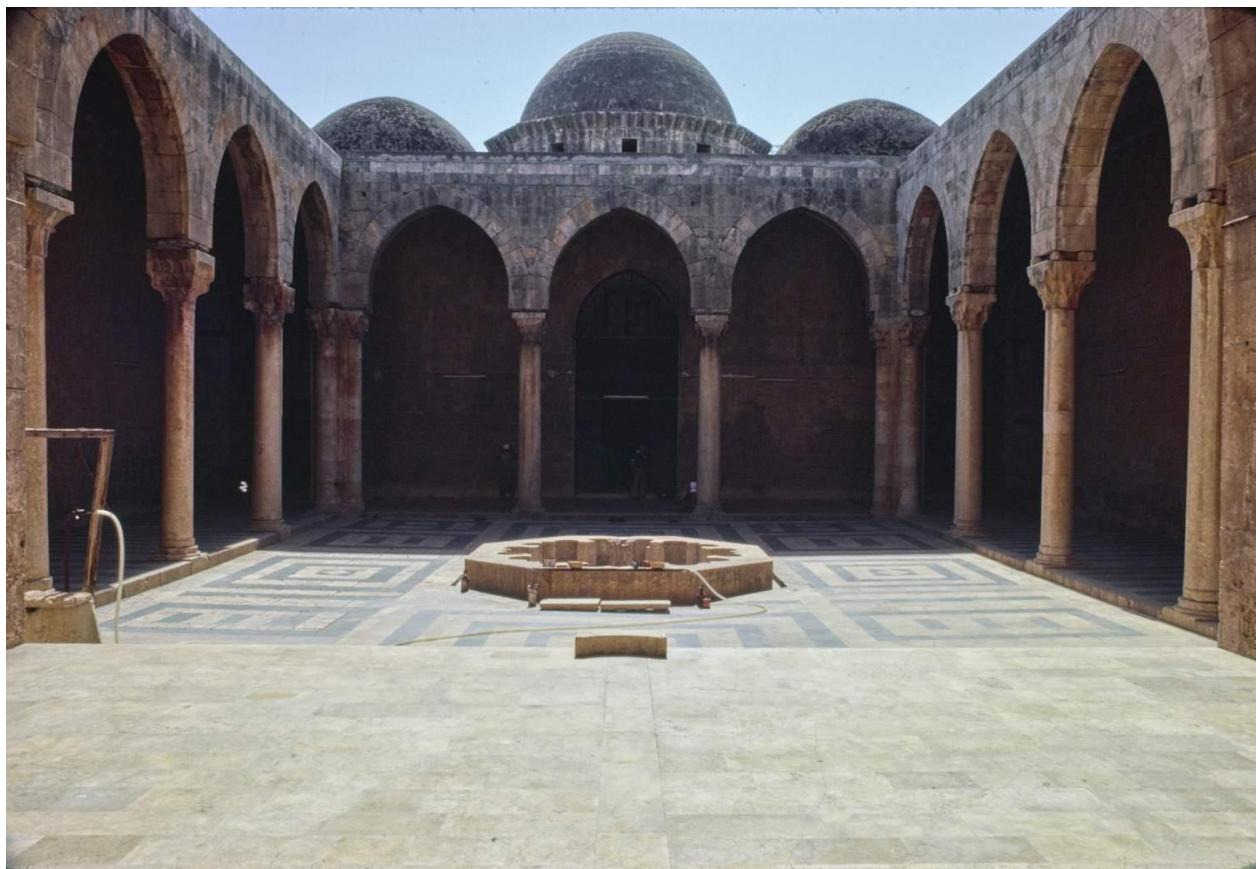
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 126Aleppo .

**Figure 3.1.23:** view of northern exterior facade of madrasa Al Firdows, Aleppo 1983



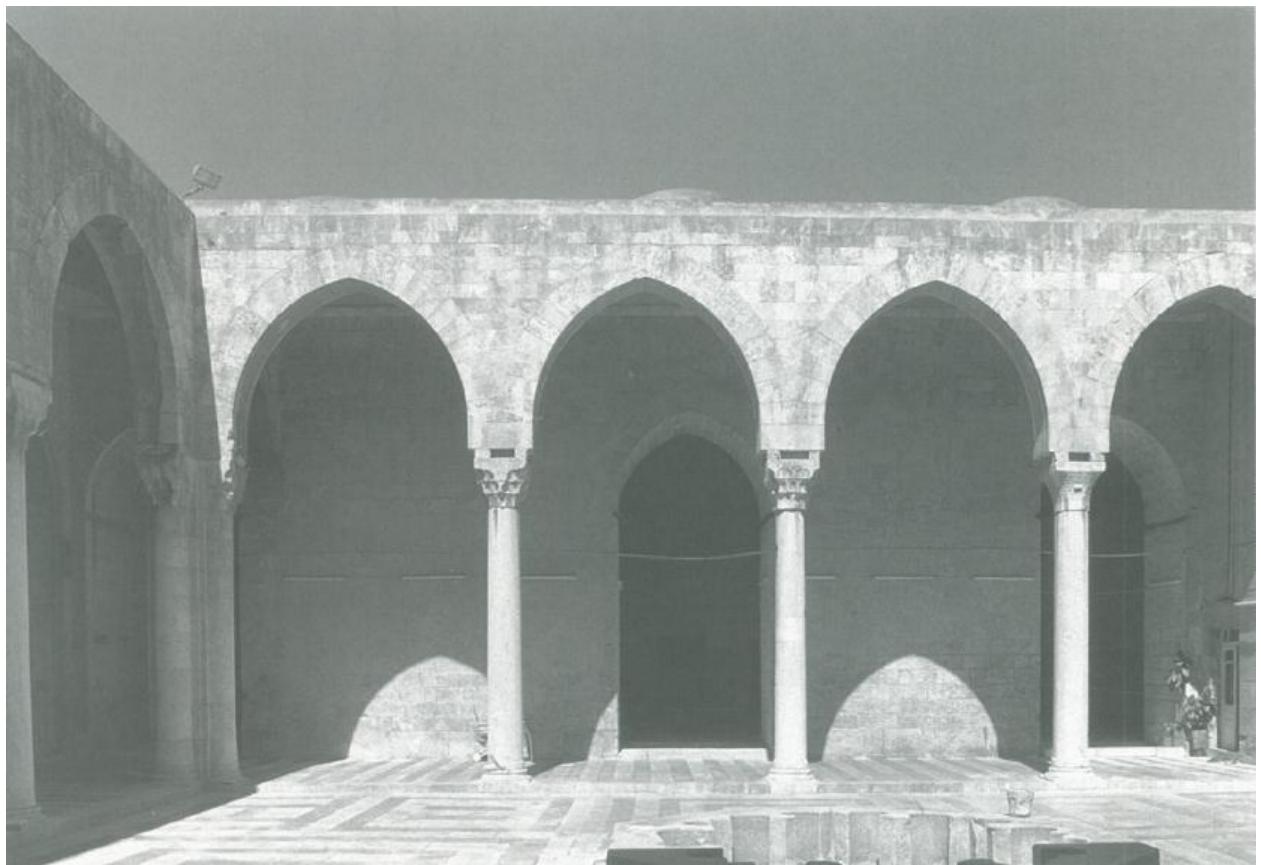
Source: Sanctuary 20th Archnet.<https://archnet.org/print/preview/mediacontents=111924&views=i>

**Figure 3.1.24:** view of southern interior facade of madrasa Al Firdows, Aleppo.1979



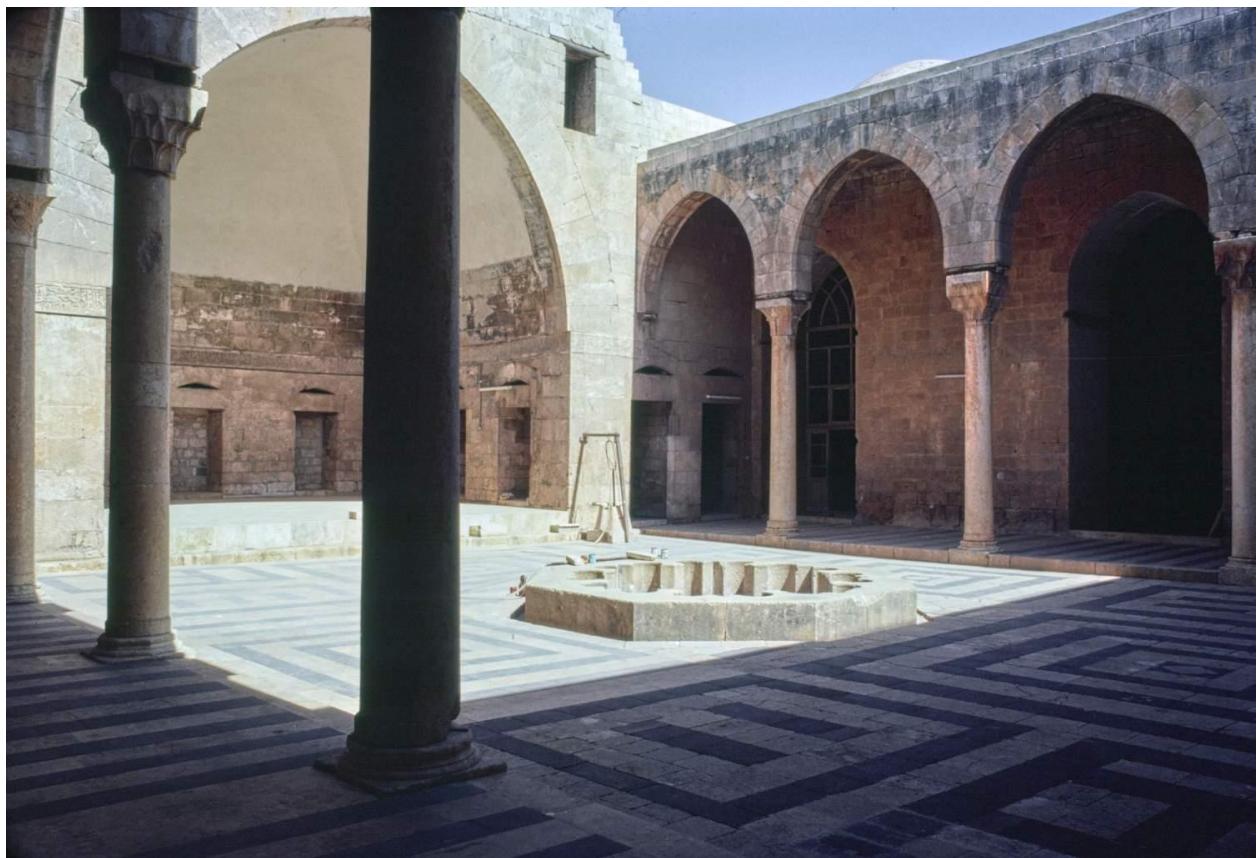
Source: *Sanctuary* 20th Archnet.<https://archnet.org/print/preview/mediacontents=111912&views=i>

**Figure 3.1.25:** view of western interior facade of madrasa Al Firdows, Aleppo



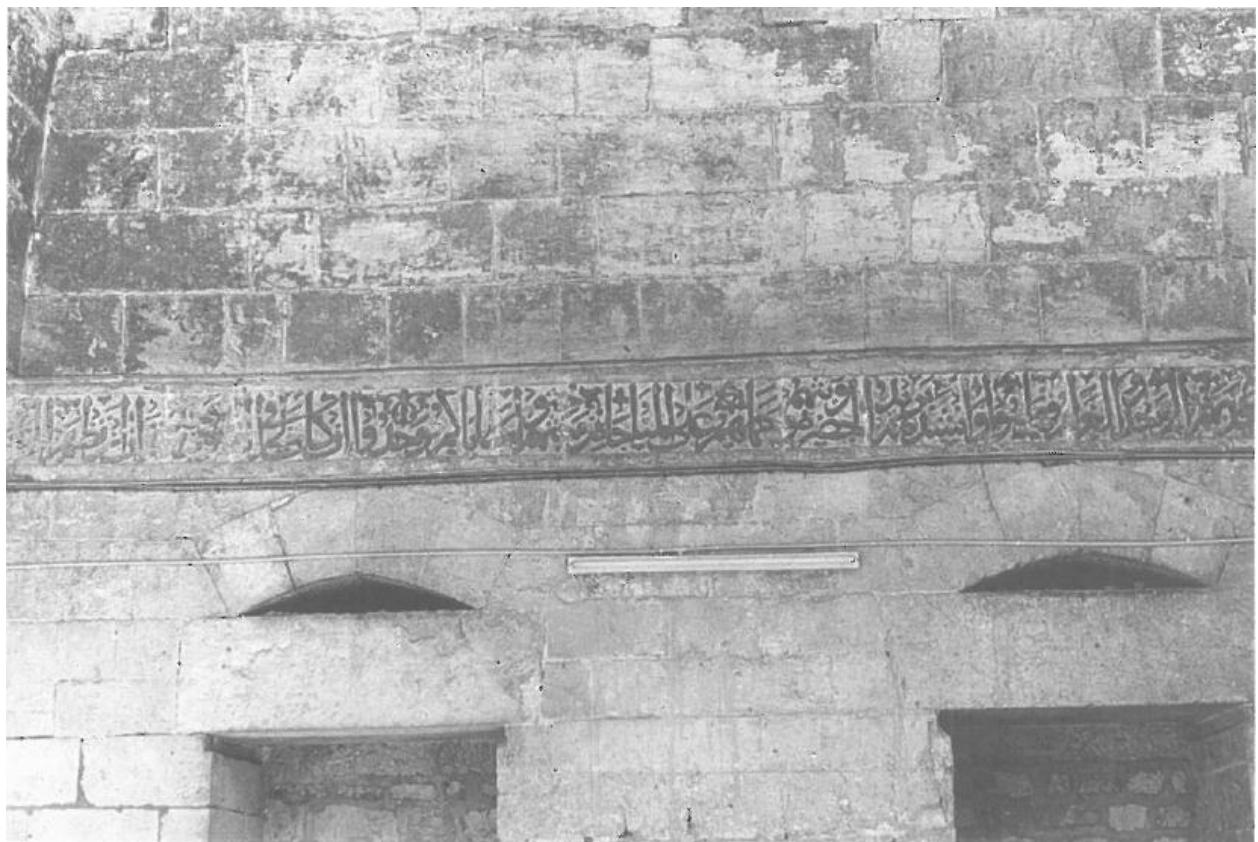
Source: Tabba.(1997).Constructions of Power and Piety in Medieval Aleppo, Figure 153 Aleppo . Madrasa Al firdaws western courtyard facade

**Figure 3.1.26:** view of courtyard and eastern interior facade of madrasa Al Firdows, Aleppo.1979



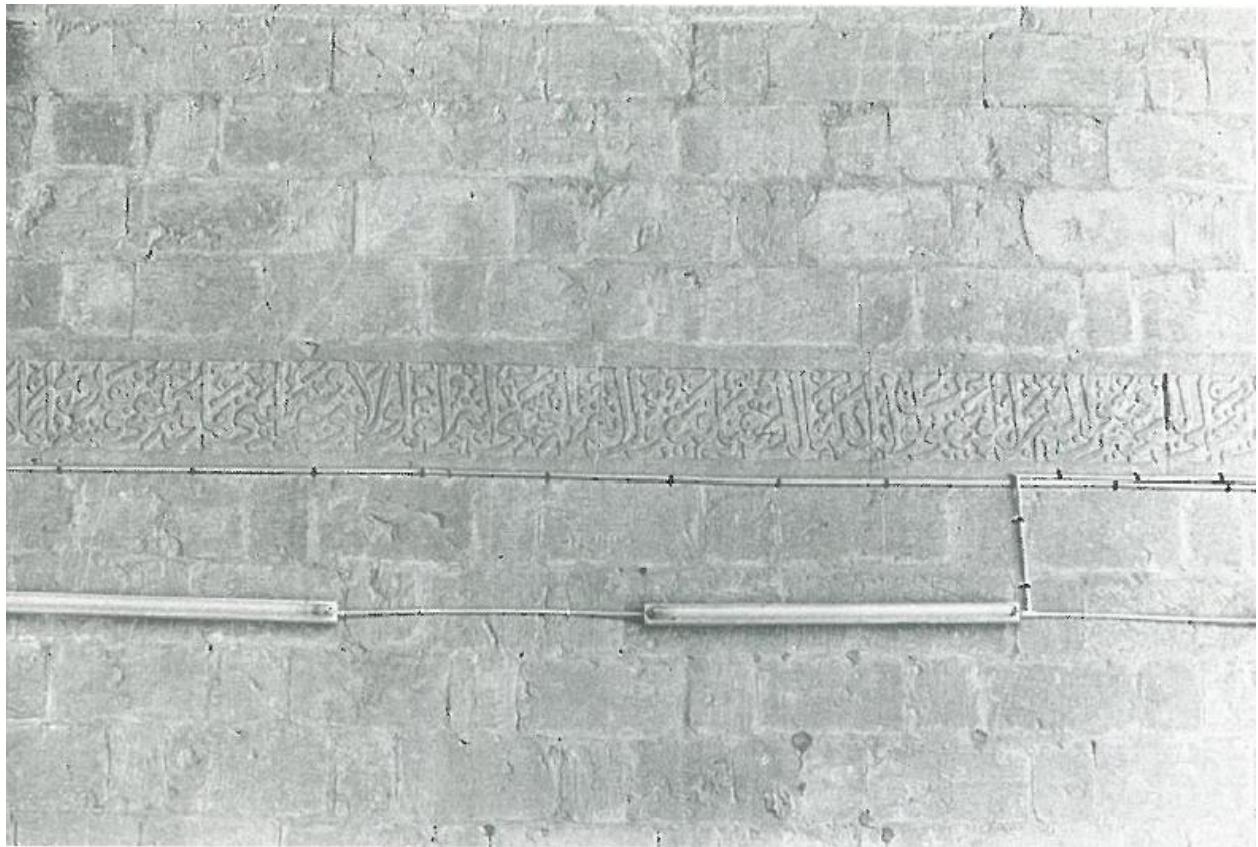
Source: *Sanctuary* 20th Archnet.<https://archnet.org/print/preview/mediacontents=111911&views=i>

**Figure 3.1.27:** the inscription of main interior Iwan of madrasa Al Firdows, Aleppo.



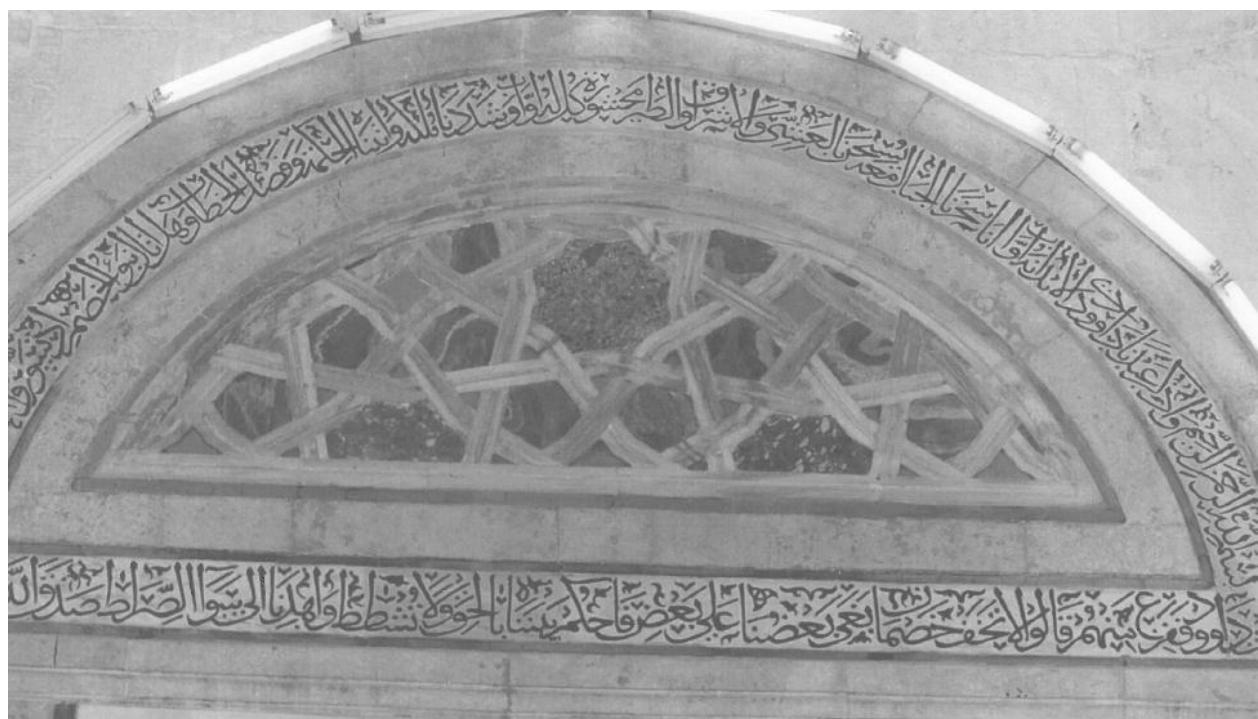
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 208 Aleppo . Madrasa Al firdaws courtyard inscription: portion on right rear of main iwan

**Figure 3.1.28:** view of courtyard inscription of madrasa Al Firdows, Aleppo.



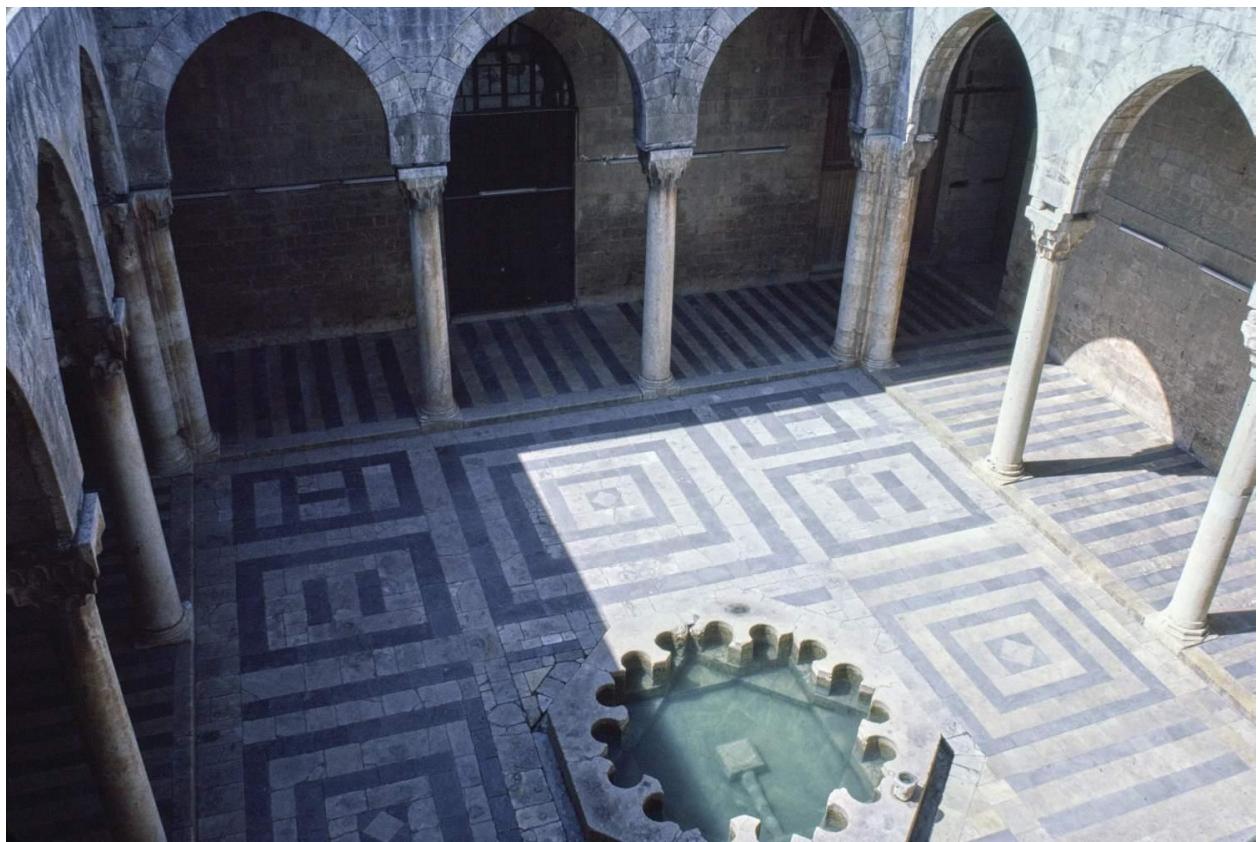
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 210 Aleppo . Madrasa Al firdaws courtyard inscription: courtyard inscription above the middle of the fluorescent light)

**Figure 3.1.29:** inscription above the Mihrab of prayer hall madrasa Firdows, Aleppo.



Source: Tabba.(1997).Constructions of Power and Piety in Medieval Aleppo, Figure 201 Aleppo . Madrasa Al firdaws mihrab: upper position

**Figure 3.1.30:** view of courtyard including the basin of it and paved of arcade madrasa Al Firdows, Aleppo 1.987



Source: *Sanctuary* 20th Archnet. <https://archnet.org/print/preview/mediacontents=111919&views=i>

**Figure 3.1.31:** Muqarnas of the main entrance of madrasa Al Firdows, Aleppo.1980



*Source: Sanctuary 20th Archnet.<https://archnet.org/print/preview/mediacontents=111959&views=i>.*

**Figure 3.1.32:** The muqarnas of composite column of madrasa Al Firdows, Aleppo.1980



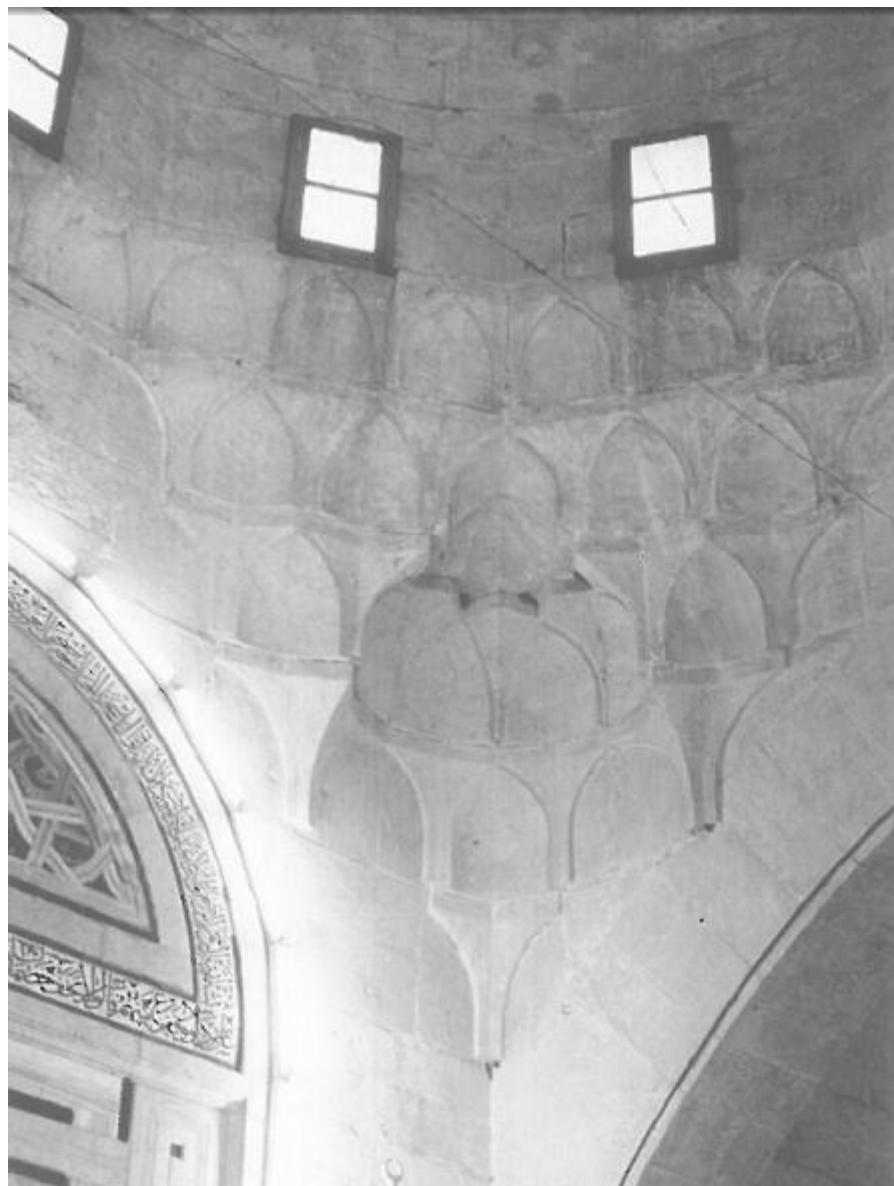
Source: *Sanctuary* 20th Archnet.<https://archnet.org/print/preview/mediacontents=111902&views=i>

**Figure 3.1.33:** The Corinthian capital of column in madrasa Al Firdows, Aleppo.1990



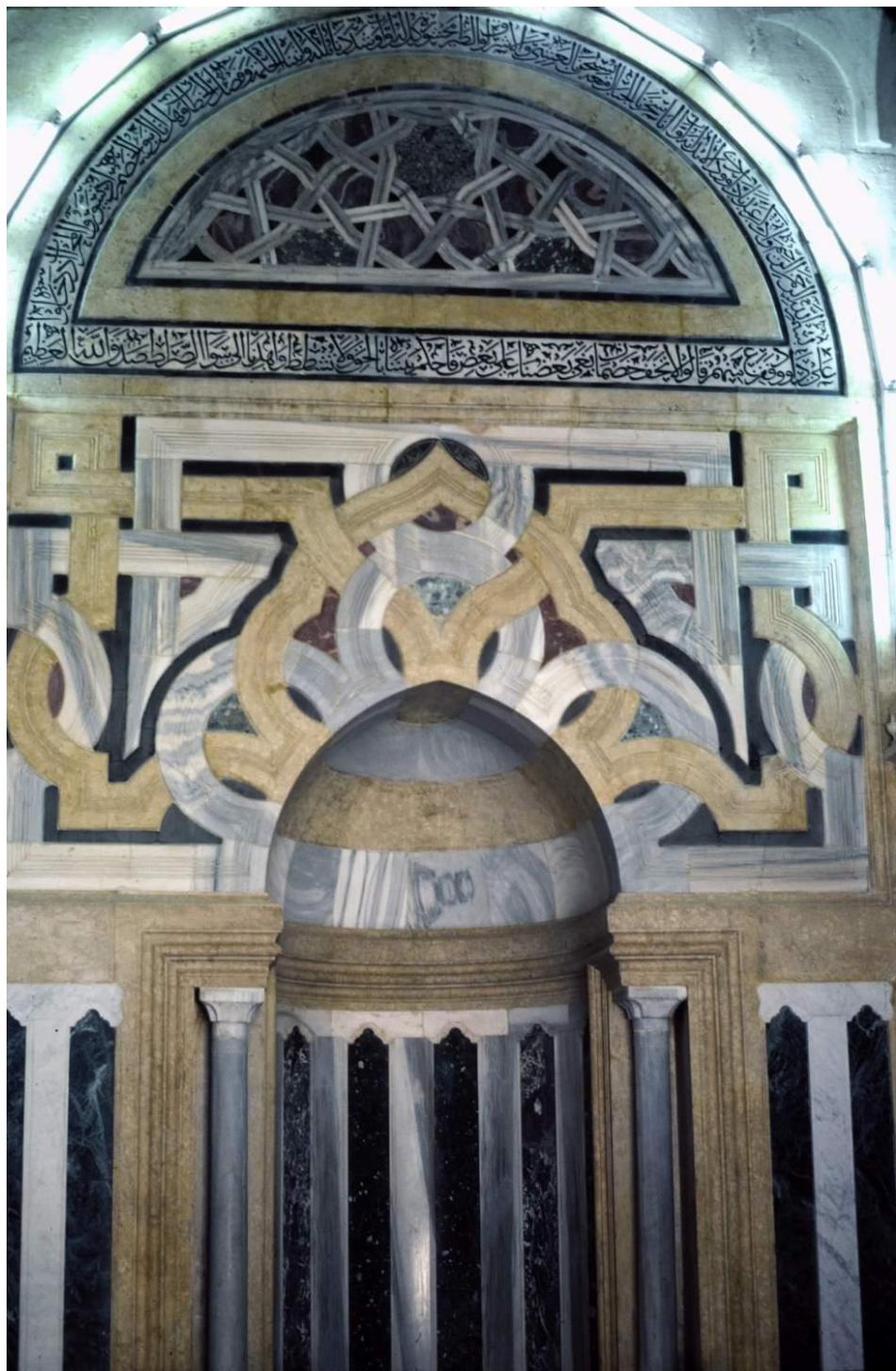
Source: *Sanctuary 20th Archnet*. <https://archnet.org/print/preview/mediacontents=111850&views=i>.

**Figure 3.1.34:** The Muqarnas of dome mihrab in prayer hall madrasa Al Firdows, Aleppo.



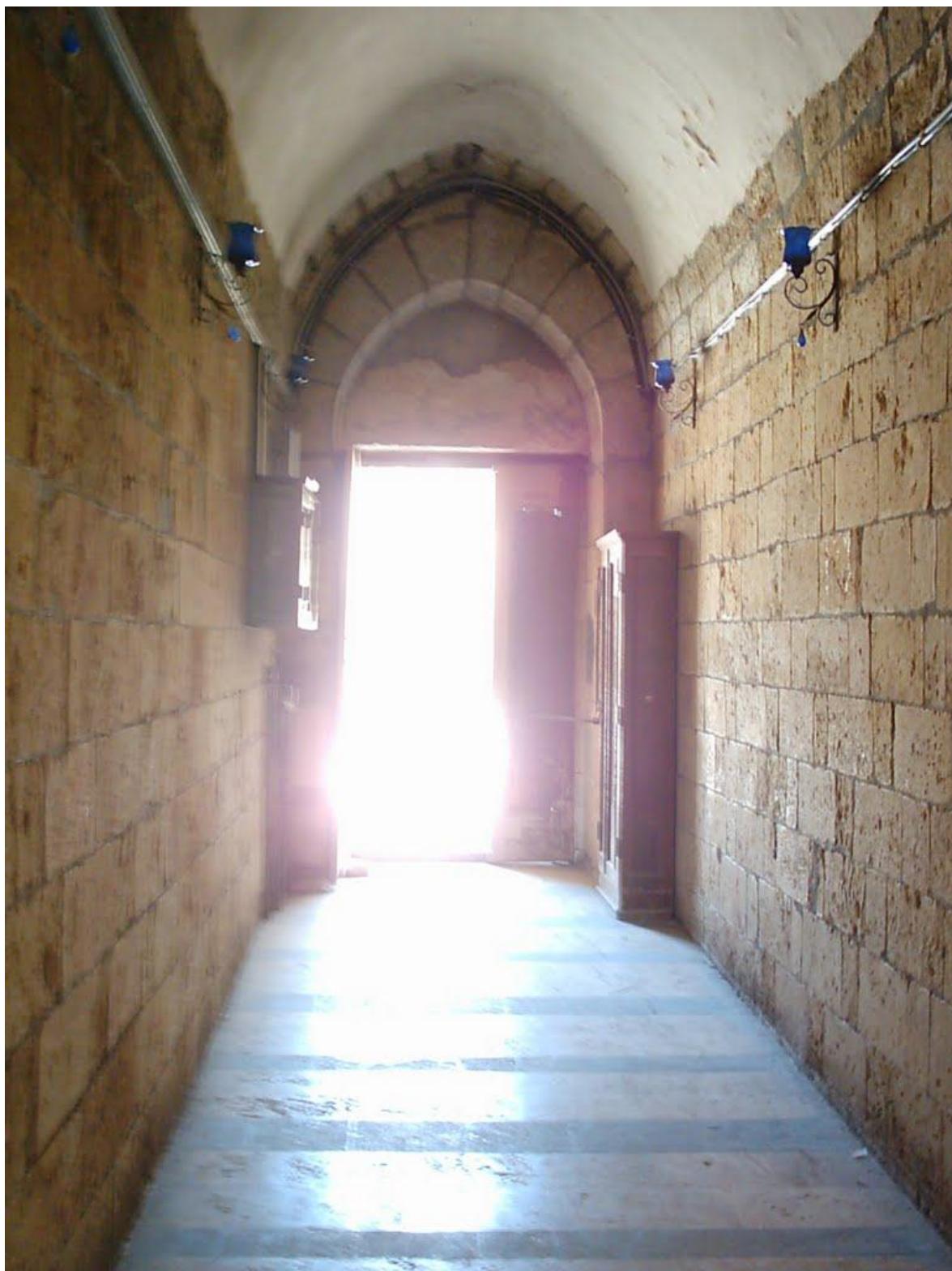
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 199 Aleppo . Madrasa Al firdaws transition zone of central dome

**Figure 3.1.35:** The mihrab in prayer hall madrasa Al Firdows, Aleppo.1980



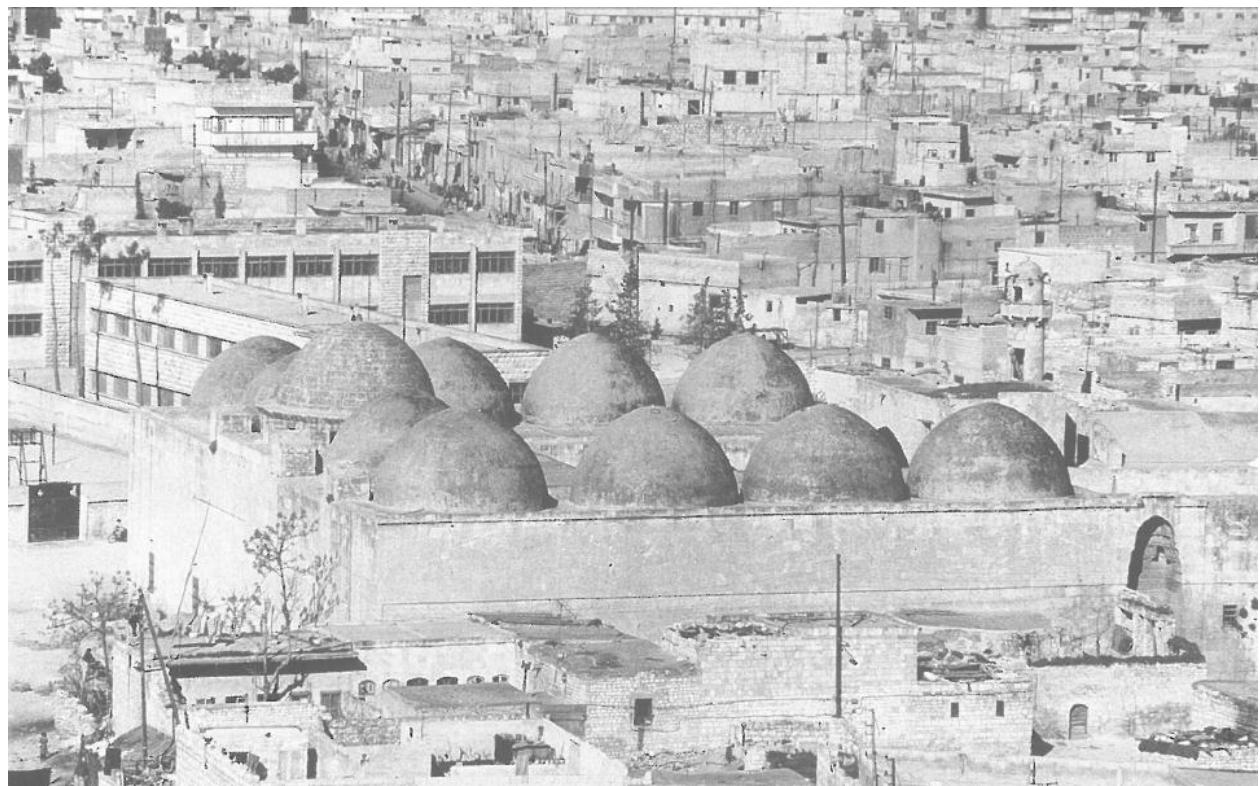
*Source: Sanctuary 20th Archnet.<https://archnet.org/print/preview/mediacontents=111893&views=i>*

**Figure 3.1.36:** view of the barrel vaults of corridor lead to main courtyard of madrasa Al Firdows, Aleppo.1980



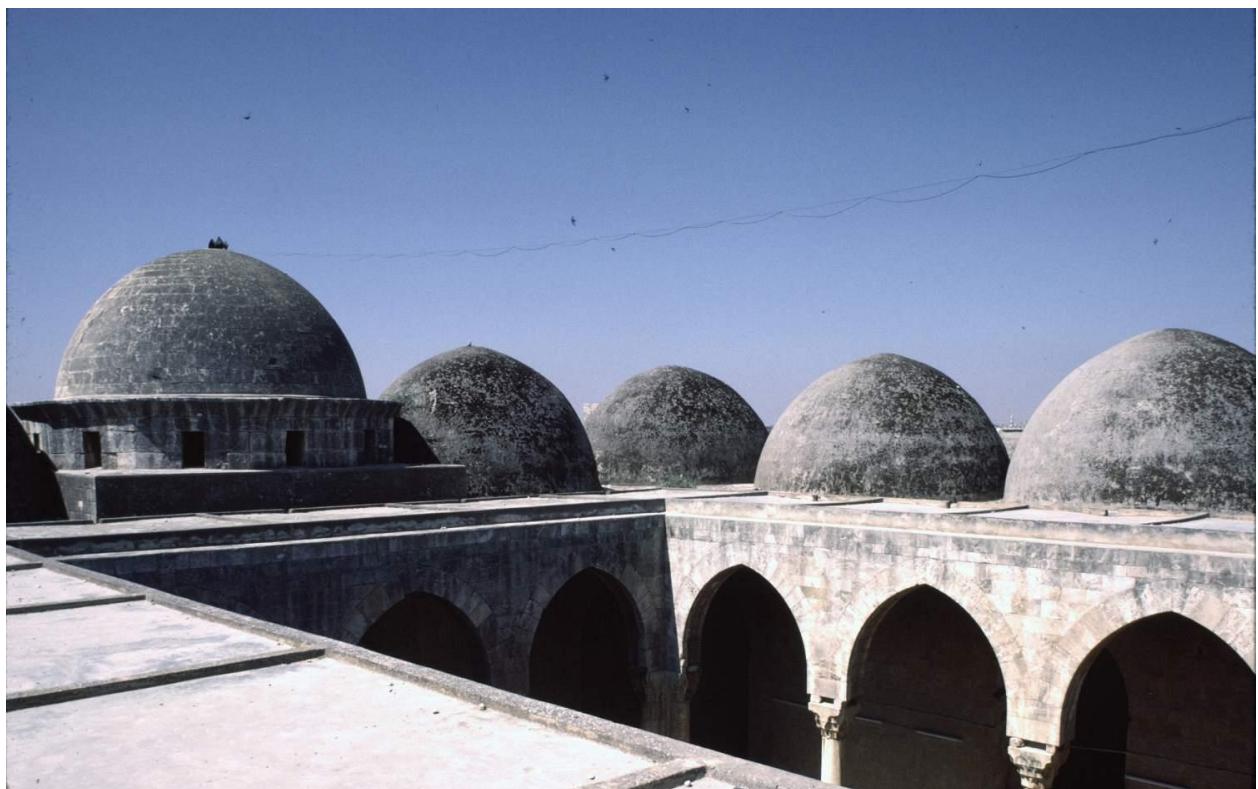
Source: [https://www.panoramio.com/user/4238861?photo\\_page=8](https://www.panoramio.com/user/4238861?photo_page=8)

**Figure 3.1.37:** top view of madrasa domes, Aleppo.



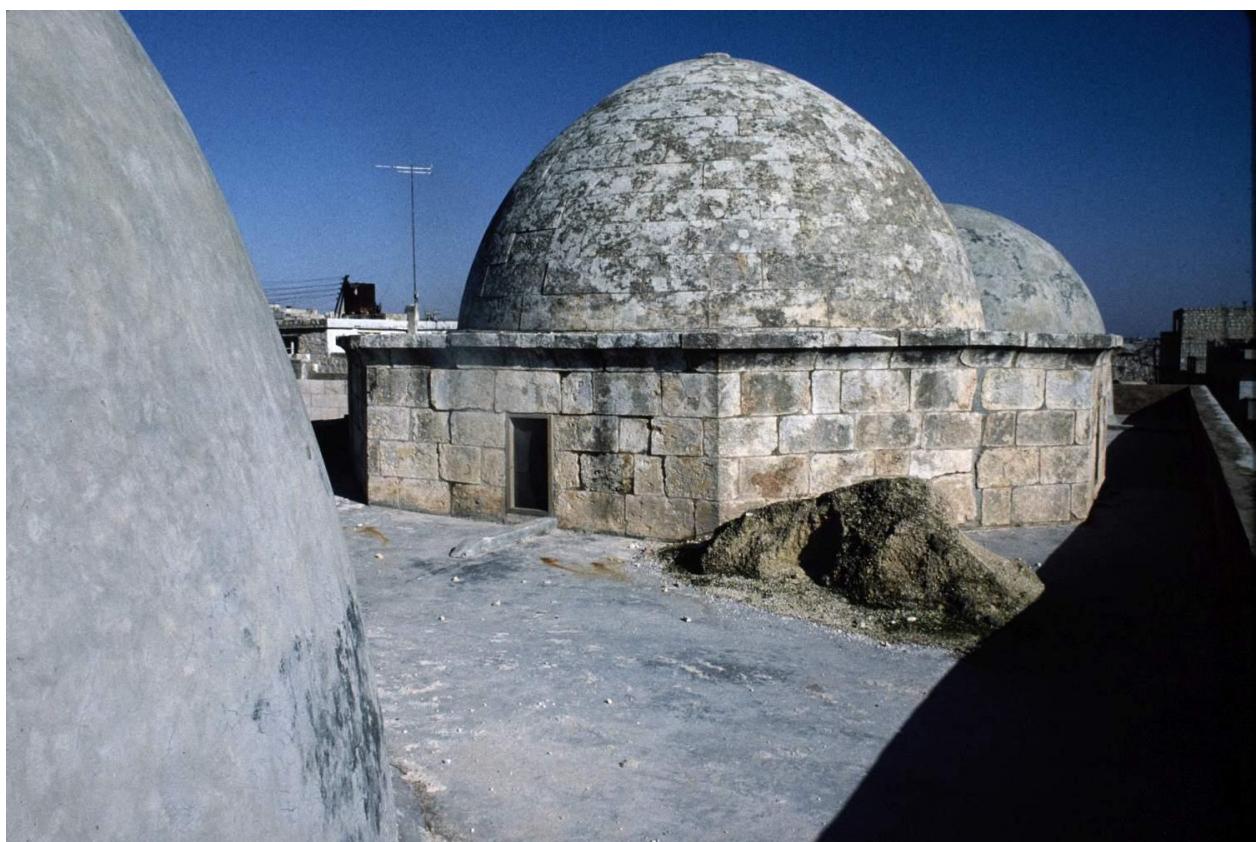
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 191 Aleppo . View, from east

**Figure 3.1.38:** view of domes of madrasa from roof. Aleppo 1987



*Source: Sanctuary 20th Archnet. <https://archnet.org/print/preview/mediacontents=111933&views=i>*

**Figure 3.1.39:** view of the centre dome of prayer hall of madrasa from roof. Aleppo 1990



*Source: Sanctuary 20th Archnet. <https://archnet.org/print/preview/mediacontents=111928&views=i>*

**Figure 3.1.40:** view of the drum and windows of centre dome of prayer hall of madrasa. Aleppo



Source: Hammad.(2004),*Architectures Ayyoubides, le style austere à Alep*.

**Figure 3.1.41:** view of the Colum of mihrab of prayer hall of madrasa. Al Firdows, Aleppo.1983



Source: *Sanctuary 20th Archnet*.<https://archnet.org/print/preview/mediacontents=111897&views=i>

### 3.2 CATALOG OF AL KAMALIYYA ADIMIYYA (TURUNTA'IYYA) MADRASA

#### Madrasa Al Kamaliyya Al 'Adimiyya (Turunta'iyya)

<b>Location</b>	The madrasa is located in the Mohamed Bek district, about 500 meters east of Bab Al Nayrab (Al Jaseer, L, 2000, p. 222) (Tabba, 1997, p. 137) (Osman, 2009, p. 244) (Figure 3.2.2) (Figure 3.2.3).
<b>Establishment year</b>	Ayyubid Period; 1251 (Osman, 2009, p. 244) (Al Jaseer, 2000, p.222).
<b>Founder</b>	Al Sahibi Kamal Al Din Umar; a famous historian from Aleppo (Ibn al'Adim) (Tabba, 1997, p. 137).
<b>Previous Restoration</b>	In the middle of 20 <sup>th</sup> century the ministry of antiquities restored the madrasa extensively (the reference did not mention the parts of the madrasa that were restored) (Talas, M, 1956, p.108).

#### The Features of Al 'Adimiyya

Al Adimiyya madrasa is considered a complex because it includes a madrasa, mausoleums and a house (it was most likely a zawiya). Al Adimiyya is the first madrasa which used the Aplaq system on the portal of its main entrance (Figure 3.2.5) (Al Jaseer, L, 2000, p. 232). Al Adimiyya has a symmetrical rectangular plan with straight regular walls. The courtyard is located in the center of the madrasa and has a rectangular plan, while the prayer hall is located on the southern side of the madrasa, open to the courtyard and facing a large iwan. It has a rectangular plane scheme divided into three parts. The mausoleums are located at the southeastern and southwestern ends of the building, on either side of the prayer hall. The madrasa is distinguished with a southern iwan, which is considered the first iwan to front the prayer hall of a madrasa. The madrasa entrance is located on the western side so that the main iwan is facing the prayer hall. In addition, the madrasa is distinguished with a large number of cells (accommodation for students) which are distributed over two floors.

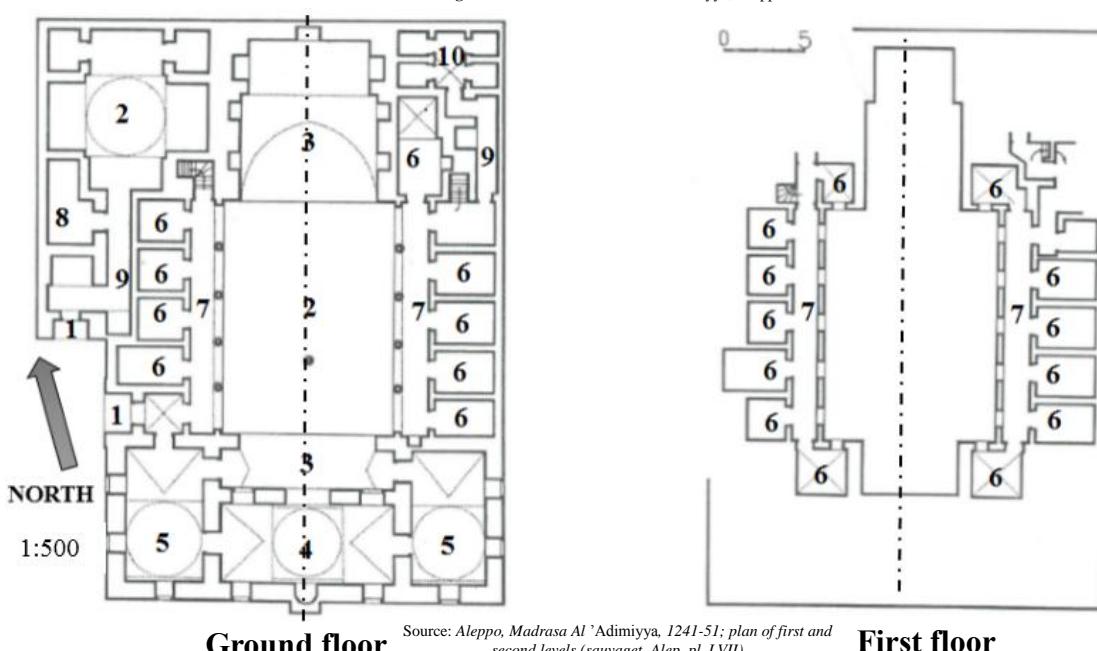
#### Plan of the Madrasa

Madrasa Al 'Adimiyya is considered one of the most important madrasas in Aleppo, due to its complexity and large size. The madrasa has a symmetrical rectangular plan. The current plan of the madrasa consists of two floors and it has two entrances with muqarnas portals. The entrances are neighbouring each other (Figure 3.2.1).

The main entrance is located on the western facade and it opens onto the main courtyard of the madrasa through a corridor. Whereas the other entrance on the north wall of the facade has a smaller portal. It leads to a residential unit and opens to a small domed courtyard by a long corridor. The main courtyard has a rectangular plan, it is surrounded by cells, which opens to the arcades along the west and east wings of the courtyard and two iwans on the north and south sides. The southern iwan leads to a domed prayer hall with mihrab, on each sides of the prayer hall there are two domed rooms (mausoleums) opened to a prayer hall accessed through doors. However, the main northern iwan is closed by walls (Figure 3.2.1). On the left side of the main iwan there is a corridor which opens onto the eastern arcade and it lead to four restrooms, an ablution area, and stairs which are located on the northeastern corner of the madrasa. The stairs lead to the first floor of the madrasa. The first floor has fourteen cells located on the western and eastern wings. Each wing has an arcade leading to seven cells. In addition, each wing has stairs leading to the ground floor of the madrasa.

1. Entrance 2. Courtyard 3. Iwan. 4. Prayer Hall 5. Mausoleums 6. Cells 7. Arcade 8. Kitchen 9. Passage 10. Restroom (Figure 3.2.1).

Figure 3.2.1: Plan of madrasa Al 'Adimiyya; Aleppo



Source: Aleppo, Madrasa Al 'Adimiyya, 1241-51; plan of first and second levels (sauvaget, Alep, pl. LVII)

First floor

Figure 3.2.2: Location of Al Adimiyya madrasa in relation to the old city of Aleppo.

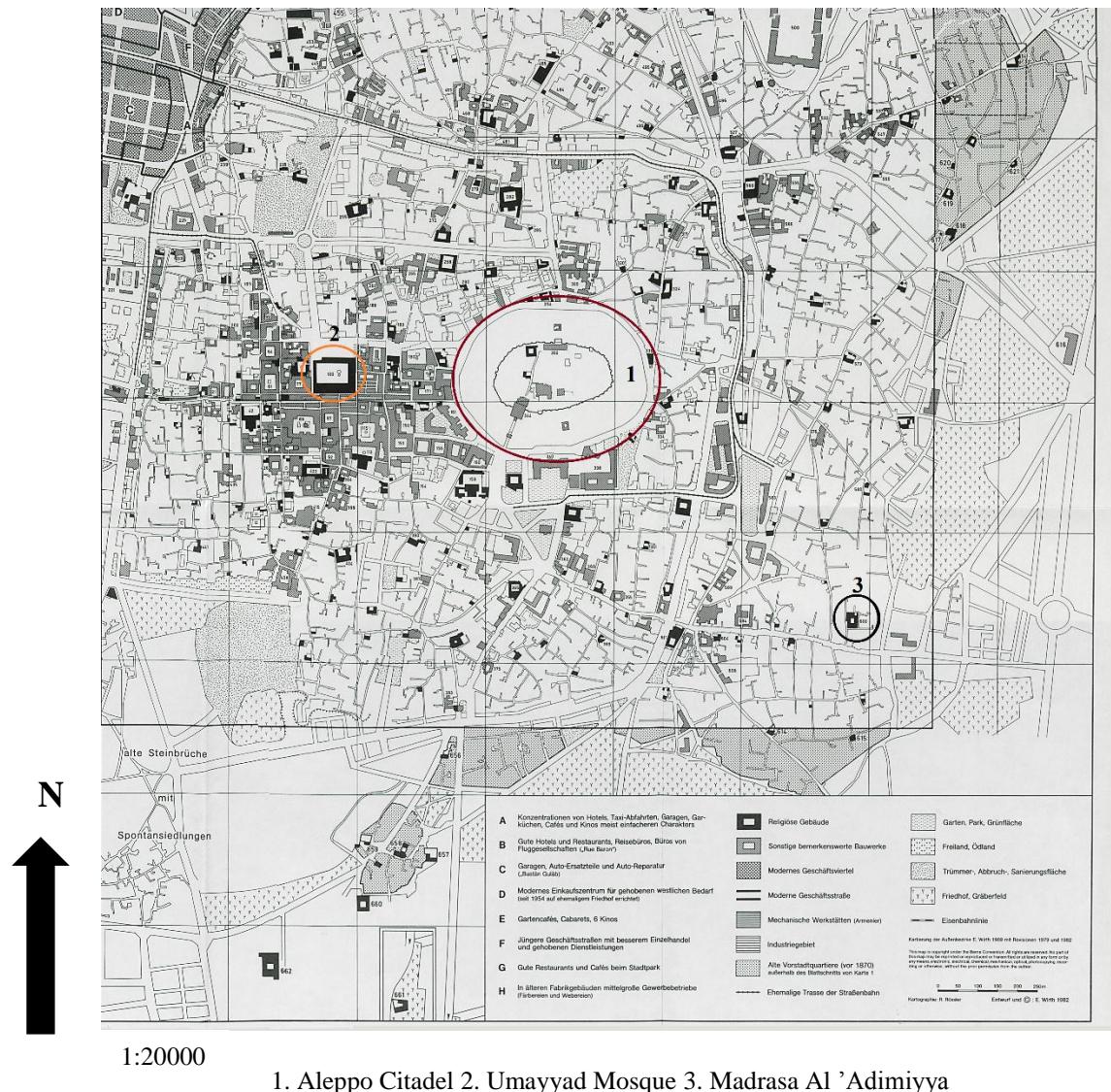
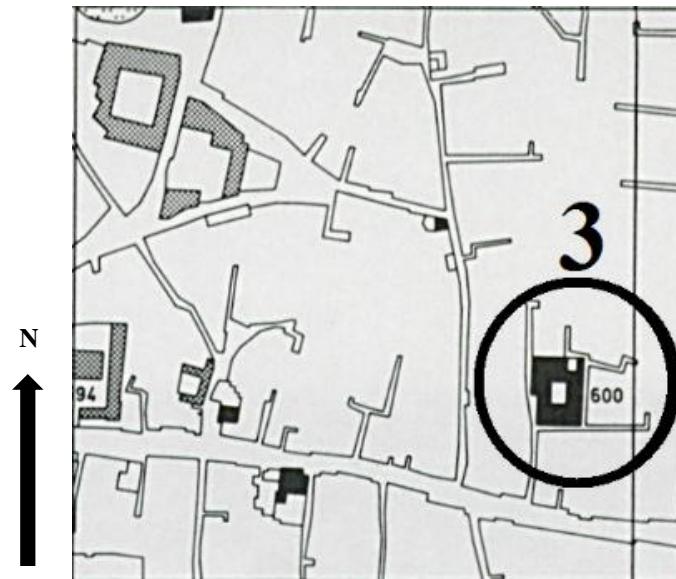


Figure 3.2.3: Site plan of Al Adimiyya madrasa, to neighbourhood fabric Aleppo



1:2000 Source: Gaube. (1984). Aleppo. Gaube-Wirth\_Kartenlegenden (Adimiyya600)

## Madrasa Al'Adimiyya

### Plan Elements

<b>Entrance</b>	The madrasa distinguished with two muqarnas entrances (Figure 3.2.6). The main entrance is located on the west end of the madrasa. It consists of front portal muqarnas, which take the form of a shallow iwan and it is roofed with half pointed dome carrying muqarnas (Figure 3.2.4). This portal opens onto the main courtyard of the madrasa by a passage. The passage is open to the mausoleum by a small window and it has a cross vault roof. The other entrance is located on the north wall of the western exterior façade, close to the main one. It consists of front portal muqarnas, which take a shallow iwan form, and it is roofed with half pointed dome (Figure 3.2.5). The second entrance leads to the residential unit, which opens onto a small domed courtyard by a long 'L' shaped corridor. Both of entrances have three steps leading to the portals.
<b>Courtyard</b>	The madrasa has two courtyards, the main courtyard and small courtyard. The small courtyard is located on the northwestern corner of the madrasa. The large main courtyard has a rectangular plan (10.80m x 14.50m), and it is surrounded by cells, which open to the arcades resting on four granitic columns along the west and east wings of the courtyard. (Tabba, 1997, p.137) (Tabba,Y, Moaz, 2015, A, VII.1.G). There are two iwans located on the north and south sides (Figure 3.2.7). The northern iwan is enclosed by walls whereas the southern iwan leads to the domed prayer hall. The floor of the courtyard is tiled with yellow stones. The small domed courtyard is located on the northwestern corner of madrasa and it has a square plan; cells and corridors surround this courtyard. Nowadays this portion is used as the residence of professors (Figure 3.2.1) (Tabba, 1997, p.138).
<b>Prayer Hall</b>	The prayer hall is located on the south side of the madrasa, it has a rectangular plan. It opens onto the courtyard by an iwan that is located in front of the prayer hall. The prayer hall opens onto the iwan that opens onto the courtyard by one door and three windows. Two of those windows are located on each side of the door whereas the third window is located above the door (Figure 3.2.8). The prayer hall is divided by two pointed arches into three parts. The center part is surrounded by four arches and it has simple mihrab. It is roofed with a pointed dome based on an octagonal drum; it has eight windows whereas the other two parts of the hall is roofed with barrel vaults. However, each part has window open onto the street. In addition, the mausoleums, which are located on each side of prayer hall, open onto the prayer hall by doors (Figure 3.2.8).
<b>Iwan</b>	The madrasa has two iwans. The main iwan is located on north side of the madrasa whereas the other iwan is located on the south of courtyard leading to the prayer hall. The main iwan is on the same axis with the iwan of which fronts the prayer hall and along the same axis is the courtyard as well. The main iwan is deep (9.80 m depth x 8 wide). It has seven wall niches. Three niches are located in each east and west wall whereas there is just one located in north wall. Those niches were probably used as storage for books. This iwan was roofed with two pointed barrel vaults, the front vault is bigger and higher than the other one. Nowadays this iwan enclosed completely by walls, it has ten windows and one door and all of them are surrounded by big pointed arch of the iwan (Figure 3.2.16) (Figure 3.2.1). The southern shallow iwan is raised one step from the courtyard and has big pointed arch. This iwan used the same as a corridor, which leads to the domed prayer hall and two mausoleum rooms. It is roofed with a barrel vault and crossed with two smaller barrel vaults which are located above each of the doors on each side of the room (Figure 3.2.9).
<b>Cells</b>	The madrasa has twenty-four cells (accommodation for students), and almost all of them have a rectangular plan and are the same size. The cells exist in two level of the madrasa; ten located on the ground floor and fourteen on the first floor. The cells are located on the western and eastern wings of the courtyard (Figure 3.2.10) (Figure 3.2.1). Each cell on the ground floor opens onto the arcade by a door which has a segmental arch, and above it a small square hole. Whereas the cells that are located on the first floor open onto the arcade by one door. In addition, there are four cells located on the northern and southern corner. Each cell opens onto the courtyard by a small rectangular window (Figure 3.2.8). All cells are roofed with barrel vaults (Al Jaseer, L, 2000, p. 227).
<b>Minaret</b>	The minaret was added during the Ottoman period (1876) (Osman, 2009, p. 245). The minaret is located close to the northeastern corner of the madrasa. It has an octagonal shape made of stone and it rests on an octagonal base. It has an octagonal balcony with a wooden fence, and it rests on eight wooden columns. The top of minaret is roofed with a semi-spherical dome (Figure 3.2.9) (Figure 3.2.12).

## Madrasa Al'Adimiyya

### Plan Elements

<b>Mausoleum</b>	<p>The mausoleums are located at the southeastern and southwestern corners of the madrasa on each side of the prayer hall. Each mausoleum has a rectangular plan and it opens into the prayer hall by a door. It also opens onto the iwan, that faces the courtyard by a small door, raised one-step above the level of the courtyard.</p> <p>The western mausoleum includes two graves whereas the eastern mausoleum does not include any graves. Each mausoleum is divided by a pointed arch into two parts. The southern part is roofed with pointed dome based on dodecagon drum carried by pendentives, whereas the northern part (above two graves) roofed with a barrel vault. The western mausoleum has four windows and two of them are on the western wall and open onto a narrow street. One window in the northern wall opens onto the corridor of main entrance and there is one window on the southern wall. There is a segmental arch above each door and window (Figure 3.2.13). The eastern mausoleum has three windows. Two of them are on the eastern wall and open onto the street, the third window is on the southern wall also opens onto the street.</p> <p>There was more than likely a grave in the eastern mausoleum that was later removed. The location of the mausoleums gives the madrasa a balanced design because all of the domes are located on the southern side of the buildings.</p>
<b>Arcades</b>	<p>The madrasa has four arcades; two of them are located on the ground floor on the western and eastern wings of the courtyard, while the other two arcades are located on the first floor above the arcades on the ground floor. Each arcade of the ground floor is raised one-step off of the main courtyard and open to it. Each arcade consists of four columns with muqarnas on the capital and the base of columns have a circle shape. In addition, those columns are made of granite and have a pointed arch above it (Figure 3.2.9) (Figure 3.2.10) (Figure 3.2.11). The arcades on the first floor are similar to the arcades on the ground floor except for the fact that each arcade of the first floor is open to the courtyard by five large holes with a pointed arch above each one of them (Figure 3.2.10). All arcades roofed with a straight roof made of big stone (Al Jaseer, L, 2000, p. 226).</p>

### External Facades

<b>Western Facade</b>	<p>The western exterior facade consists of the main facade of the madrasa. It consists of a large solid wall with two rectangular windows of the western mausoleum. On top of each window, there is a lintel and above it pointed arch. Next to them, the main entrance, which consists of front portal muqarnas, takes a shallow iwan shape and it is roofed with half pointed dome, which carries muqarnas (Figure 3.2.4). In front of portal, there are stairs consisting of three steps leading to a portal. Above the door of the portal their text inscription contains the name of the madrasa and next to it is text attributed to the founder of the madrasa Afif Al Din (d. 1383/792 AH)(Figure 3.2.15). Whereas the real founder of the madrasa is Ibn Al'Adim (Al Jaseer, L, 2000, p. 222). Above the previous inscription's text, there is a panel with a geometric inscription. Next to the portal, there is a rectangular window. Next to the wall includes main which connects orthogonal with the wall includes the other entrance, This entrance consist of front portal muqarnas, which takes a shallow iwan form, that is roofed with a half pointed dome (Figure 3.2.5). This entrance is very similar to the main entrance except it is smaller than the main one and there is a non-text inscription above its door. Next to it, a wall that connect orthogonal to the wall includes small entrance, that wall is consists of a huge solid wall without any details that considered a wall of the eastern part of the facade</p>
<b>Eastern Facade</b>	<p>The eastern facade consists of a large solid wall without any details except for two rectangular windows of the eastern mausoleum (nowadays the ablution room). On top of each window, there is a lintel and above it a pointed arch.</p>
<b>Southern Facade</b>	<p>The southern exterior facade consists of a large solid wall with four regularly spaced rectangular windows. On top of each window there is a lintel and above it a pointed arch. In the center of the wall there is a rectangular extent, which is considered the outer surface of the prayer hall's mihrab. On the top of the façade, there are two domes: the center one is the dome of the prayer hall, which based on octagonal drum and has eight windows. Whereas the other dome is the pointed dome of the western mausoleum, based on a dodecagonal drum (Figure 3.2.14).</p>
<b>Northern Facade</b>	<p>The northern exterior façade consists of a large solid wall without any details.</p>

## Madrasa Al'Adimiyya

### Internal Facades

<b>Northern Facade</b>	The northern interior facade is the façade of the main iwan. It consists of a big pointed arch, which is filled by a big wall. This wall has ten windows and one door. Above each window is a segmented arch. The door rises one step off of the courtyard and is located left of the wall. Next to the door there are four regularly spaced windows, above them are five regularly spaced windows, and above them there is one window located on the top center of the wall. On each side of the big pointed arch, there is a small rectangular window opened onto the courtyard from the first floor (Figure 3.2.16) (Figure 3.2. 9).
<b>Southern Facade</b>	<p>The southern interior facade consists of a big pointed arch. On each side of it there is a small rectangular window which opens onto the courtyard from the first floor. The facade of the prayer hall is located behind this shallow iwan.</p> <p>The facade of the prayer hall, from right to left, consists of one window which has segmental arch, one small door with a segmental arch, next to it a small mihrab, and then one window which has segmental arch.</p> <p>On top of the mihrab and door, there is a window which is smaller than other windows. A big pointed arch that is filled now surrounded by the door, mihrab, and small window (Figure 3.2.8).</p>
<b>Western Facade</b>	The western interior façade consists of the façade of the western arcade, which consist of five pointed arches resting on four granitic columns with muqarnas on the capital, and the base of columns have a circle shape. Behind those arches, the façade of the western cells and corridor of the main entrance, each one opens to the courtyard by a small door with a segmental arch and above them a small square hole. On the top of the eastern facade (first floor level), there are five big holes with a pointed arch. Each hole has short wooden fence open to the main courtyard.
<b>Eastern Facade</b>	The eastern interior facade consists of the façade of eastern arcade, which consist of five pointed arches resting on four granitic columns with muqarnas on the capital and the base of the columns have a circle shape. Behind those arches, the façade of the eastern cells and corridor lead to the restroom. Each one of them are open to the courtyard by a small door with a segmental arch and above them a small square hole. In the top of the eastern facade (first floor level), there are five big holes with a pointed arch. Each hole has short wooden fence open to the main courtyard (Figure 3.2.10).

### Decorative Elements

The madrasa Al Adimiyya is considered as first building to use the Ablaq system in the portal of the madrasa. The Ablaq is used on the main entrance of the madrasa sorrunding the door and it consists of contains seven fluctuating rows of light and dark stone (Figure 3.2.5). The madrasa is distinct with muqarnas in the two entrances of the madrasa and columns of the arcades (Figure 3.2.10) (Figure 3.2.11). In addition, the madrasa is distinct with geometric inscriptions. There are geometric inscriptions above each doors of the entrance to the madrasa and on the pointed arch of the main entrance of the madrasa (Figure 3.2.5) (Figure 3.2.15).

There is an inscription text on a panel above the door of main entrance of the madrasa. It includes the name of the madrasa and next to it there is another text attributed to the founder of the madrasa Afif Al Din (d. 1383/792 AH) (Figure 3.2.4) (Figure 3.2.5) (Figure 3.2.15). Whereas the real founder of the madrasa is Ibn Al'Adim (Al Jaseer, L, 2000, p. 222).

### Structural Elements

<b>Vaults</b>	Barrel vaults were widely used in the madrasa Adimiyya. Barrel vaults are used in the cells of the madrasa, on each sides of the prayer hall, and the northern part of the mausoleums (Figure 3.2.13). The southern iwan of the madrasa is roofed with a pointed barrel vault (Figure 3.2.8), whereas the northern iwan is roofed with a two pointed barrel vault (Figure 3.2.17). Furthermore the corridors located on each side of southern iwan (leading to the mausoleums) are roofed with small barrel vaults. (Figure 3.2.8). Whereas cross vaults are used in the corridor of the main entrance that opens up to the main courtyard.
<b>Domes</b>	The madrasa has two domes. One is located in the center part of the prayer hall. It is roofed with a hemispherical dome based on an octagonal drum and has eight windows (Figure 3.2.14). Whereas the western mausoleum is roofed with a pointed dome based on a dodecagon short drum (Figure 3.2.18). In addition, there is a half-pointed dome located on top of the portals of the entrances to the madrasa (Figure 3.2.6). The madrasa more than likely had four domes in the past; the center dome of the prayer hall, two domes above the mausoleums, and the dome of the northeastern small courtyard of the madrasa.

## Madrasa Al'Adimiyya

### Structural Elements

<b>Arches</b>	The pointed arches were widely used in different areas of the madrasa, such as in the arcades on ground floor of the madrasa (Figure 3.2.10), in big pointed arches on northern and southern iwans (Figure 3.2.17) (Figure 3.2.18), in the mausoleums (Figure 3.2.13) and on the main entrance of the madrasa (Figure 3.2.4). In addition, there are pointed arcades above the windows and door on the interior façade, which opens into courtyard (Figure 3.2.8), on the wall that is filled on the northern iwan (Figure 3.2.16). In the prayer hall there are two pointed arches dividing the room to three parts. The mihrab of this room also has a pointed arch. Segmental arches are used above the doors of the cells (Figure 3.2.10). They are also used above the windows and doors of the mausoleums, which lead to the prayer hall (Figure 3.2.13).
<b>Walls</b>	The walls of the madrasa are big and massive and they are mostly made of ashlar blocks.
<b>Columns</b>	The arcades of the ground floor of the madrasa include eight columns surrounding the main courtyard on two sides (the eastern and western wing) with four columns on each side (Figure 3.2.10). Each column has muqarnas on the capital and the base of the columns have a circle shape. Those columns are made of granite and have a pointed arch above it (Figure 3.2.10) (Figure 3.2.11).
<b>Transition Elements</b>	The transition elements used from the square plan of the middle part of the prayer hall to an octagonal plan of the dome drum were the muqarnas pendentives. In addition, the octagonal drum itself is considered a transition element, as it serves the transfer from the octagonal shape to the circular shape of the base of the dome (Figure 3.2.18). The transition elements used from the square plan of the western mausoleums to a dodecagonal plan of the dome drum were short triangular pendentives. Furthermore, the dodecagonal drum itself is considered a transition element, as it serves the transfer from the dodecagonal shape to the circular shape of the base of the dome.

**Figure 3.2.4:** The main entrance of madrasa Al-'Adimiyya, Aleppo 1990



Source: Sanctuary 20th Archnet. <https://archnet.org/print/preview/mediacontents=111843&views=i>

**Figure 3.2.5:** The smaller entrance of madrasa Al-'Adimiyya, Aleppo 1991



Source: *Sanctuary* 20th Archnet.<https://archnet.org/print/preview/mediacontents=87207&views=i>

**Figure 3.2.6:** The entrances of madrasa Al 'Adimiyya, Aleppo 1986



Source: *Sanctuary* 20th Archnet. <https://archnet.org/print/preview/mediacontents=111845&views=i>

**Figure 3.2.7:** The main courtyard of madrasa Al-'Adimiyya, Aleppo 1986



Source: *Sanctuary 20th Archnet* <https://archnet.org/print/preview/mediacontents=104269&views=i>.

**Figure 3.2.8:** The iwan and facade of the prayer hall of madrasa Al-'Adimiyah,



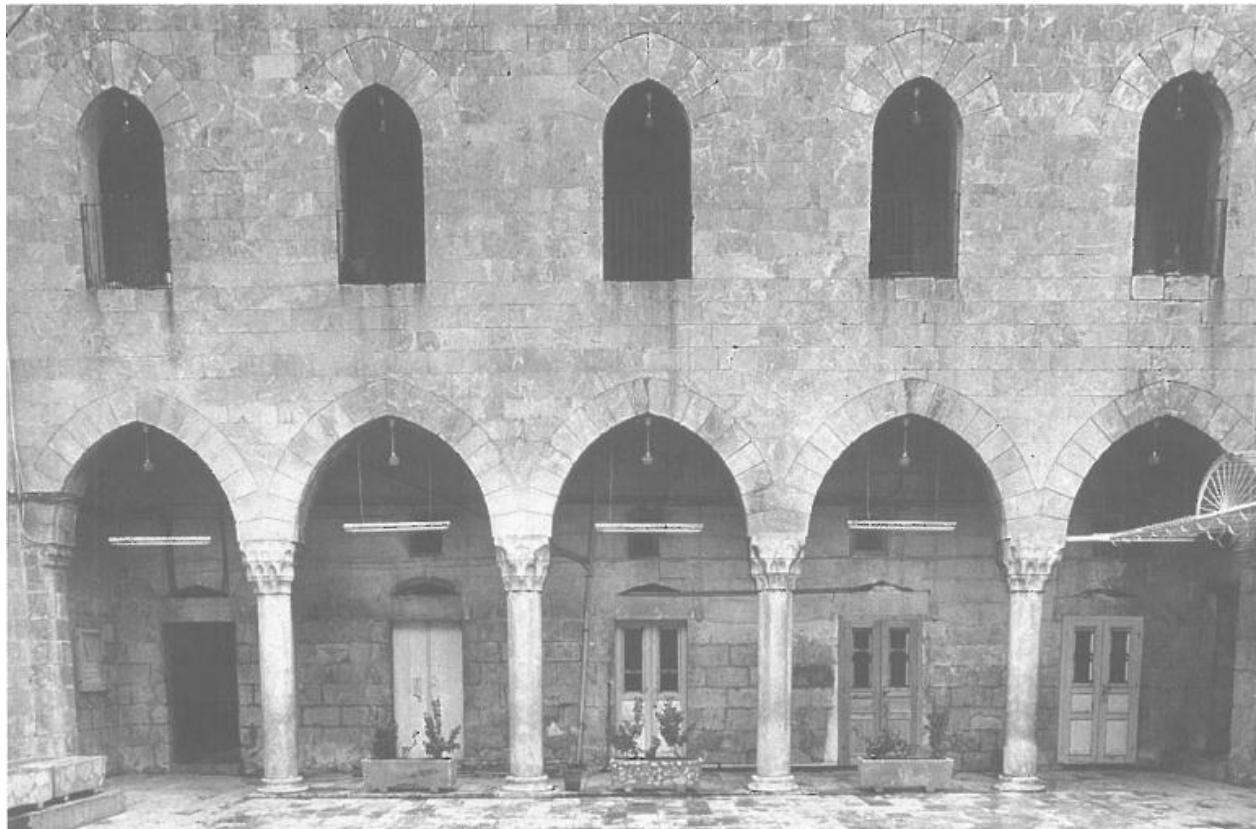
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, Figure 145 Aleppo . Madrasa al -Adimiyya: Southern iwan

**Figure 3.2.9:** The minaret of madrasa Al-'Adimiyya. Aleppo.



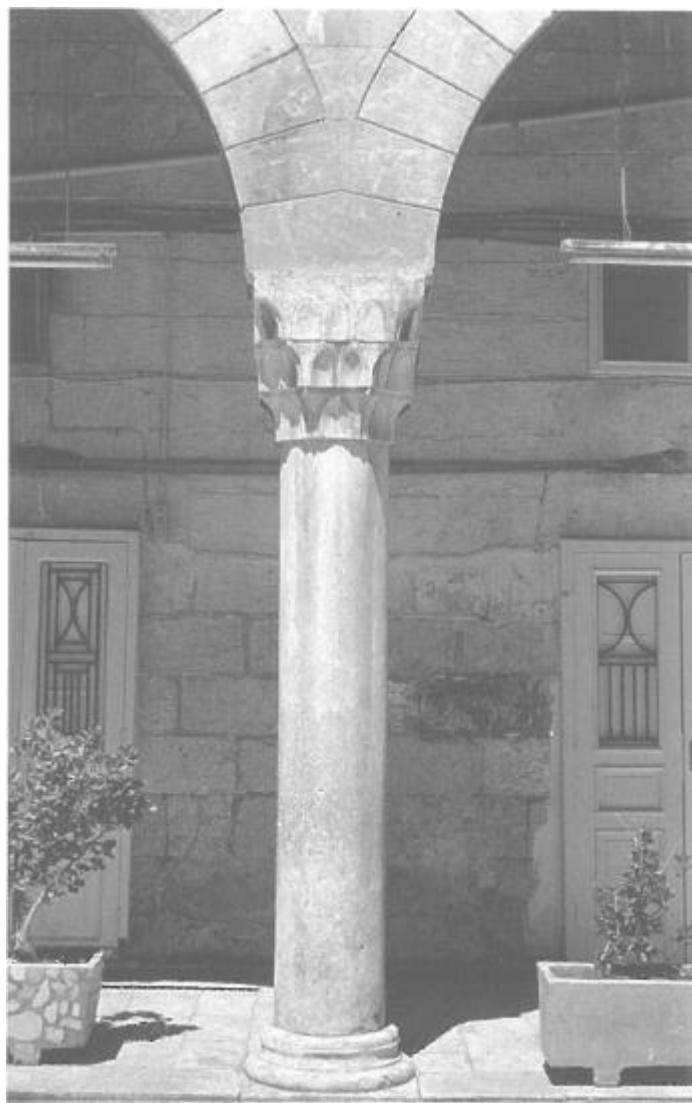
Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, fig 174 aleppo madrasa al adimiyya  
northeastern corner of courtyard and minaret

**Figure 3.2.10:** The eastern interior façade (cells on the eastern wing of the courtyard) of madrasa Al-'Adimiyya.



Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, fig 154 Aleppo madrasa al Adimiyya  
eastern courtyard façade

**Figure 3.2.11:** The column with muqarnas on the capital on the western arcade of madrasa Al-'Adimiyya.



Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, fig 156 Aleppo madrasa al Adimiyya  
column in western portico

**Figure 3.2.12:** The minaret of madrasa Al-'Adimiyya, Aleppo



Source : [http://www.quran-institute.com/I\\_2.htm](http://www.quran-institute.com/I_2.htm)

**Figure 3.2.13:** View of the eastern mausoleum of madrasa Al-'Adimiyya, Aleppo.



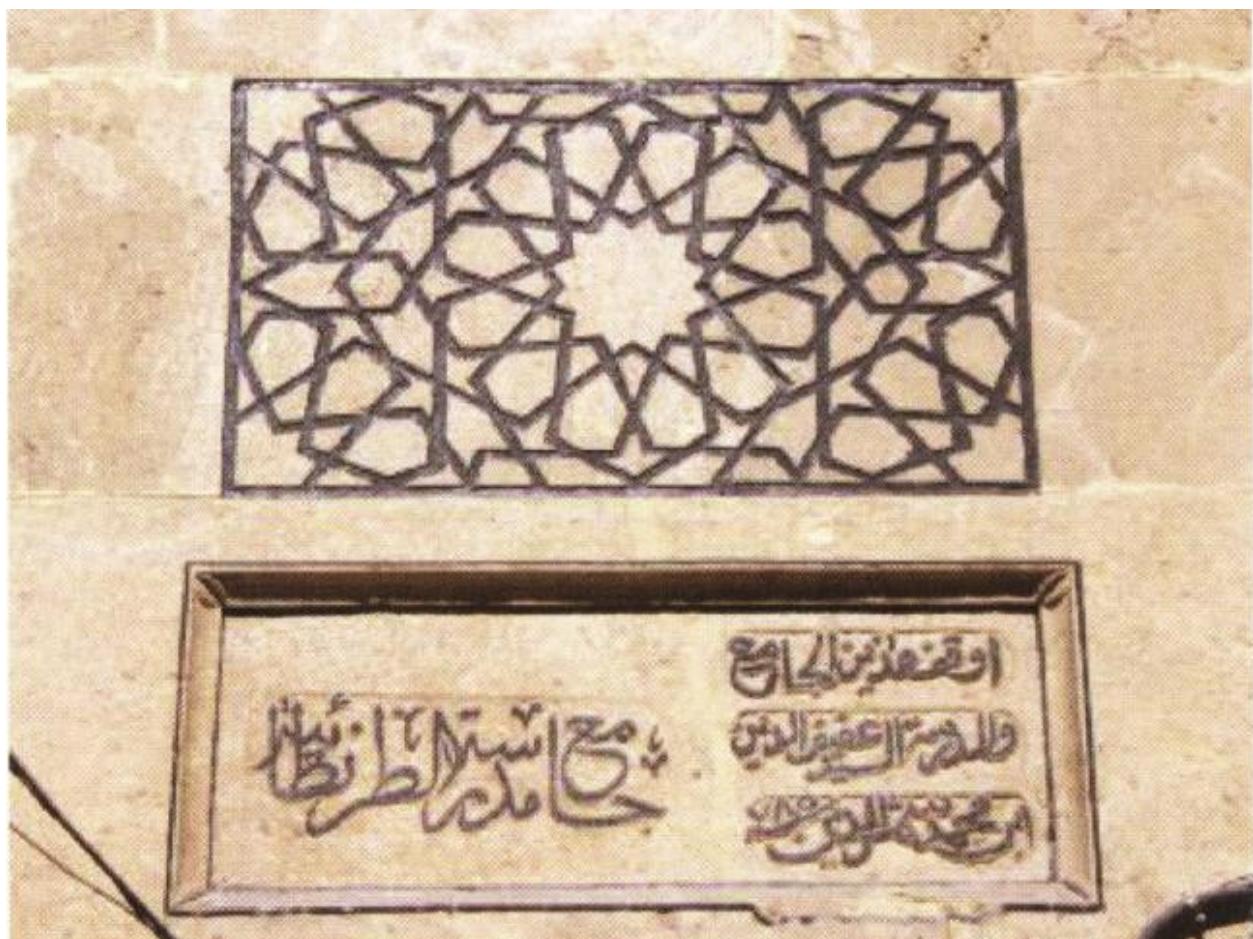
Source : [http://www.quran-institute.com/3\\_3.htm](http://www.quran-institute.com/3_3.htm)

**Figure 3.2.14:** View of the southern exterior facade of madrasa Al-'Adimiyya, Aleppo. 1986



Source: *Sanctuary* 20th Archnet. <https://archnet.org/print/preview/mediacontents=104265&views=i..>

Figure 3.2.15: View of the southern exterior facade of madrasa Al-'Adimiyya, Aleppo. 1986



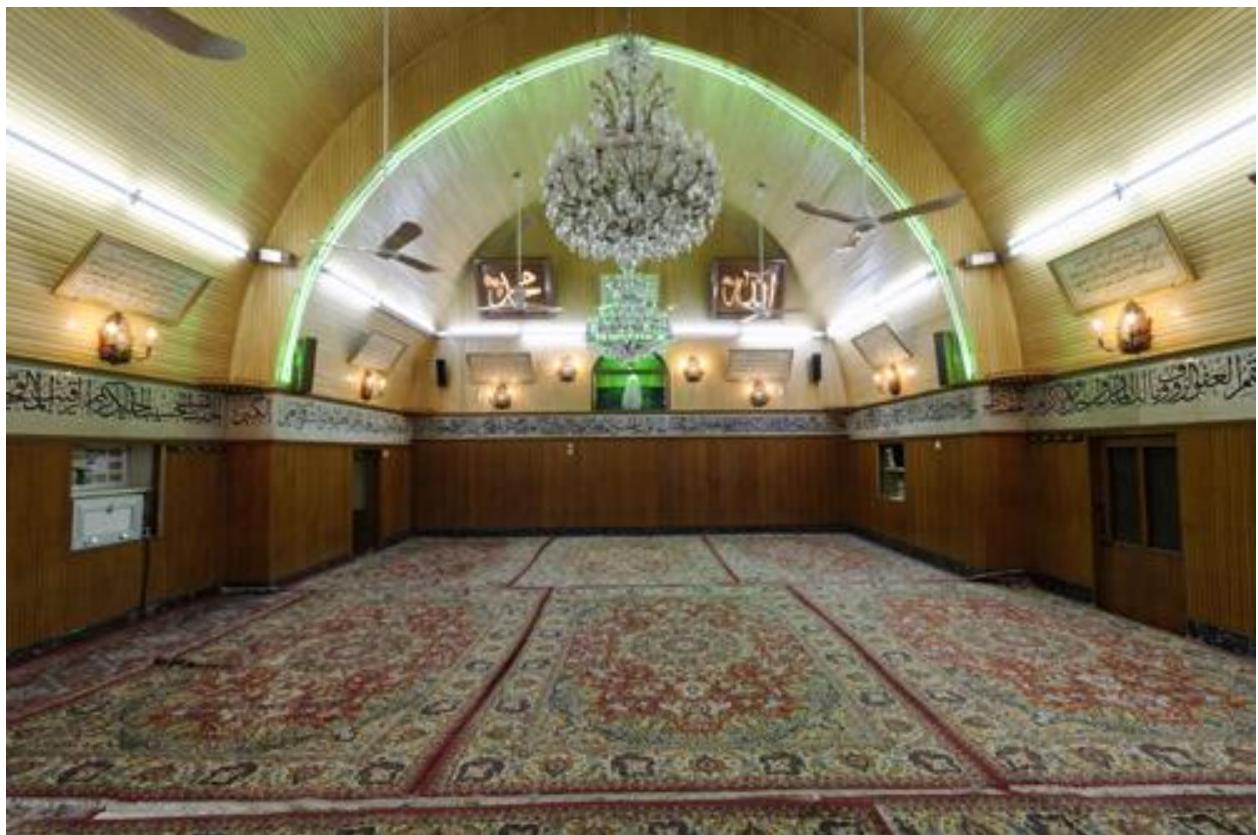
Source: Sanctuary 20th Archnet. Southern exterior façade 1986.

**Figure 3.2.16:** View of the western and northern interior facade of madrasa Al-'Adimiyya, Aleppo. 1986



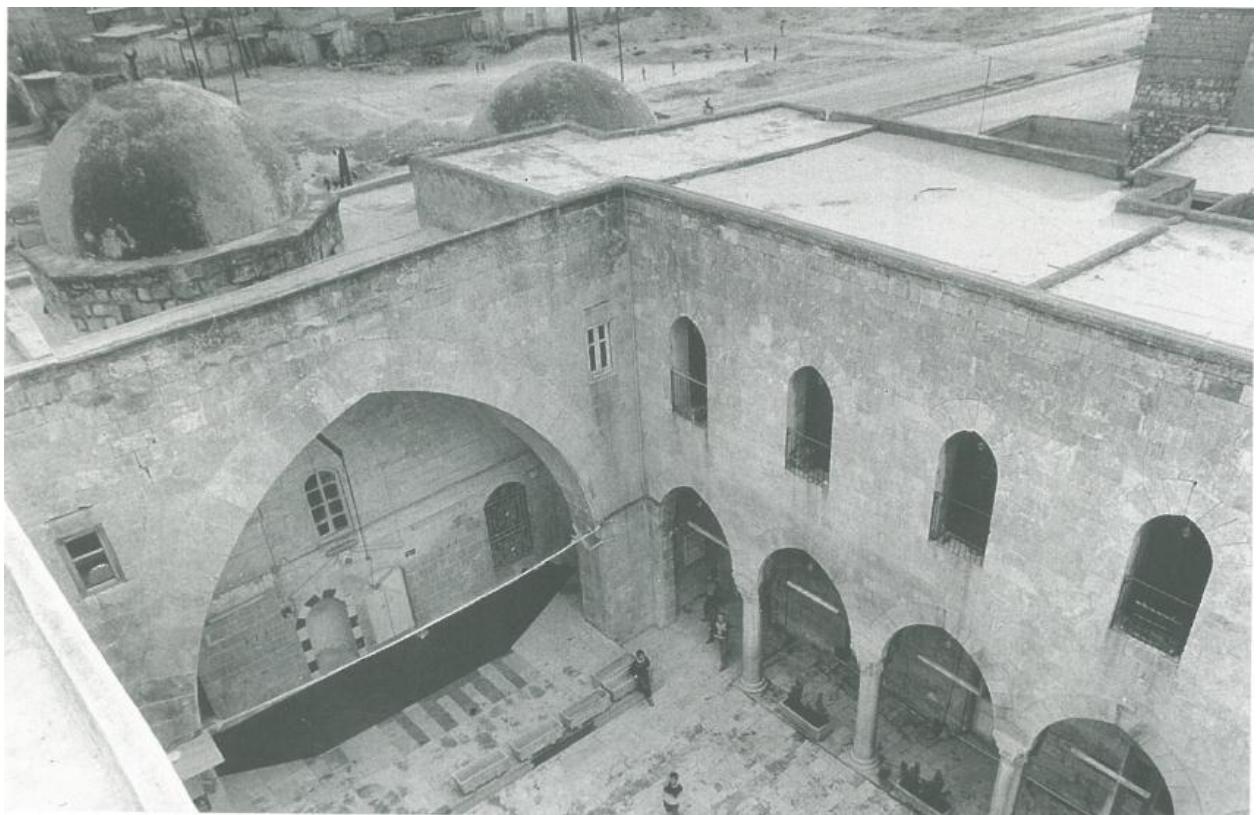
Source: *Sanctuary* 20th Archnet. <https://archnet.org/print/preview/mediacontents=104261&views=i>

**Figure 3.2.17:** View of the interior of the northern iwan of the madrasa Al-'Adimiyya, Aleppo.



Source : [http://www.quran-institute.com/3\\_3.htm](http://www.quran-institute.com/3_3.htm)

**Figure 3.2.18:** View of the southeastern corner of madrasa Al-'Adimiyya, Aleppo.



Source: Tabba.(1997).*Constructions of Power and Piety in Medieval Aleppo*, fig 118 Aleppo ,al madrasa al ,Adimiyya::courtyard from northeast.

### 3.3 CATALOG OF AL KAMILIYYA MADRASA

#### Madrasa Al Kamiliyya

<b>Location</b>	The madrasa is located in Maqamat district, about 300 meters south of Bab Al Maqam (Figure 3.3.1) (Figure 3.3.2) (Al Jaseer, L, 2000, p. 202) (Tabbaa, Y, 1997, p. 136) (Herzfeld, E, 1954, p. 305).
<b>Establish year</b>	Ayyubid period between 1230_1237 (Herzfeld, E, 1954, p. 306) (Tabbaa, Y, 1997, p. 136).
<b>Founder</b>	Fatima Khatun, the daughter of Ayyubid Sultan Al Malik Al Kamil, and wife of Al Aziz Muhammad governor of Aleppo (Herzfeld, E, 1954, p. 306) (Tabbaa, Y, 1997, p. 136) (Al-Ghazzi, K, 1991, p. 114).
<b>Previous Restoration Processes</b>	The madrasa was widely restored in 1995 by the Ministry of Antiquities and Awaqaf Directorate. The restoration included rebuilding different parts of madrasa, which demolished in the past (Al Jaseer, L, 2000, p. 202).probably the eastern part of madrasa (eastern hall and entrance) was totally reconstructed, because according to the plan Herzfeld drew it was in ruins (Figure 3.3.3).

#### The Features of Al Kamiliyya

The madrasa Al Kamiliyya has a symmetrical square plan with regular walls in addition the courtyard is located on the center of madrasa and has a square plan scheme, the prayer hall is located on the southern side of madrasa opens onto the courtyard and faces a large Iwan. It has a rectangular plan divided into three parts by two big-pointed.

Mausoleums located on the southeastern part and southwestern ends of the building, on either side of the prayer hall. Those mausoleums are widely integrated with the prayer hall as one space. In addition, the location of mausoleums at the southern side of madrasa creates a balanced design in which all domes are located on the southern end of the madrasa.

The madrasa entrance is located in northeaster corner of madrasa as many other madrasas that belong to Ayyubid period.

Regarding the rooms of the madrasa located on each side of Iwan (two rooms) they are probably not cells because usually cells has smaller size and there are usually more than four cells in each madrasa (Figure 3.3.2).

#### Plan of Madrasa

The madrasa Al Kamiliyya has a symmetrical square plan scheme with regular walls. The courtyard is located on the center of madrasa and has a square plan scheme; the madrasa is symmetrical around the axis, which cross in the centre of the Iwan and prayer hall (Figure 3.3.3). The plan consists of two entrances; one of them is the main entrance that is located on the northeastern corner of madrasa. The main entrance leads to a passage leading to an open square courtyard, which is surrounded by an Iwan on the northern side of the courtyard, two rooms that are located on each side of iwan, and two halls located on eastern and western sides of a courtyard. The large prayer hall is located on the southern side of the courtyard and mausoleums located on each side of the prayer hall. In addition, there is a small entrance located on the eastern side of madrasa, which leads to a passage, opens onto the Courtyard (Figure 3.3.4). 1. Prayer hall 2. Mausoleums 3. Courtyard 4.Iwan 5.halls 6. Entrance 7.Rooms (Figure 3.3.2)

Figure 3.3.4: current plan of madrasa Al Kamiliyya Aleppo.

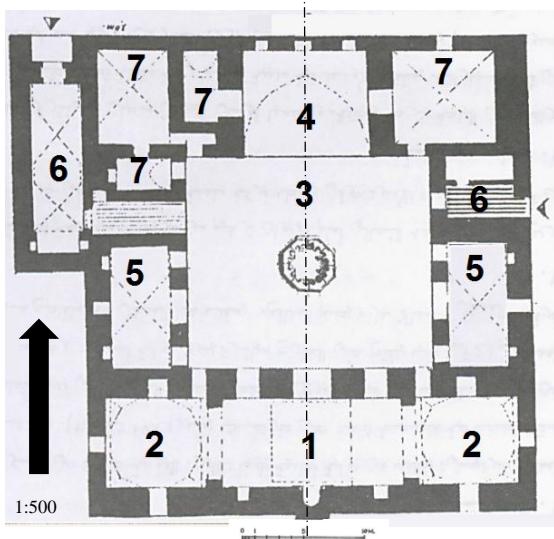
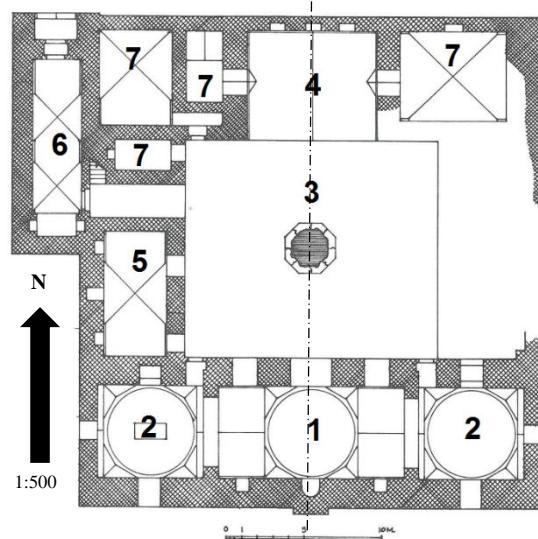


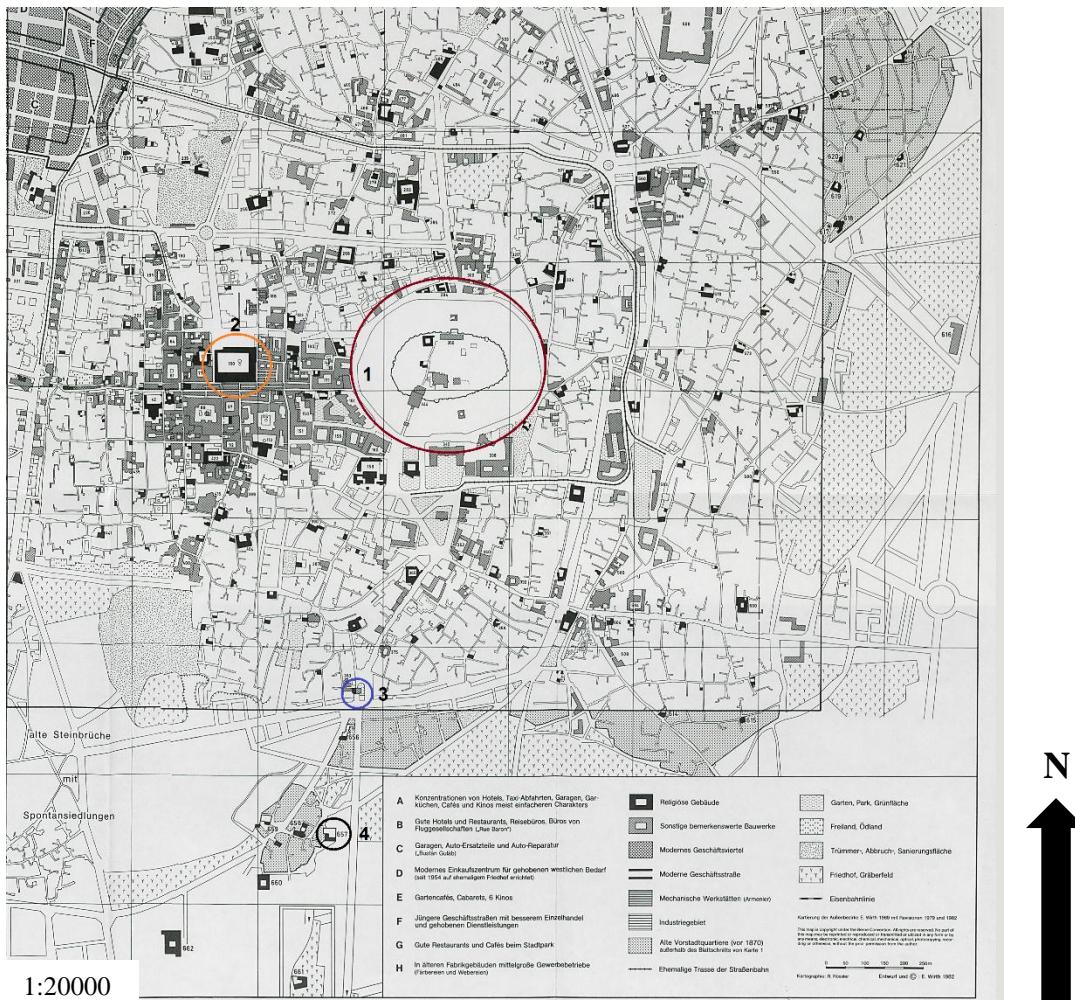
Figure 3.3.3: plan of madrasa Al Kamiliyya, Aleppo



Source: Jasser. (2000).Historical Madrasas of Aleppo, Dar Al-Radwan, Aleppo. Plan of madrasa Al Kamiliyya Aleppo Figure 42 Aleppo .madrasa Al Kamiliyya plan 203.

Source: Herzfeld. (1954).Madrasa Al Kamiliyya, 1230-37; plan (redrawn after Herzfeld, MCIA-Alep, 3, pl.cxib.

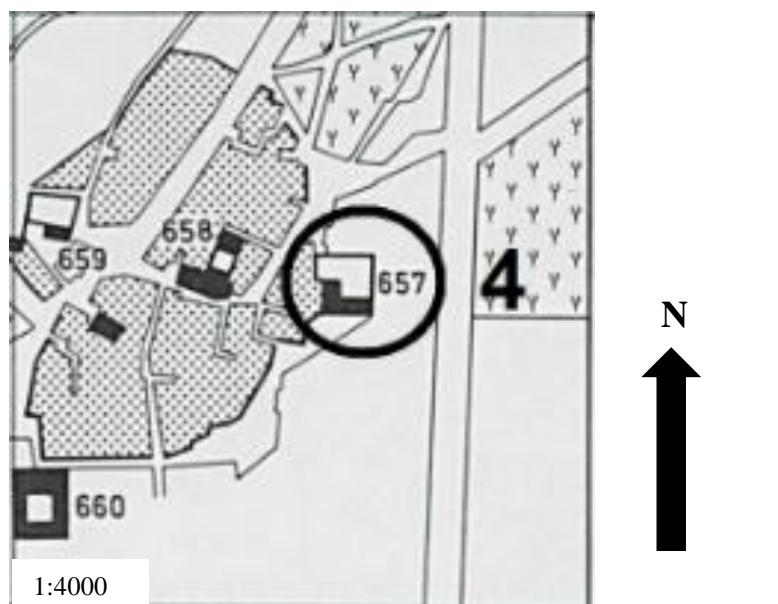
**Figure 3.3.1:** location of the Al Kamiliyya madrasa to the old city of Aleppo.



1. Aleppo Citadel 2. Umayyad Mosque 3. Maqam Gate 4. Madrasa Al- Kamiliyya

Source: Gaube-Wirth\_Kartenlegenden (kamailyya657)

**Figure 3.3.2:** location of the Al Kamiliyya madrasa to neighbourhood fabric.



Source: Gaube-Wirth\_Kartenlegenden (kamailyya657)

## Madrasa Al Kamiliyya

### Plan Elements

<b>Entrance</b>	The madrasa has two entrances; the main entrance is located on the northeast corner of the madrasa, it consists of a muqarnas-vaulted portal with an iwan shape with a wooden door (Figure 3.3.5). The portal opens onto a passage that has an L shaped plan. The passage continues south down the western side of madrasa (Figure 3.3.6) turning at a right angle to the east and opening onto the courtyard. The passage is roofed with two cross vaults (Figure 3.3.6), whereas the part, which opens onto courtyard, is roofed with barrel vault. The other entrance is located on the eastern side of the madrasa (new). It consists of a door opening to a passage (which was a part of room) leading to the courtyard of the madrasa. The passage is roofed with a cross vault. (Al Jaseer, L, 2000, p. 204).
<b>Courtyard</b>	The courtyard has a square plan (Figure 3.3.4). The courtyard includes an octagonal basin at its center and its paved with Ablaq on the part between the iwan and the basin. On the western side there is a well that is made of stone (Figure 3.3.7). The courtyard is surrounded by a prayer hall and two mausoleums on the south side (Figure 3.3.7), a large iwan and two rooms which open opposite the prayer hall on the northern side , a hall and a passage on the eastern side and a hall and a passage of the main entrance on the western side (Figure 3.3.4). The east side of the courtyard was demolished and reconstructed later. Therefore, there were probably other plan elements in the past (Herzfeld, E, 1954, p. 306) (Tabbaa, Y, 1997, p. 136).
<b>Prayer Hall</b>	The prayer hall is located on the western side of the madrasa, it has a rectangular plan (Figure 3.3.4), the prayer hall opens from the north onto the courtyard with three big pointed arches and is raised one-step above its level (Figure 3.3.7). The prayer hall consists of three parts divided by two big pointed arches based on two pillars; The middle part is the biggest whereas the other two parts are smaller in comparison and have the same size (Figure 3.3.4), those two sides parts open onto the two side mausoleums by two big pointed arches (Figure 3.3.8). The middle part has a square plan, whereas the other two parts have a rectangular plan (Figure 3.3.4). The middle part has a mihrab made of yellowish stone located in the middle of the southern wall of the prayer hall (Figure 3.3.9). The middle part is roofed with a pointed dome based on an octagonal drum (muqarnas cell forms) that has a small window in each side of the four basic sides. The octagonal drum is based on muqarnas squinches, whereas the two side parts are roofed with barrel vaults (Figure 3.3.8).
<b>Iwan</b>	The main iwan is considered a large and deep iwan. It is located on the northern side of the madrasa and it opens opposite to the prayer hall (Figure 3.3.10). The iwan has a square plan and it is raised two-steps above the level of the courtyard. It is fronted with a huge pointed arch opening onto the courtyard. It has three rectangular niches located on the northern wall of the iwan, the middle niche is the biggest, and each niche has a segmental arch. On the western wall of the iwan, there is a big portal with a pointed arch leading to a small rectangular room, whereas on the eastern wall there is another portal with a pointed arch leading to big square room. The iwan is roofed with a barrel pointed vault (Figure 3.3.10).
<b>Rooms</b>	The madrasa has four rooms with different sizes; two rooms are big whereas the two others are small. The big rooms are located on both sides of the big iwan and both of them open onto the courtyard by a small door. The room, which is located on the northeastern corner of the madrasa, has a square plan and has a window located on its northern wall. The room is roofed with a cross vault. The other big room is located on northeastern corner of the madrasa and it has a rectangular plan. This room is roofed with a cross vault. The two small rooms have a smaller size with a rectangular plan; one of them is located to the north of the entrance's passage. This room is roofed with a barrel vault. The other room opens to the iwan from the right wall by a big pointed arch. This room is roofed with cross vault in a part of it (Al Jaseer, L, 2000, p. 205).
<b>Halls</b>	There are two rectangular big halls are located on the eastern and western wings of the courtyard (Figure 3.3.4) (Figure 3.3.11). The hall on the eastern side opens onto the courtyard by three pointed arches, where the middle pointed arch is biggest. The smaller arches have lintels in each of them (Figure 3.3.13). The hall opens onto the street by a big rectangular window. This hall is roofed with a cross vault in the middle part and barrel vaults on the sides (Figure 3.3.11). The hall on the western side opens onto the courtyard by three pointed arches similar to those described earlier. The hall has also a similar roofing design. The eastern hall was later reconstructed (Herzfeld, E, 1954, p. 306) (Al Jaseer, L, 2000, p. 205).

## Madrasa Al Kamiliyya

<b>Mausoleum</b>	<p>The mausoleums are located on the southeastern and southwestern corners of the madrasa on each side of the prayer hall. Each mausoleum opens onto the prayer hall with a big-pointed arch based on two pillars, and opens onto the courtyard with a small rectangular door raised one-step above the level of the courtyard (Figure 3.3.12).</p> <p>The mausoleums have a square plan and are roofed with pointed domes based on pendentives. The western mausoleum has two rectangular windows opening to the outside on the western and southern walls, whereas the eastern mausoleum has two rectangular windows opening to the outside on the eastern and southern walls. The western mausoleum had a graveyard before, whereas the eastern mausoleum has no grave. There was probably a grave in the eastern mausoleum but it was removed later. The location of the mausoleums gives the madrasa a balanced design because all domes are located on the southern side of building.</p>
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### External facades

<b>Northern facade</b>	<p>The northern exterior façade is distinguished with a beautiful portal that is the main entrance of madrasa. The facade consists -from right to left- of a frontal muqarnas-vaulted portal and a huge solid wall next to it (Figure 3.3.4).</p> <p>The portal includes a wooden door, above which is lentil with a rectangular blank inscription panel. The muqarnas vaults that consist of three rows of Muqarnas located above the inscription. Above the Muqarnas, there is a half pointed lobed dome (Figure 3.3.14). The muqarnas rows and the half-pointed dome are fronted with a pointed arch enclosing the profile of the muqarnas (lambrequin arch). All the described elements are fronted with a big pointed arch, which has geometrical inscriptions on its internal surfaces (Figure 3.3.5). Nowadays, only the main portal is visible because the other parts of the façade are covered with the adjacent buildings.</p>
<b>Southern facade</b>	<p>The southern exterior façade is the exterior southern wall of the prayer hall and the two mausoleums. The facade consists from right to left of a rectangular window of the eastern mausoleum, next to which in the middle of façade there is a slight protrusion in the wall which is the external side of mihrab of the prayer hall and a rectangular window of the western mausoleum (Figure 3.3.4) (Figure 3.3.14).</p> <p>On top of the façade are three-pointed domes. The middle dome is based on an octagonal drum, whereas the two side domes are lower and without drums (Figure 3.3.14).</p>
<b>Eastern façade</b>	<p>The eastern exterior facade is the exterior eastern wall of the eastern mausoleum, eastern hall, eastern entrance and eastern room (Figure 3.3.4). The facade consists from right to left of a solid wall next to it is the eastern entrance, which is a small wooden door with a lintel and a segmental arch above it. The door is raised one step, Next to the door, there is a rectangular window of the eastern hall next to it a rectangular window of the eastern mausoleum and above each window there is a segmental arch. On the top left side of the façade there is a pointed dome that is located on top of the eastern mausoleum (Figure 3.3.16).</p>
<b>Western façade</b>	<p>The western exterior facade is the exterior west walls of the passage of the main entrance, the western hall and the western mausoleum (Figure 3.3.4). The facade consists from right to left of a rectangular window of the western mausoleum next to it is a rectangular window of the western hall then a protrusion of the wall, which extends to the end of the facade</p> <p>On the top left side of the façade, there is a pointed dome located on top of the western mausoleum.</p>

### Internal facades

<b>Northern facade</b>	<p>The northern interior façade consists of the Iwan that is fronted with a big pointed arch; the iwan is raised two steps above the level of the courtyard. The façade shows the interior the north wall of iwan, which includes three rectangular niches with segmental arches above each niche (Figure 3.3.10).</p> <p>On each side of the big frontal arch of the iwan, there is a small door (door of corner room) opening onto the courtyard. The doors are raised one-step above the level of the courtyard; each door has a lintel above it a segmental arch. In addition, there is a circular hole above each door (Figure 3.3.10).</p>
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## Madrasa Al Kamiliyya

<b>Southern facade</b>	<p>The southern interior façade includes the northern wall of the prayer hall, which opens onto the southern sides of the courtyard by three pointed arches (Figure 3.3.17).</p> <p>The southern interior façade consists of three big pointed arches. These arches are raised one-step of the level of the courtyard and lead to the prayer hall. The middle pointed arch is the biggest and shows the interior southern wall of prayer hall with the mihrab.</p> <p>In addition, the façade has two doors (doors of mausoleums) opening onto the courtyard, one of them is located on the western end of façade, whereas the other door located on the eastern end. These doors are raised one-step above the level of the courtyard and each door has a lintel above which a segmental arch (Figure 3.3.17).</p> <p>On top of the façade, there is a big pointed dome (dome of prayer hall) based on an octagonal drum (Figure 3.3.17).</p>
<b>Western facade</b>	<p>The western interior façade opens onto the western side of the courtyard by three pointed arches of the western hall, the pointed arch of the passage and the door of the small eastern room (Figure 3.3.4). The western interior façade consists from right to left of a small door of the western small room, which is raised one-step above the level of the courtyard (Figure 3.3.18).</p> <p>The door has lintel above, which is a segmental arch next to it, a big pointed arch of the passage, which is also raised one-step above the level of the courtyard. Finally, there are three pointed arches of the western hall that open to the western side of the courtyard. These arches are raised one-step above the level of the courtyard; The middle arch is the biggest (Figure 3.3.18).</p>
<b>Eastern facade</b>	<p>The eastern interior façade opens onto the eastern side of the courtyard by three pointed arches of the eastern hall and the door of the eastern entrance (Figure 3.3.4).</p> <p>The western interior façade consists from right to left of three pointed arches of the eastern hall that open to the eastern side of the courtyard and are raised one-step above the level of the courtyard (the middle pointed arch is the biggest) Next to the arches is the door of the eastern passage of the east entrance. This door has lintel above, which is a segmental arch and is raised one-step above the level of the courtyard (Figure 3.3.13).</p>

### Decorative elements

The madrasa has some decorative elements in specific areas, such as the main portal of the madrasa, the middle part of the prayer hall and the courtyard. The madrasa is distinguished with beautiful muqarnas vaults consisting of three rows of muqarnas (Figure 3.3.5), Muqarnas were also used as decorative elements on the squinches of the central dome of the prayer hall (Figure 3.3.8). The mihrab of the prayer hall includes geometric motifs that take a stars shape on the keystone of the pointed arch of the mihrab. The mihrab is also decorated with sheets of white marble surrounded by strips of black marble (Figure 3.3.9). In the courtyard, the Ablaq technique was used to pave the floor between the iwan and basin (used the black and yellowish marble) and the octagonal basin in the center of courtyard with its cusped inner corners are considered as decorative elements (Figure 3.3.19).

### Structural elements

<b>Vaults</b>	<p>Barrel and cross vaults were widely used in Madrasa Kamiliyya. Barrel vaults are used in the iwan(Figure 3.3.8), two side parts of the prayer hall(Figure 3.3.10), two side's parts of each hall(Figure 3.3.11), part of the passage of entrance, which opens onto the courtyard (Figure 3.3.18) and the small room that is located next to the part of the main entrance, which opens onto the courtyard. Cross vaults are used to roof the middle part of the halls (Figure 3.3.11), the two big rooms, partly the small room next to iwan, the passage of western entrance. The passage of the main entrance, which is located next to the portal is roofed with two cross vaults (Figure 3.3.6) (Al Jaseer, L, 2000, p. 204). In addition, the main entrance has a muqarnas-vaulted portal (Figure 3.3.5).</p>
<b>Domes</b>	<p>The madrasa is roofed with three pointed domes, all of which are located on the southern side of the madrasa (Figure 3.3.20). Two domes are made of brick and are located on top of the eastern and western mausoleums (Figure 3.3.20), These domes are based on pendentives, whereas the dome of central part of the prayer hall is bigger and is based on an octagonal drum , and is made of stone (Figure 3.3.8) (Figure 3.3.20).</p> <p>In addition, there is a half-pointed lobed dome on top of the portal of the main entrance (Figure 3.3.5).</p>

## Madrasa Al Kamiliyya

<b>Arches</b>	The pointed arches were widely used in different areas of the madrasa, such as the frontal portal and the passage of the main entrance (Figure 3.3.5), the prayer hall (Figure 3.3.8) (Figure 3.3.17), the iwan (Figure 3.3.10), the halls (Figure 3.3.13) and the arches between the prayer hall and mausoleum (Figure 3.3.12). Whereas segmented arches were used in all windows opening to the outside (Figure 3.3.11) (Figure 3.3.16), the doors of rooms (Figure, 10), the mausoleums (Figure 3.3.17) and the eastern entrance opening onto the courtyard (Figure, 13). In addition, it used on the niches of the iwan (Figure 3.3.10) The lambrequin arch is used in the main entrance, which takes the shape of muqarnas (Figure 3.3.5).
<b>Walls</b>	The walls of the madrasa are thick. They were built using rectangular ashlar blocks. (Figure 3.3.16).
<b>Transition elements</b>	<p>The transition elements used from the square plan of the middle part of the prayer hall to the octagonal plan of dome drum are the muqarnas squinches (Figure 3.3.8).</p> <p>The octagonal drum itself is considered a transition element, as it serves the transfer from the octagonal shape to the circular shape of the base of the dome (Figure, 20) (Figure, 21). Whereas the transition elements used from square plan of the mausoleums to the circular shape of the base of the dome was the triangular pendentives (Figure 3.3.8).</p>

### **3.3.1 Analysis of Al Kamiliyya Madrasa**

Aleppo has been the target of development efforts in different respects during the rule of Al Aziz Muhammad especially the social and architectural aspects, Al-Aziz rule is considered as extension of his father's Al Zahir Ghazi in terms of religious tolerance by giving nearly equal patronage rights to the Shia and Sunni communities in Aleppo as well as in interest of enhancing the infrastructure of Aleppo city.

The period of al-Aziz Muhammad was short (1229-1236) and he was focused on completing the work started by his father such as the defense structures of Aleppo and the citadel. On the other hand, his period was distinguished with considerable interest in infrastructure beside the war actions (Tabbaa, Y, 1997, p. 34-36).

Al Kamiliyya madrasa founded by Fatima Khatun the daughter of the Ayyubid sultan al-Malik Al-Kamil and the wife of the governor of Aleppo Al-Aziz Muhammad (Herzfeld, E, 1954, p. 306 who officially ruled Aleppo for six years 1229-1236 (Tabbaa, Y, p. 36, 1997).

The Waqfs of madrasa Al Kamiliyya are unknown because most of the historical resources did not mention them. The waqfs were not even mentioned by Ibn al-Shihah or Ibn Shaddâd.

Many madrasas were built during Al-Aziz Muhammad's and Atabek Atabge (The guardian of Al-Aziz Muhammad) period, and many of them were built in the extramural neighborhoods of Aleppo. The curriculum of madrasa in his period included science beside the religion science (Al Jaseer, L, 2000, p. 153-162).

The madrasa does not include any inscriptions. Not even the one referring to the name of the founder of madrasa (Fatima Khatun). However, there is a rectangular blank panel above the portal of main entrance (Figure 3.3.5) (Herzfeld, E, 1954, p. 306), which could be due to the fact that the madrasa was not finished before the death of Al-Aziz Muhammad and therefore the governor did not manage to add the name of himself or his wife on the panel of madrasa.

The madrasa has a square plan. It was built as a freestanding structure; established out of the residential areas, it has a large size and excessive decorations, which means that the authorities probably founded it.

The Kamiliyya madrasa is characterized by its developed plan, that is close to perfection. The madrasa's plan is square and almost symmetrical. The axis of the madrasa places the Iwan against the prayer hall, with the mihrab on the same axis. The entrance to the madrasa is on its corner as in most Ayyubid madrasas. The courtyard has a square shape with an octagonal pool, which is common in Ayyubid madrasas. The location of the mausoleums on southern side of madrasa on both sides of the prayer hall creates a balanced design with all domes located on the southern ends of the madrasa.

The rooms located along to the two sides of the courtyards are either too small or too large to be considered as student cells. Therefore, the cells were most probably located either on the upper floor or in a nearby building. The cells (student accommodation) might have existed on the second floor of the western wings of madrasa. This

assumption is based on the fact that there are stairs in the passage of the main entrance leading to an upper (Figure 3.3.22).

There are graves in one of the mausoleums without the other. The other was probably built to create a balance in the design of the madrasa or it was supposed to be used as a mausoleum, but was not due to an unknown reason.

According to Herzfeld's, the plan of the madrasa (Figure 3.3.3) shows that the eastern side of madrasa was ruined and has (probably) not been reconstructed in accordance with the original situation. There was a room most likely beside the eastern entrance because this entrance is too simple and small for such a madrasa (Figure 3.3.16).

One could say that the current entrance, which is located in the center of western façade, is not the original entrance because in the majority of Ayyubid madrasa there is only one entrance located on the corner of the madrasa. In addition, the western entrance has a door opening to the outside without a portal in front of it.

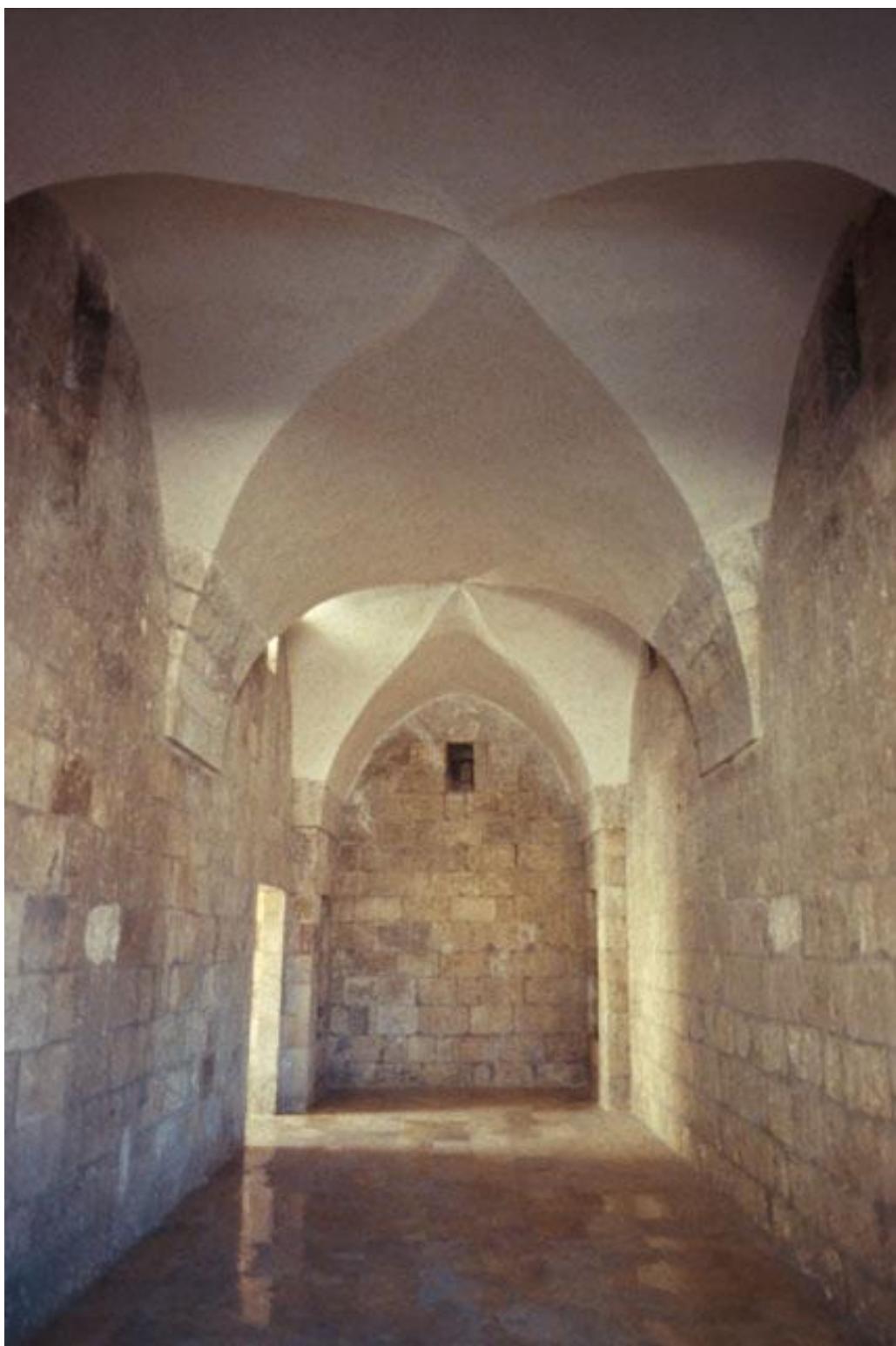
The external facades of the madrasa are simple except for the main entrance façade, which is decorated with muqarnas. We can also conclude from the lack of windows and their relatively small size on the external facades, that the madrasa relies on the courtyard for lighting.

**Figure 3.3.5:** View the portal of the main entrance of the madrasa Al Kamiliyya.Aleppo.2003



Source : <http://www.sonic.net/~tallen/palmtree/ayyarch/images/mkam4.jpg>

**Figure 3.3.6:** View of the passage of the main entrance of the madrasa Al Kamiliyya.Aleppo.1985.



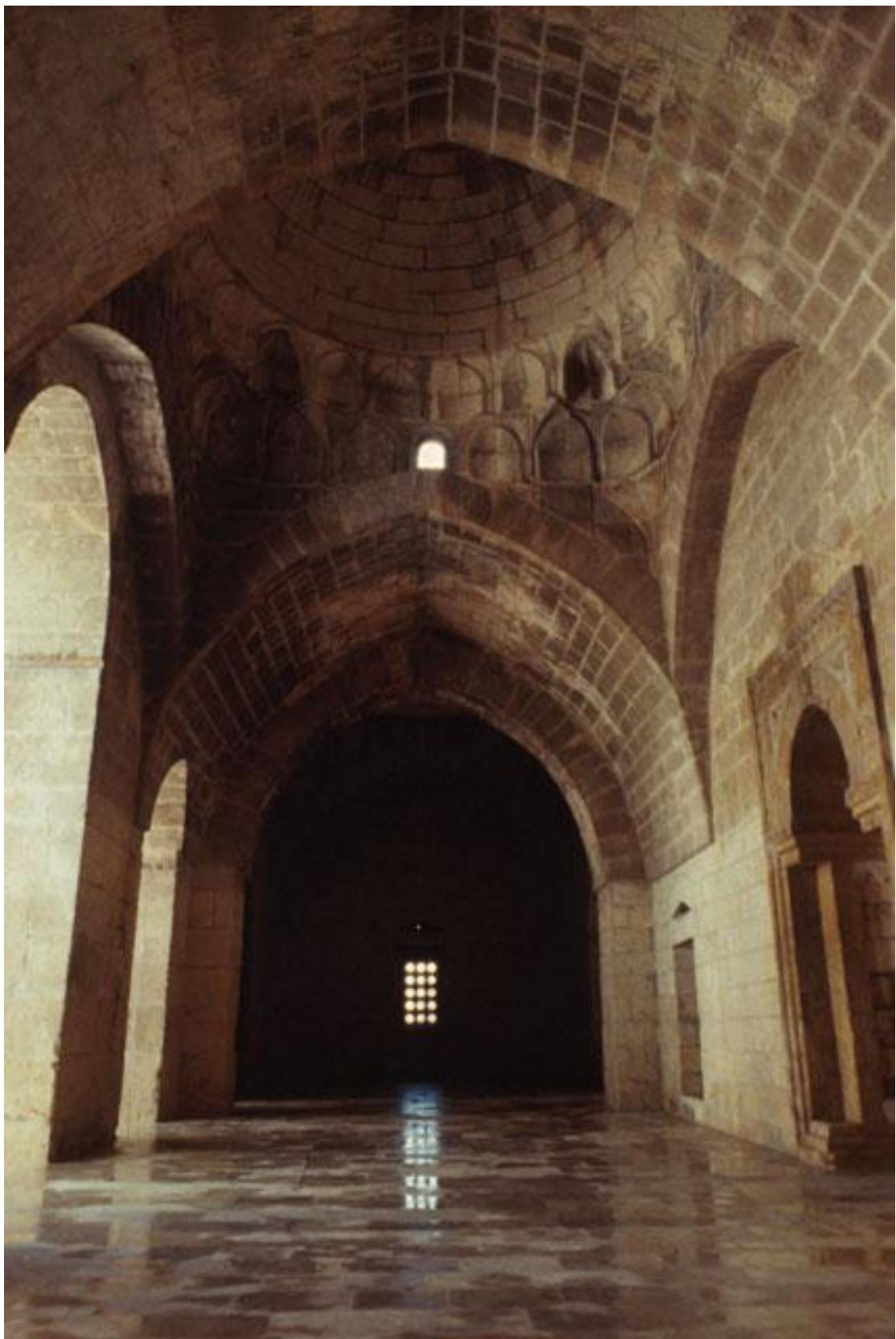
*Source: arch net. [https://archnet.org/sites/477/media\\_contents/20415](https://archnet.org/sites/477/media_contents/20415)*

**Figure 3.3.7:** View of the courtyard and southern interior façade of madrasa Al Kamilyya.Aleppo.1985.



*Source: arch net. [https://archnet.org/sites/477/media\\_contents/20409](https://archnet.org/sites/477/media_contents/20409)*

**Figure 3.3.8:** View of the interior of prayer hall of madrasa Al Kamiliyya.Aleppo.1985.



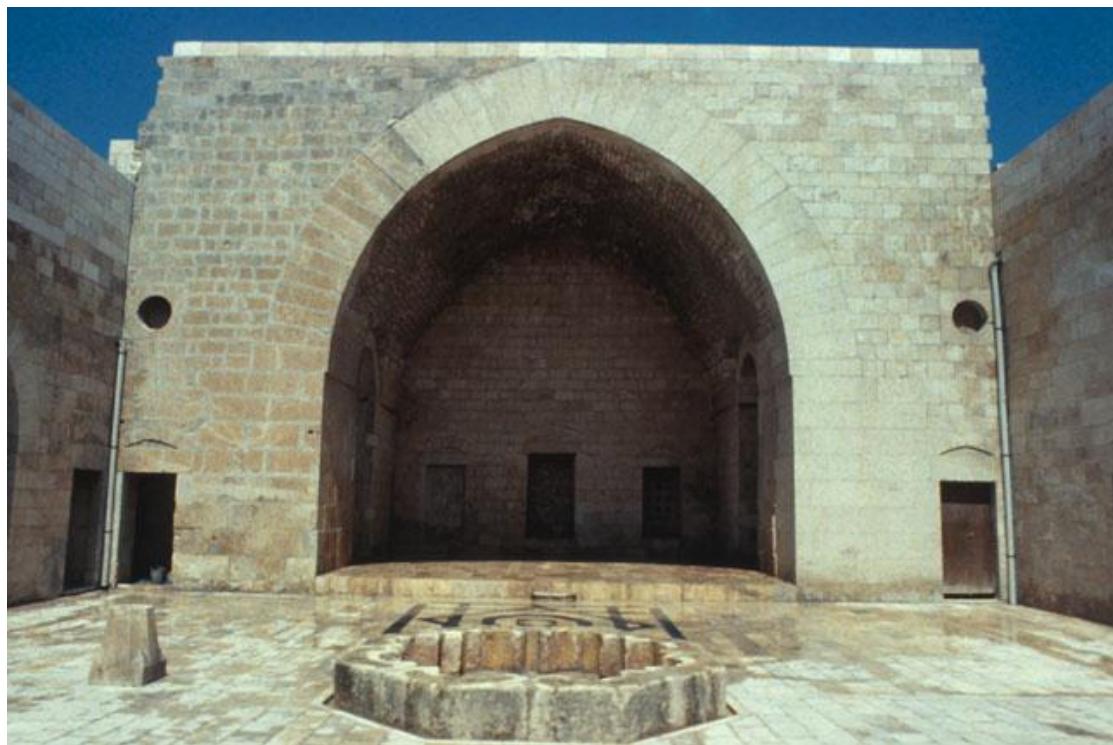
*Source: arch net. [https://archnet.org/sites/477/media\\_contents/20411](https://archnet.org/sites/477/media_contents/20411)*

**Figure 3.3.9:** View of the mihrab of prayer hall of madrasa Al Kamiliyya.Aleppo.1986.



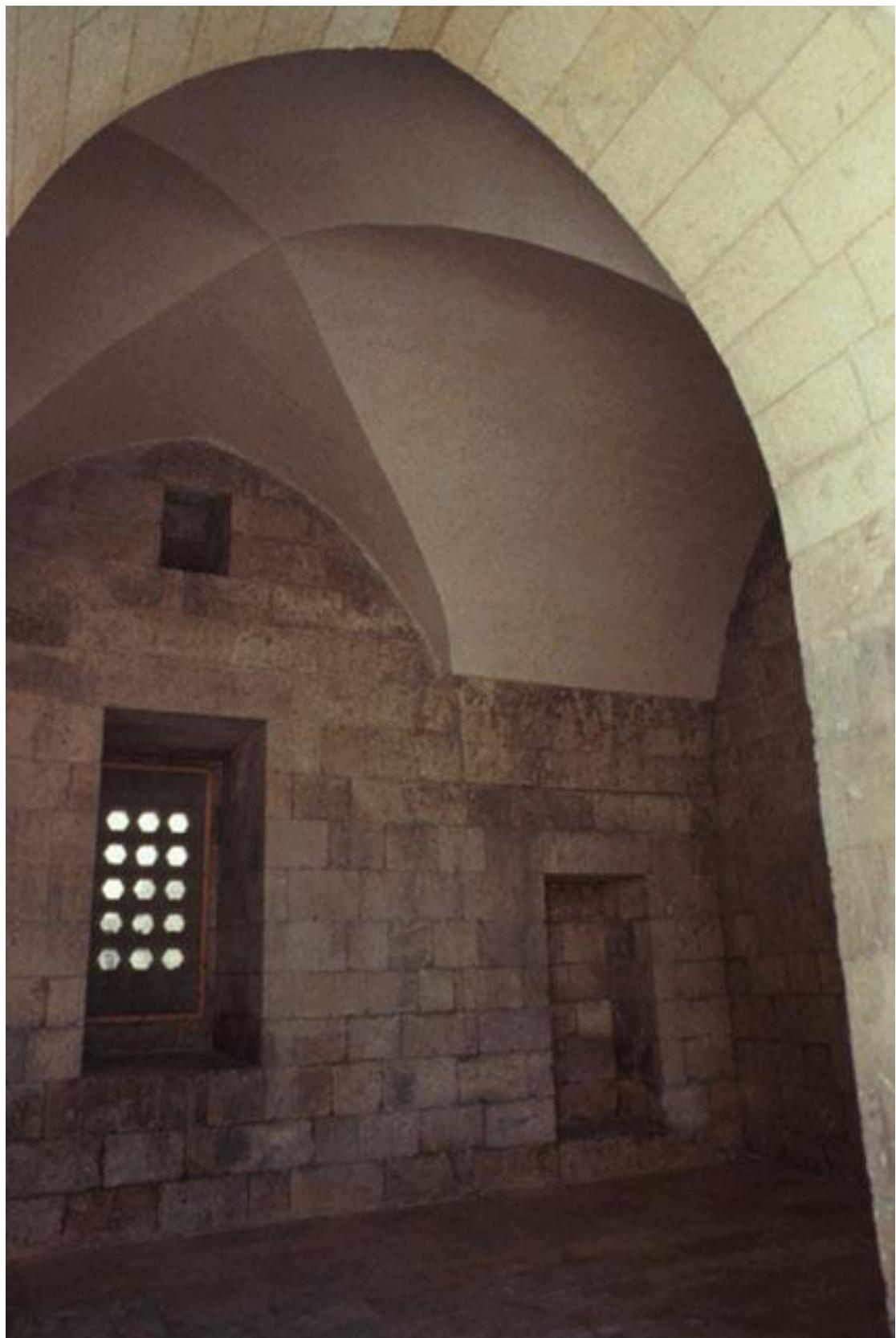
Source: arch net. [https://archnet.org/sites/1808/media\\_contents/111804](https://archnet.org/sites/1808/media_contents/111804)

**Figure 3.3.10:** View of the northern interior façade and the iwan of madrasa Al Kamilyya. Aleppo. 1985.



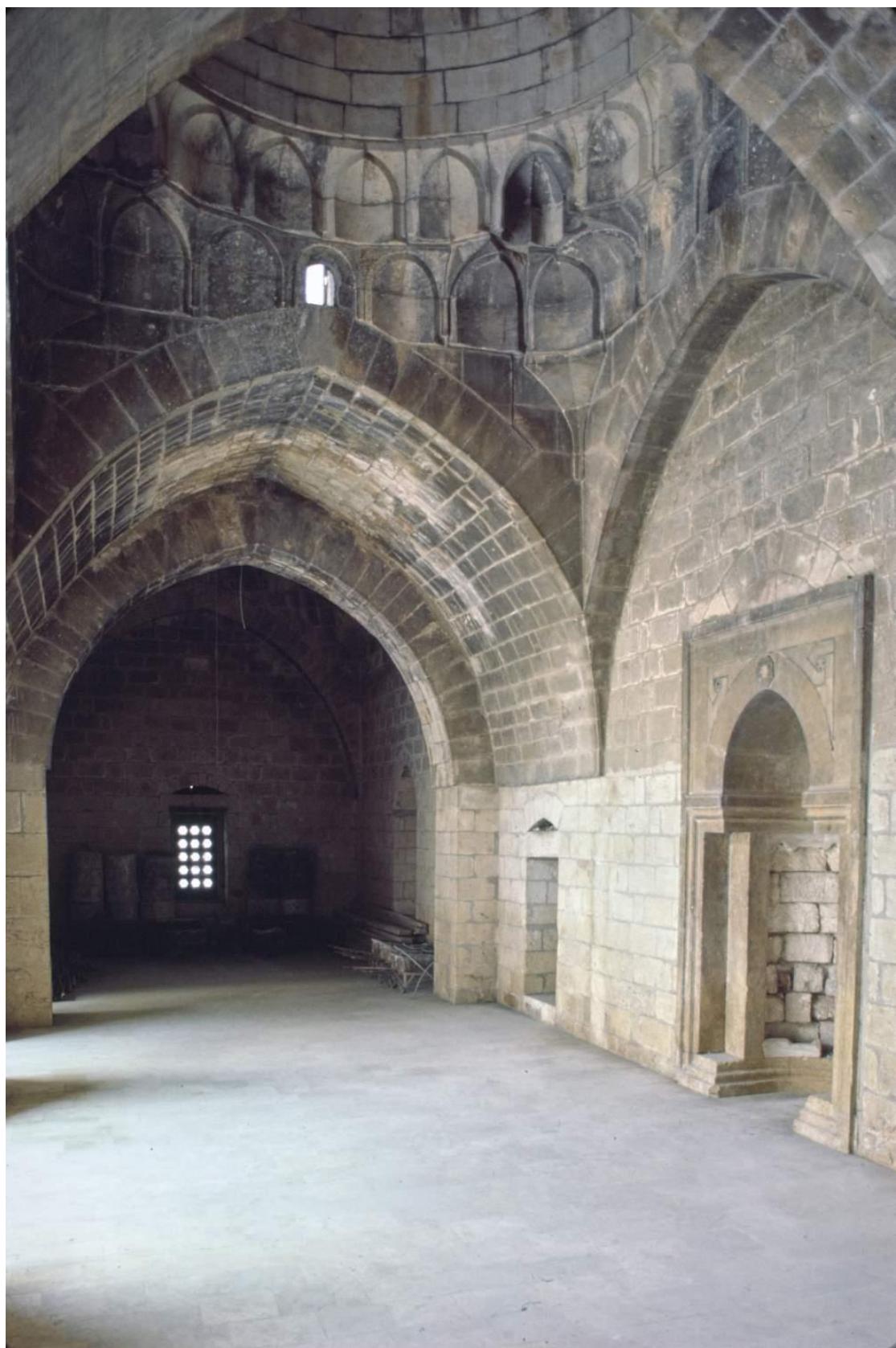
*Source: arch net. [https://archnet.org/sites/477/media\\_contents/20410](https://archnet.org/sites/477/media_contents/20410)*

**Figure 3.3.11:** View of the western hall of madrasa Al Kamiliyya.Aleppo.1985.



*Source: arch net. [https://archnet.org/sites/477/media\\_contents/20414](https://archnet.org/sites/477/media_contents/20414)*

**Figure 3.3.12:** View of the western Mausoleums from the prayer hall of madrasa Al Kamiliyya.Aleppo.1986.



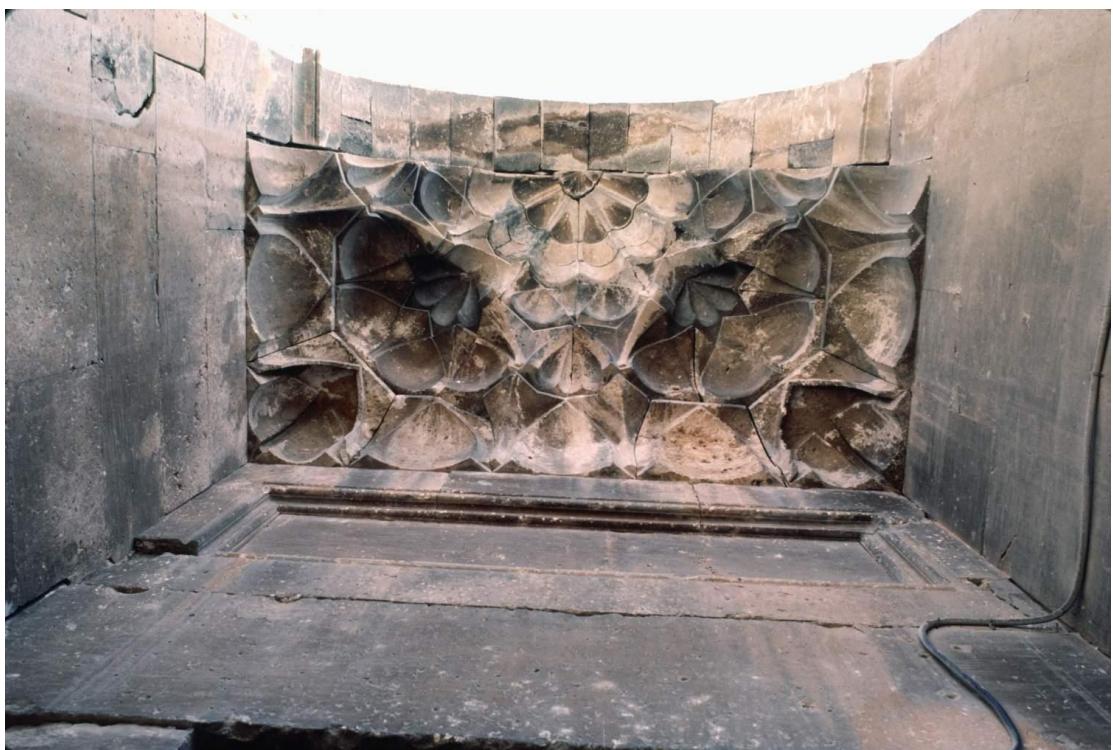
Source: arch net. [https://archnet.org/sites/1808/media\\_contents/111829](https://archnet.org/sites/1808/media_contents/111829)

**Figure 3.3.13:** View of the eastern interior of madrasa Al Kamiliyya.Aleppo.1986.



*Source: arch net. [https://archnet.org/sites/1808/media\\_contents/111823](https://archnet.org/sites/1808/media_contents/111823)*

**Figure 3.3.14:** View of the portal muqarnas vault of main entrance of madrasa Al Kamiliyya.Aleppo.1984.



*Source: arch net. [https://archnet.org/sites/1808/media\\_contents/111809](https://archnet.org/sites/1808/media_contents/111809)*

**Figure 3.3.15:** View of the southern exterior façade of madrasa Al Kamiliyya.Aleppo.1984.



Source: arch net. [https://archnet.org/sites/1808/media\\_contents/111817](https://archnet.org/sites/1808/media_contents/111817)

**Figure 3.3.16:** View of the eastern exterior façade of madrasa Al Kamiliyya.Aleppo.1986.



Source: arch net. [https://archnet.org/sites/1808/media\\_contents/111812](https://archnet.org/sites/1808/media_contents/111812)

**Figure 3.3.17:** View of the southern interior façade of madrasa Al Kamiliyya.Aleppo.2003



Source : <http://www.sonic.net/~tallen/palmtree/ayyarch/images/mkam2.jpg>

**Figure 3.3.18:** View of the eastern interior façade of madrasa Al Kamiliyya.Aleppo.1986



Source : [https://archnet.org/sites/1808/media\\_contents/111820](https://archnet.org/sites/1808/media_contents/111820)

**Figure 3.3.19:** View of the basin and Aqlaq in the courtyard of madrasa Al Kamiliyya.Aleppo.1986



Source: arch net. [https://archnet.org/sites/1808/media\\_contents/111824](https://archnet.org/sites/1808/media_contents/111824)

**Figure 3.3.20:** View of the domes of madrasa Al Kamiliyya.Aleppo.1985



Source: arch net. [https://archnet.org/sites/477/media\\_contents/20408](https://archnet.org/sites/477/media_contents/20408).

**Figure 3.3.21:** View of the central dome of prayer hall of madrasa Al Kamiliyya.Aleppo.1986



*Source: arch net, [https://archnet.org/sites/1808/media\\_contents/111830](https://archnet.org/sites/1808/media_contents/111830)*

**Figure 3.3.22:** view of stairs leads to roof of madrasa Al Kamiliyya. Aleppo. 1985



*Source: arch net, .[https://archnet.org/sites/477/media\\_contents/20412](https://archnet.org/sites/477/media_contents/20412)*

### **3.4 THE ARCHITECTURAL FEATURES OF ISLAMIC MADRASAS IN ALEPO DURING THE AYYUBID PERIOD 1183-1259**

The number of built madrasas increased during the Ayyubid period. These madrasas were originally built as madrasa and were widely spread in the old city of Aleppo inside and outside the walls of ancient Aleppo. Ayyubid madrasas have a symmetrical plan and regular walls, as the majority of madrasas are freestanding structures, especially to the south of the ancient city wall.

The majority of madrasas include all the architectural elements of madrasas.. The main iwan and prayer hall were located in the same axes, which crosses the courtyard in the majority of Ayyubid madrasas.

The main entrance of most Ayyubid madrasas is located in the corner of the plan on the western or eastern side of the madrasa. The Ayyubid entrances are distinguished with a high, decorated portal that leads to passage that has an L shape, which appeared for the first time in Ayyubid madrasas. Each madrasa has one to four entrances.

Most Ayyubid madrasas are slightly big and have one courtyard located in the center except madrasa Al Firdaws that has three courtyards. Most of the courtyards include a fountain on the center. These fountains have polygon plan (square, rectangular and octagonal), and the octagonal lobed pool appeared to the first time in the Ayyubid madrasas, such as the one in Al Firdaws. The floor of Ayyubid madrasas is paved by normal stone and in the pavement in some madrasas is done using the Ablaq technique (alternating black and white stones), which follows a geometrical design such as in Firdaws madrasa. The courtyards of madrasas are surrounded by other architectural spaces such as iwan, halls, prayer halls, cells, and arcades.

The prayer hall is a basic architectural space in Ayyubid madrasas; it is located on the southern side of Ayyubid madrasas, whereas the majority of mausoleums are located on one or each sides of it and leads to the prayer hall by a door. The prayer hall includes a mihrab in the middle part of it which roofed by a dome.

The majority of prayer halls consist of three parts divided by two big arches, except for Al Kamiliyya madrasa, which differs from all the other Ayyubid madrasas, where the prayer hall consists of five parts divided by four arches, because the mausoleums integrated with prayer hall. Whereas in other prayer halls the mausoleums which are located on each side of the prayer hall are separated from it and lead to it. The domes roofed most of the mausoleums in Ayyubid madrasas

The iwans in most of Ayyubid madrasas were big with high roofs; most these iwans were located on the northern side of madrasas and fronted with big arches opening to the courtyard. Most of madrasas include one iwan, whereas some have more than one iwan, especially madrasas built outside the ancient city wall. An example is Al Kamiliyya madrasa, which has two iwans. The four orthogonal iwans were observed for first time in Adimiyya madrasa.

The cells exist in most Ayyubid madrasas. The majority of cells in Ayyubid madrasas are located on two sides of the main courtyard (western and eastern sides of courtyard)

on one or two level such as in Adimiyya madrasa. These cells open to the arcades or the courtyard of madrasas by one door and window. Some madrasas have more than ten cells, such as Adimiyya madrasa, whereas few madrasas such as Al Firdaws are without cells. This could be due to the presence of a separate building used as dorms.

One or two halls existed in most madrasas. Some halls have almost the same size as the prayer hall and are divided by two arches to three parts, such as the halls of Firdaws madrasa.

The arcades are present in most Ayyubid madrasas and they surround the courtyard from one, two or three sides. Two levels arcade are seen in Al Adimiyya madrasa for the first time. The arcades are fronted with pointed arches, which are carried by columns that have muqarnas or Corinthian capitals, such as in the arcades of the Al Firdaws madrasa.

Most of the walls in the Ayyubid madrasas are thick. They were built using medium and big rectangular ashlar blocks. In additions, the exterior walls of Ayyubid madrasas are massive, and lack decorative elements. Except the portal façades which is usually rich with decorative elements.

Domes were widely used in Ayyubid madrasas; most madrasas have more than one dome, Al Firdaws for example has eleven domes. The domes were used to roof all the mausoleums and middle parts of prayer halls in Ayyubid madrasas, as well as most of the halls. Therefore, the domes are concentrated on the southern side of Ayyubid madrasas. The half-lobed pointed domes were used on all portals of main entrances of Ayyubid madrasas. Some domes are based on pendentives, whereas some are based on dodecagonal or octagonal drums, especially those in the middle part of prayer halls, such as in Al Firdaws madrasa. The domes are typically made of bricks or stones.

Barrel vaults were widely used in Ayyubid madrasas; they were used in all Ayyubid madrasas and roofed different spaces such as the iwans, halls, parts of the prayer hall, cells .etc. Cross vaults were used in a few Ayyubid madrasas, such as in Al Kamiliyya madrasa, where cross vaults were used to cover the halls and the passage leading to the courtyard. The mitered vault was used once in Al Firdaws madrasa, to cover the northern interior iwan.

The columns were an integral architectural element in most Ayyubid madrasas; the columns were located on the mihrab of prayer halls and in the arcades, which surrounded the courtyards. Most columns have muqarnas or Corinthian capitals. The composite columns (columns with double capitals) are seen for the first time in Al Firdaws madrasa. Most of these columns were made of marble.

Pointed arches were widely used in Ayyubid madrasas and they can be seen in almost every space of madrasas, whereas segmental arches usually used above interior and exterior windows, also above the small sized doors. The lobed pointed arches were also used during that period. These arches are likely to be located on the portal of the main entrances (usually take the shape from muqarnas). In addition, the horseshoe arch can be seen in Al Shazbaktiyya madrasa (Al Jaseer, L, 2000, p. 171).

The transition elements used in Ayyubid madrasas, include squinches, pendentives and drums, and these elements are located mostly on the prayer hall, mausoleums and halls of Ayyubid madrasas. The pendentives and squinches are used as transition elements from the square plan to the circular plan of the base of the dome or to the polygonal plan (dodecagonal and octagonal) of the drum of the dome, such as in the middle part of prayer hall of Firdaws madrasa. In addition, the drum itself is transition elements from dodecagonal and octagonal plans to the circular plan of the base of the dome.

The Ayyubid madrasas are rich in decorative elements; the majority of these elements are located on the portals of the main entrance and in the prayer hall. These elements include geometrical inscriptions, text inscriptions (Quranic, poetry texts, etc.) muqarnas, and Ablaq that appeared for the first time in the Ayyubid madrasa.

Most text inscriptions (foundation, Quranic, poetry texts, etc.) were located on the façade of the portal of the main entrance, the mihrab of the prayer hall and on the interior wall, which surrounded the main courtyard of madrasas such as in Al Firdaws madrasa. The muqarnas were used on the portal of the main entrances of most of madrasas, on the capitals of columns (arcades and mihrab) and on pendentives of some Ayyubid madrasas. The Corinthian capital of columns were used in some madrasas such as in Firdaws.

The geometrical inscriptions were used in some Ayyubid madrasas. Most of these were mostly located on the portal of main entrance and mihrab such as in Al Kamiliya madrasa. The overlapping colourful marble slabs appeared in the mihrab of some Ayyubid madrasas such as the mihrab of Al Firdaws, and the semi-circular inscriptions stripe aslo appeared for the first time in Ayyubid madrasas.

The Ablaq system was used in many Ayyubid madrasas. The system appeared for the first time on the portal of Al Kamiliyya madrasas. It was also used to pave the courtyard of some Ayyubid madrasas. In addition the lobed pool, that has an octagonal shape, appeared for the first time in Ayyubid madrasas as well, such as in Al Firdaws. This type of pool exists on the centre of the courtyard of many Ayyubid madrasas.

## 4. TRADITIONAL ISLAMIC MADRASAS IN ALEPPO DURING THE MAMLUK PERIOD

### 4.1 CATALOG OF AL SAHIBIYYA MADRASA

#### Madrasa Al Sahibiyya (Al Fistuq)

<b>Location</b>	The madrasa is located in Suwaiyat Ali district, on the east of the Khan Al-Wazir (Figure 4.1.1) (Figure 4.1.3) (Al Jaseer, L, 2000, p. 281) (Osman, N, 2009, p. 190).
<b>Establishment year</b>	Mamluk period 1363 (Osman, N, 2009, p. 190) (Al Jaseer, L, 2000, p. 281).
<b>Founder</b>	Shab Al Din Ahmad ibn Ya'qub ibn al-Sahib who was a prince (Tabbak, M, 1926, p. 43)
<b>Previous Restoration Processes</b>	The madrasa was restored in 1986 by the ministry of antiquities, which included cleaning, restored the courtyard, and restored the portal of main entrance of madrasa (Talas, M, 1956, p. 102) (Al Jaseer, L, 2000, p. 281). Also, the madrasa has been restored in 1996, which included painting works and renewing of the carpentry. In addition, the low parts of the walls were paved with yellow stones (Al Jaseer, L, 2000, p. 281).

#### The Features of Al Sahibiyya

Al Sahibiyya is considered as a small madrasa and it has irregular plan, the madrasa lacks some basic elements, such as mausoleums, students' cells and halls.

The prayer hall is located on the eastern side of madrasa. Whereas most of the prayer halls of other madrasas are located on the southern side. Al Sahibiyya madrasa is Probably the first madrasa that had a square plan prayer hall. The Iwan of the madrasa is faces its entrance, whereas in most of the other madrasas the Iwan faces the prayer hall. However, shops, located on the western side of madrasa, may have been used as student cells in the past (Figure 4.1.29).

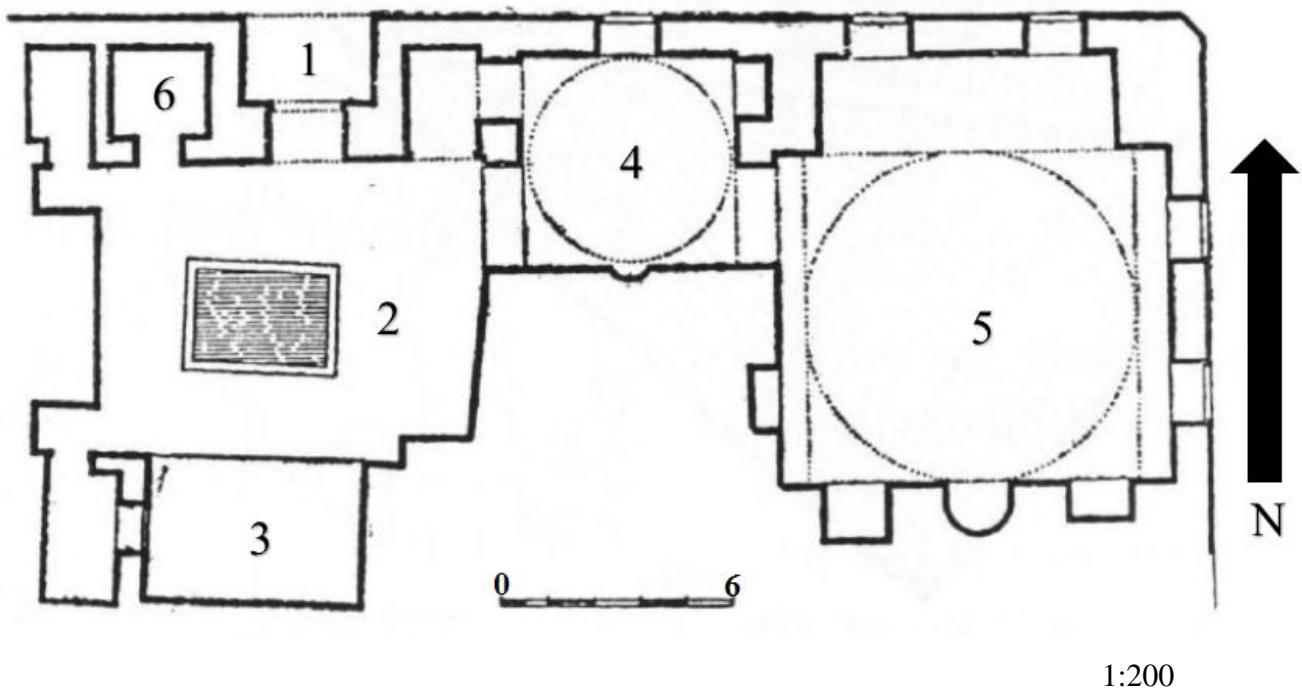
#### Plan of Madrasa

The madrasa has an asymmetrical irregular shaped plan. The current plan of the madrasa consists of main entrance which has a muqarnas portal, leads to a square courtyard surrounded by restroom, on the western side, the absolution area on the eastern side and Iwan on the northern side, the courtyard opens to a small domed square room with small Mihrab on its eastern side

This room leads to a domed prayer hall with Mihrab that occupies the east end of madrasa. The madrasa is distinguished with a prayer hall that is located on the western side of the courtyard as the early Islamic madrasas in Aleppo (Figure 4.1.2)

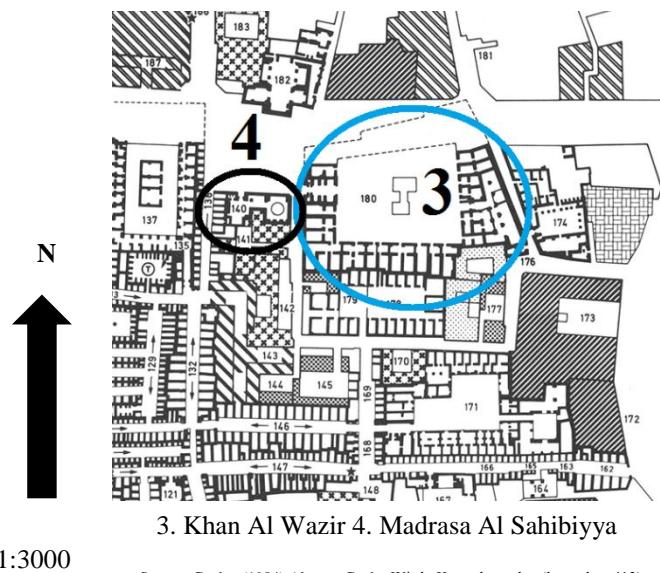
1. Entrance
  2. courtyard
  3. Iwan
  4. Hall
  5. Prayer hall
  6. Restroom
- (Figure 4.1.2)

Figure 4.1.2: plan of madrasa Al Sahibiyya, Aleppo



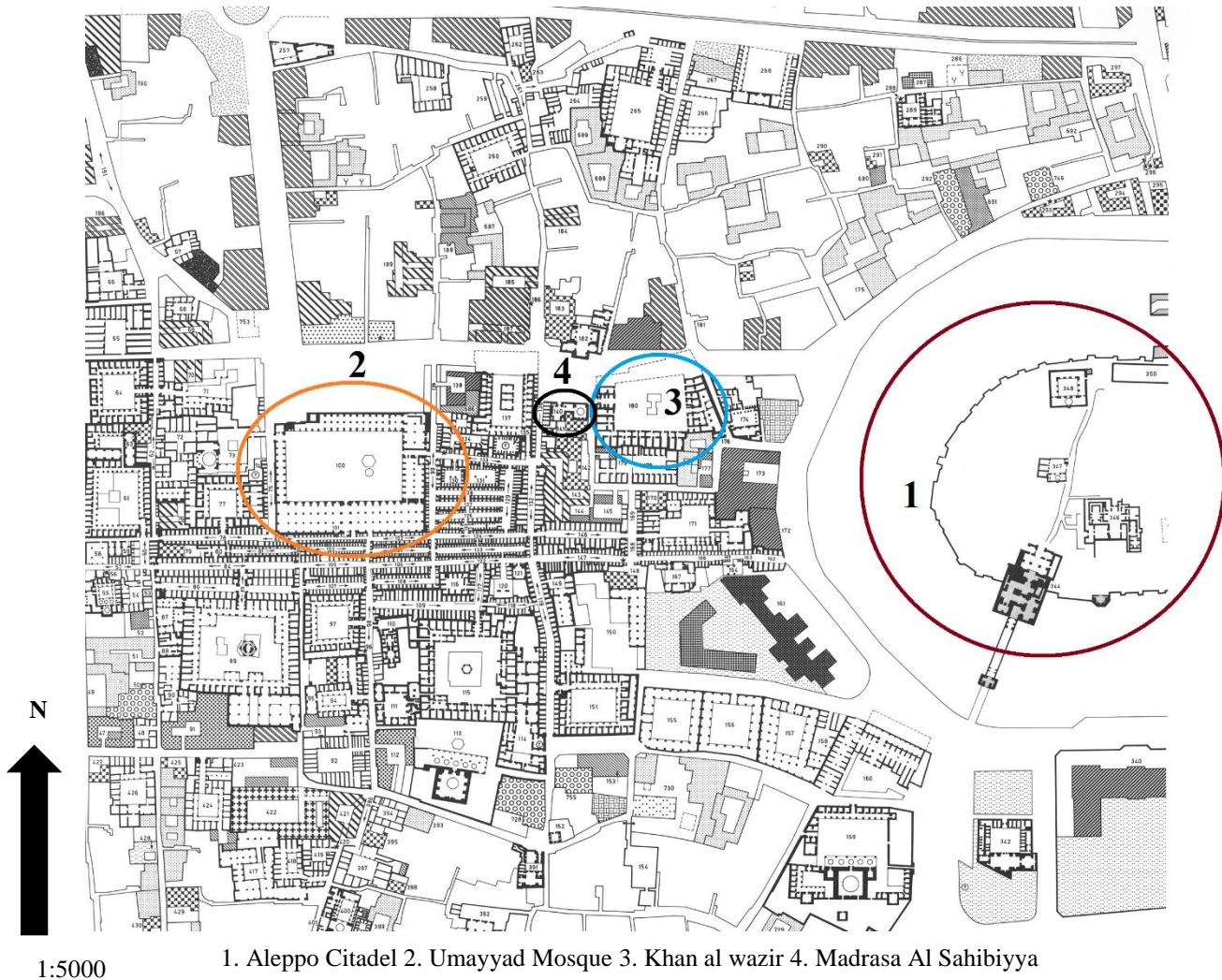
Source : la medr.Sahibiye,d'apres un releve de Kh.Moaz .Aleppo, Fig. 47.

**Figure 4.1.1:** site plan of madrasa Al Sahibiyya, to neighbourhood fabric Aleppo



Source: Gaube. (1984).Aleppo. Gaube-Wirth\_Kartenlegenden (kamalyya413)

**Figure 4.1.3:** location of the Al Sahibiyya madrasa to the old city of Aleppo.



Source: Gaube.(1984).Aleppo. Gaube-Wirth\_Kartenlegenden (kamalyya413)

## Madrasa Al Sahibiyya (Al Fistuq)

### Plan Elements

<b>Entrance</b>	<p>The madrasa is distinguished with the Muqarnas main entrances .The entrance is located on the west end of the northern side of madrasa.</p> <p>It consists of a front vaulted muqarnas portal, which has the shape of an Iwan and it is roofed with a half pointed dome, which carries three rows of muqarnas. Moreover, all of them has a pointed deep arch, warp edges shape (Figure 4.1.4) (Figure 4.1.21).</p> <p>The entrance has three steps lead leading to the portal, on the left wall of the portal, there is an inscription text about the founder attributions of madrasa to (Ahmad ibn Ya'qub ibn al-Sahib) (765AH) (Osman, N, 2009, p. 190) also there are another inscription text on the western wall of the portal, it consists seven lines. (Figure 4.1.22). In addition, the Ablaq used on the portal of madrasa as a decoration element (Figure 4.1.4).</p>
<b>Courtyard</b>	<p>The courtyard has a rectangular plan and it is located on the western side of madrasa, raised by one-step of the entrance. The entrance on the northern side and an Iwan on the southern side surround the courtyard (Figure 4.1.5) (Figure 4.1.19). Restrooms on the eastern side whereas the absolution area is on the eastern side. Also on the eastern side of the courtyard there are three steps leading to a small domed hall (Figure 4.1.6). The floor and walls of courtyard are paved with yellowish stones (Figure 4.1.5) (Al Jaseer, L, 2000, p. 282).</p>
<b>Prayer hall</b>	<p>The prayer hall has a rectangular plan; it is located on the east end of the madrasa. The prayer hall opens onto a small hall by a door above it pointed arch, the door connects with the small hall with two steps (Figure 4.1.27). The prayer hall has four windows; two of them are located on the northern wall opens onto the street whereas other two are located on the eastern wall opens onto the narrow street (Figure 4.1.26). In addition, the prayer hall has four pointed arches one arch on each side of it. (Figure 4.1.24).</p> <p>The hall is roofed with a pointed dome, the dome is based on dodecagon drum that has four small windows located on the four basic sides, and the dodecagon drum is based on pendentives that is considered as transition elements from dodecagon to square shape of the prayer hall (Figure 4.1.14).</p> <p>The prayer hall distinguished with a beautiful mihrab on the southern side of it, it has a Quran text, adjacent to mihrab there is a small minbar and it is made of wood (Figure 4.1.9) (Al Jaseer, L, 2000, p. 283).</p>
<b>Iwan</b>	<p>The iwan is located on the south side of the courtyard and it is raised one-step above the level of the courtyard. The iwan's fronted with a big pointed arch. This iwan is roofed with a barrel vault, on the east side of iwan .there was a door instead of the closet niche; this door used to open to the side street on the east of madrasa, later the door was closed with a wall. Nowadays the iwan is used as an ablution area (Figure 4.1.5) (Figure 4.1.19) (Al Jaseer, L, 2000, p. 283).</p>
<b>Hall</b>	<p>The small domed hall has a square plan, it is located between the courtyard and prayer hall.</p> <p>The hall has two functions, as a passage between the courtyard and prayer hall, and as a hall; the hall opens onto the courtyard by with a pointed arch, the door is raised four steps above the level of the courtyard whereas it is connected with the prayer hall with two steps (Figure 4.1.6) (Figure 4.1.18) (Figure 4.1.27).</p> <p>The hall has a small mihrab, it is located on the southern wall, and one window overviews the street on the northern side. The hall is roofed with a pointed stone dome without drum carried by pendentives that is based on circle edges on each corner of the hall (Figure 4.1.28).The mihrab is decorated with floweriness and Quran text inscriptions (Figure 4.1.7) (Figure . 23).</p> <p>Probably this hall was added later because Abou Zar did not mention it in his book (Al Jaseer, L, 2000, p. 282).</p>
<b>External facades</b>	
<b>Eastern facade</b>	<p>The eastern façade is the eastern exterior façade of the prayer hall, the façade includes two windows and one small window, which is higher than other two windows and it is located on the top middle of eastern exterior façade. Above it there is a pointed dome roof the prayer hall; the dome is based on dodecagon drum with a small window (Figure 4.1.11).</p>

## Madrasa Al Sahibiyya (Al Fistuq)

### External facades

<b>Northern facade</b>	<p>The northern exterior façade has a huge solid wall with two levels; the height of the exterior wall of the prayer hall is higher than other parts of northern façade. The facade consists of a solid wall right to left, next to it there is a high front muqarnas-vaulted portal of the main entrance of madrasa, which takes iwan shape (Figure 4.1.10) (Figure 4.1.11).</p> <p>The portal consists of a door decorated with Ablaq on each side of it, there is a lintel above the door and above it, a row of yellow and black stones arranged sequentially. Above these rows, there is an inscription including three rows of Quran text above its three levels of muqarnas, on the top of muqarnas a half- lobed dome, this dome front with a big lobular pointed arch with warp edges (Figure 4.1.4). Next to the entrance of madrasa, a window of the small hall, above the window there is a rectangular carved plaque with a geometric design (Figure 4.1.12). Next to the façade of the prayer hall, which has three windows, two normal windows whereas the third one is smaller and located on top middle of those windows.</p> <p>Above the first window a rectangular carved plaque with a geometric design, whereas above the next window located on the east end of façade has a rectangular carved plaque with a floweriness design, which is similar to carved plaque above the window of small hall (Figure 4.1.13). The window on top of façade of prayer hall is smaller, in addition above the prayer hall there is pointed dome based on dodecagon drum with a small window (Figure 4.1.11) (Figure 4.1.15).</p>
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### Internal facades

<b>Northern facade</b>	<p>The northern interior façade consists of a huge pointed arch raised one-step above the level of courtyard, In middle of the façade, the interior part of the main entrance has a pointed arch above it (Figure 4.1.15) (Al Jaseer, L, 2000, p. 286). Close to the northeastern corner there is a small side opening that has a segmental arch and it leads to a small hall (Figure 4.1.16).</p>
<b>Southern facade</b>	<p>The southern façade is the façade of the main interior iwan, which was previously mentioned it (Figure 4.1.5) (Figure 4.1.19).</p>
<b>Western facade</b>	<p>The western façade includes restroom that is located on the right end of the facade (Figure 4.1.20).</p>
<b>Eastern facade</b>	<p>The eastern interior façade consists of a huge pointed arch (Figure 4.1.17), in the western side of this façade there is an opening that has a pointed arch leads to a small hall and this opening is raised four steps of the courtyard (Figure 4.1.18) (Figure 4.1.6) (Al Jaseer, L, 2000, p. 286).</p>

### Decorative elements

The decorative elements were widely used widely in the portal of madrasa and mihrabs' of prayer hall and its hall. The portal of madrasa is decorated with an Ablaq on each side of the entrance door, also the entrance is decorated with three rows of muqarnas, in addition, the lobular arch of the entrance portal decorated with warp edges (Figure 4.1.4) (Figure 4.1.21).

Above the door of the portal, there is a rectangular plaque has three rows of text inscription shows the founder of madrasa (Ahmad ibn Ya'qub ibn al-Sahib) and establishing date (d. 1363/765 AH) (Figure 4.1.21). Also, there is another inscribed text on the western wall of the portal and it consists of seven lines. This text inscription includes list of endowments, which belongs to this madrasa, and the name of the founder of the madrasa (Ahmad ibn Ya'qub ibn al-Sahib). In addition, the date of this edict (d. 1503/909 AH) there are four or five lines of unreadable text inscription (Figure 4.1.4) (Figure 4.1.22) (Herzfeld, 1954-1956, p. 340).

On the northern exterior façade of madrasa there are carved rectangular plaques located above the windows, one of them with floweriness design, whereas the other two with geometric designs (Figure 4.1.12) (Figure 4.1.13).

Mihrabs of the small hall decorated with floweriness ornaments and Quran text inscription (Figure 4.1.23) (Figure 4.1.7), whereas the Mihrab of the prayer hall is bigger than the first one and it is decorated with floweriness ornaments and Quran text inscription. The two columns of the Mihrab are decorated with muqarnas capital. Adjacent to the Mihrab there are ornamented wooden Minbar (Figure 4.1.8) (Figure 4.1.9) (Al Jaseer, L, 2000, p. 283).

## Madrasa Al Sahibiyya (Al Fistuq)

### Structural elements

<b>Vaults</b>	The barrel vaults were widely used in Sahibiyya Madrasa such as on the Iwan of madrasa which use pointed barrel vault in it (Figure 4.1.19) in addition on the four big pointed arches of prayer hall, such as the barrel vault on the northern interior wall of prayer hall (Figure. 24) (Al Jaseer, L, 2000, p. 281).
<b>Domes</b>	<p>The madrasa is roofed with two pointed domes; the bigger one roofs the prayer hall whereas the small one roofs the small hall.</p> <p>The prayer hall is roofed with one big dome based on a dodecagonal drum, which includes four small windows, which are located on the four basic directions (north, south, east, and west). This dome made of stone (Figure 4.1.14) (Figure 4.1.25). Whereas the dome of small hall is lower and smaller, it made of brick without a drum based on it (Figure 4.1.11).</p> <p>In addition, there is a small half-lobed dome on the portal of the main entrance, which is used as a decorative element (Figure 4.1.4).</p>
<b>Arches</b>	<p>The pointed arches were widely used in different areas of the madrasa such as in prayer hall, small hall, iwan, and entrance.</p> <p>In prayer hall, there are four big pointed arches one on each side of this hall (Figure 4.1.24) (Figure 4.1.26). Whereas on small hall there are two pointed arches one of them above the opening which leads to the courtyard and raised four steps above level of courtyard(Figure 4.1.18) whereas the other one above the opening which leads to prayer hall (Figure 4.1.27).</p> <p>There is a lobed arch with warp edges on the front portal of main entrance (Figure 4.1.4). In addition There is a small segmental arch above the door of interior façade of the main entrance of madrasa (Figure 4.1.15).</p>
<b>Walls</b>	The walls of the madrasa are thick, mostly they were built using ashlar blocks and most of those blocks are medium with rectangular shape (Figure 4.1.11).
<b>Transition elements</b>	The transition elements used from the square plan of the prayer hall to a dodecagonal plan of dome drum was the triangular pendentives. In addition The dodecagonal drum itself is considered a transition element, as it serves the transfer from the dodecagonal shape to the circular shape of the base of the dome(Figure 4.1.14) (Figure 4.1.25). Whereas the transition elements used from square plan of the small hall to the circular shape of the base of the dome was the triangular pendentives(Figure 4.1.28).

Figure 4.1.4: the main entrance of madrasa Al Sahibiyya, Aleppo .2017



Source: Mosques of Old Aleppo  
<https://www.facebook.com/aleppomosque/photos/pb.269260526597232/269259563263995/?type=3&theater>.

Figure 4.1.5: the courtyard and iwan of entrance of madrasa Al Sahibiyya, Aleppo 2017



Source : Saleh Zakkour.

[126](https://www.facebook.com/photo.php?fbid=1994938837454890&set=p.1994938837454890&type=1&opaqueCursor=AbonreEoieOZyNvUTyH6k9JRxXP75SyDX1HWzNjhEAyJpIXFrpXGhxwl6gj0x2L9iXcIuWOQXP84HuwcMmQKTzYXX2IAAsGFkjE6o-1CyuUnHa3K7mug-paF7g8CILQXfrepbMtsScXFBIS0dc3qK7ERvbldj2dOa_f6MJ7spX0qv8pk8Mcht-Tpz-PB7BRk44e9xaWwHmkORXwW14AY4ODCe-tw35Cbxu8HtPBGBh-Bs-ypx_yML5Ajn_FkWBkZzAjrmHwL2n2uCkqGlob78Lq5TSpvWLHU_yIWBSP5oK6nq_2gH9EaxnbmPPS2uQQTReEH_33UkYVqjBfkWoLHyn-2UjZRMjf9yT-zz2GorsSfcBhlpX55Jm0F_R756DJCS56Pr4BzTOZgRus0EnWc9o9JjgyIzvpDAiZz1R2w85zcyWv8Q_b-JSkJ9z8Zbg&theatern. Saleh Zakkour.</a></p></div><div data-bbox=)

Figure 4.1.6: The small hall of madrasa Al Sahibiyya, Aleppo 2017



Source: Aleppo in picture between today and past 2017.

[https://www.facebook.com/aleppo.2017/photos/p.1474076409313484/1474076409313484/?type=1&opaqueCursor=Abrpol5V0U9HmgKGNni2vBuwyylabR8ljPTV8D-xFZNap-i7WnqYBdEF9VbCaR09zgqaiahBOIF3H-NMfJ\\_yx\\_xxIvyboW0Dr4XMUdbwiuPFBcTZ39KDyQstZ-egChWb3hyJcKK5UivH0mM3uevOTiCk595DLg-KTCWpsVbfAkssrP3yzY7Em02VS6glK6qJfvDPPM2YIIQVU5plox2bQ-n8IM\\_LeciozV3gbdnFtKaMGxnFnOlsTbSvIM1bxTuUuc7iEg3mySA87fXOsRO4Oa9okOPLTloKj56wL4nGIBfKLrTOILV6pKaX-Yi3PGOSddDVdcvgyE3HkOZvxpup5CYhJH0iH3TzgoBGi4eWawJd7KuQDiqjJefHZGarKrJh-8WKfSAo-xi2TLekjh3Yilmf53aOUbYLOH8imPRY\\_E9vRMAuU\\_MdR0OD3z27Vug9fIG7FaBuSkpM16TIB&theater](https://www.facebook.com/aleppo.2017/photos/p.1474076409313484/1474076409313484/?type=1&opaqueCursor=Abrpol5V0U9HmgKGNni2vBuwyylabR8ljPTV8D-xFZNap-i7WnqYBdEF9VbCaR09zgqaiahBOIF3H-NMfJ_yx_xxIvyboW0Dr4XMUdbwiuPFBcTZ39KDyQstZ-egChWb3hyJcKK5UivH0mM3uevOTiCk595DLg-KTCWpsVbfAkssrP3yzY7Em02VS6glK6qJfvDPPM2YIIQVU5plox2bQ-n8IM_LeciozV3gbdnFtKaMGxnFnOlsTbSvIM1bxTuUuc7iEg3mySA87fXOsRO4Oa9okOPLTloKj56wL4nGIBfKLrTOILV6pKaX-Yi3PGOSddDVdcvgyE3HkOZvxpup5CYhJH0iH3TzgoBGi4eWawJd7KuQDiqjJefHZGarKrJh-8WKfSAo-xi2TLekjh3Yilmf53aOUbYLOH8imPRY_E9vRMAuU_MdR0OD3z27Vug9fIG7FaBuSkpM16TIB&theater)

**Figure 4.1.7:** The mihrab of small hall of madrasa Al Sahibiyya, Aleppo



Source: Ashmolean Museum of Art and Archaeology, *The Creswell Archive*, <http://creswell.ashmolean.museum/archive/EA.CA.5762-0.html>

**Figure 4.1.8:** The prayer hall of madrasa Al Sahibiyya, Aleppo.



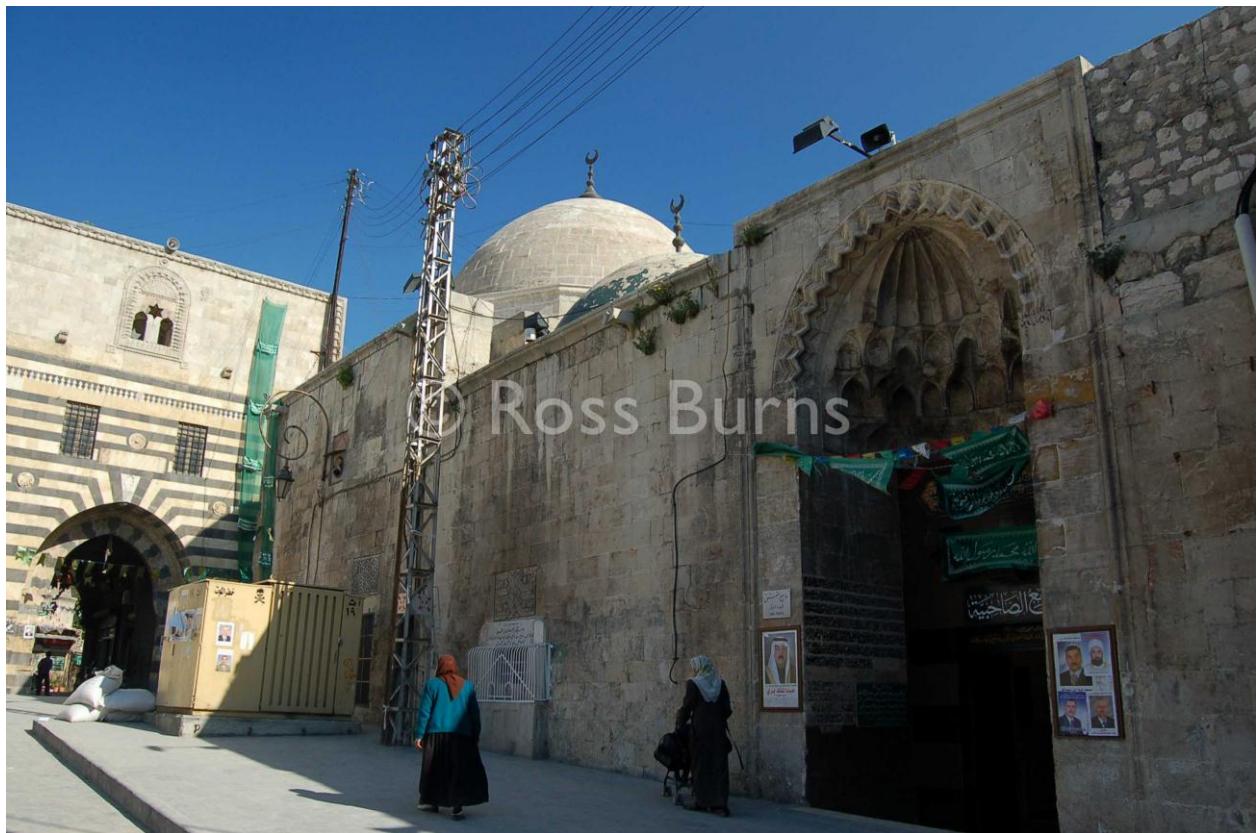
Source: *mosques of Aleppo*, 2014.1. <https://www.facebook.com/aleppomosque/photos/pcb.269260526597232/269259606597324/?type=3&theater>

**Figure 4.1.9:** The Mihrab and Minbar of prayer hall of madrasa Al Sahibiyya, Aleppo.



Source: Archaeology, the Creswell Archive .<http://creswell.ashmolean.museum/archive/EA.CA.5763-0.html>

**Figure 4.1.10:** The northern exterior façade of madrasa Al Sahibiyya, Aleppo,



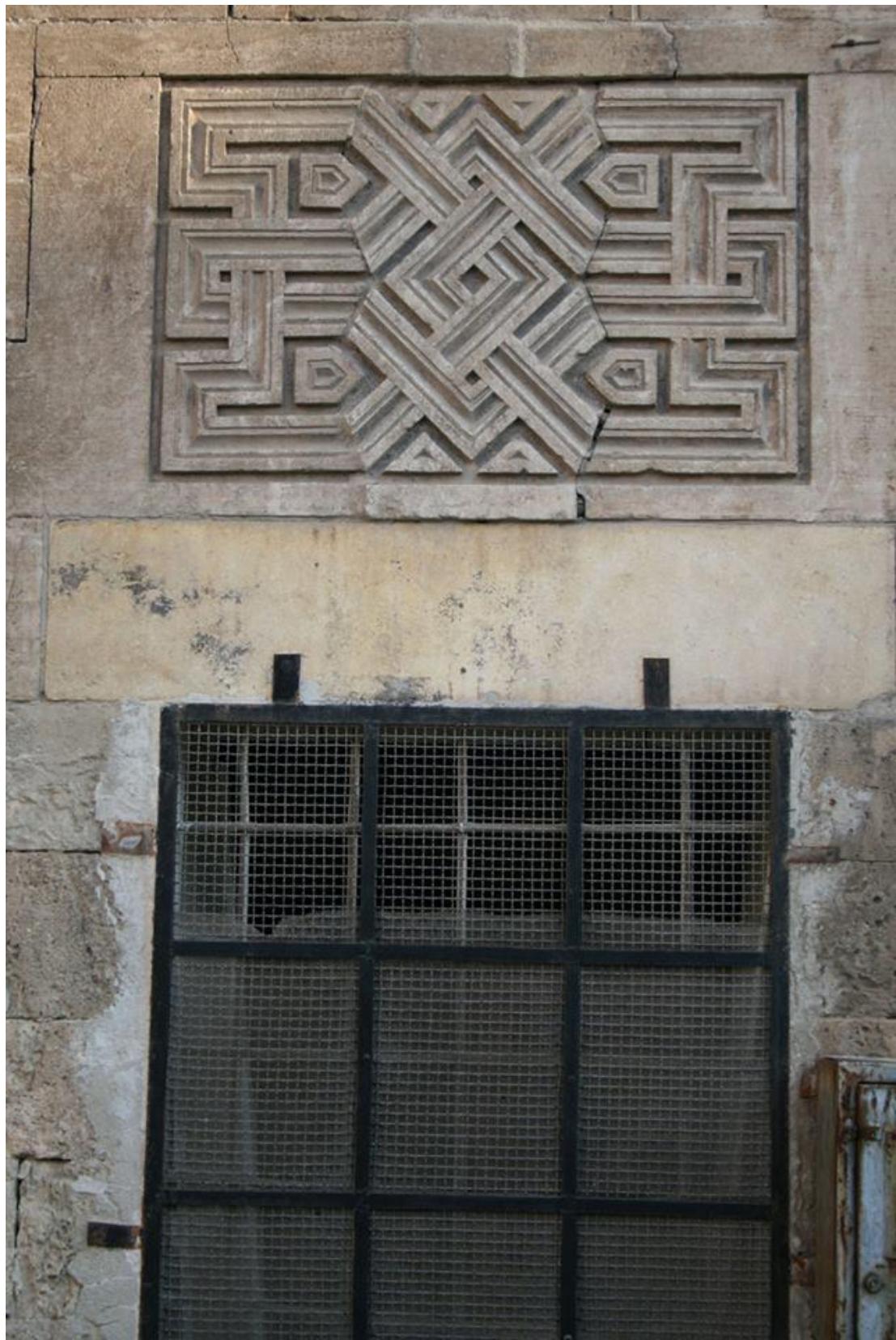
Source : [http://monumentsofsyria.com/wp/wp-content/uploads/Mad-al-Sahibiye-DSC\\_2536.jpg](http://monumentsofsyria.com/wp/wp-content/uploads/Mad-al-Sahibiye-DSC_2536.jpg)

**Figure 4.1.11:** The northern and eastern exterior façades of madrasa Al Sahibiyya, Aleppo, 2018.3.18



Source: *Mohamed Aboudan*

**Figure 4.1.12:** The rectangular carved plaque with a geometric design above the exterior window of the small hall of madrasa Al Sahibiyya, Aleppo,



Source : <https://www.facebook.com/aleppomosque/photos/pcb.250533871803231/250533741803244/?type=3&theater>

**Figure 4.1.13:** The rectangular carved plaque with a floweriness design above the exterior window of the prayer hall of madrasa Al Sahibiyya, Aleppo.



Source : <https://www.facebook.com/aleppomosque/photos/pcb.250533871803231/250533535136598/?type=3&theater>

**Figure 4.1.14:** The eastern exterior façade and dome of prayer hall of madrasa Al Sahibiyya, Aleppo,



Source : <http://creswell.ashmolean.museum/archive/EA.CA.5764-0.html>

**Figure 4.1.15:** the northern interior façade of madrasa Al Sahibiyya. Aleppo. 2018.3.18



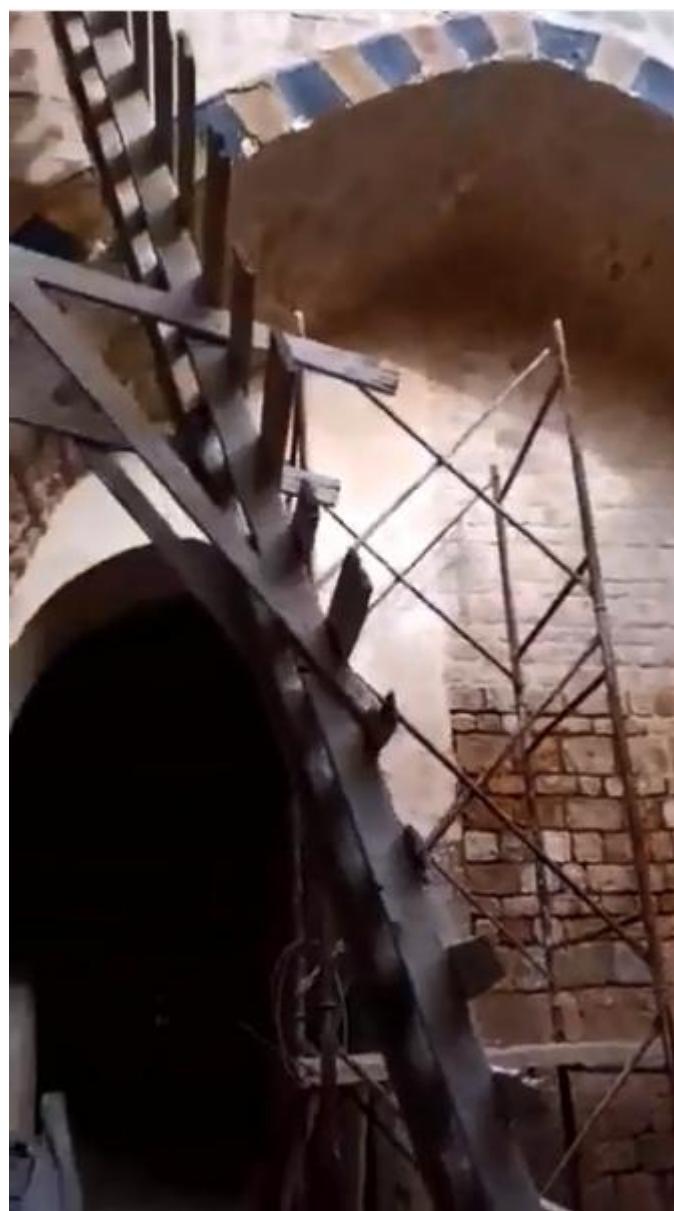
Source : Mohamed Aboudan

**Figure 4.1.16:** the northeastern corner of northern interior façade of madrasa Al Sahibiyya. Aleppo. 2018.3.18



Source : *Mohamed Aboudan*

**Figure 4.1.17:** the eastern interior facade of madrasa Al Sahibiyya. Aleppo. 2018.3.18



Source : *Mohamed Aboudan*

**Figure 4.1.18:** the northern interior façade of madrasa Al Sahibiyya close to east northern corner. Aleppo. 2018.3.18



Source: *Mohamed Aboudan*

**Figure 4.1.19:** the southern interior façade of madrasa Al Sahibiyya(main iwan). Aleppo. 2018.3.18



Source: *Mohamed Aboudan*

**Figure 4.1.20:** the western interior façade of madrasa Al Sahibiyya(main iwan). Aleppo. 2018.3.18



Source: *Mohamed Aboudan*

Figure 4.1.21: the muqarnas of the main entrance of madrasa Al Sahibiyya, Aleppo.



Source : <https://www.facebook.com/aleppomosque/photos/pcb.250533871803231/250533455136606/?type=3&theater>

**Figure 4.1.22:** the inscription text on the western wall of the portal, the main entrance of madrasa Al Sahibiyya, Aleppo.



Source : <https://www.facebook.com/aleppomosque/photos/pb.250533871803231/250533488469936/?type=3&theater>

**Figure 4.1.23:** The mihrab of small hall of madrasa Al Sahibiyya, Aleppo.2018.3.18



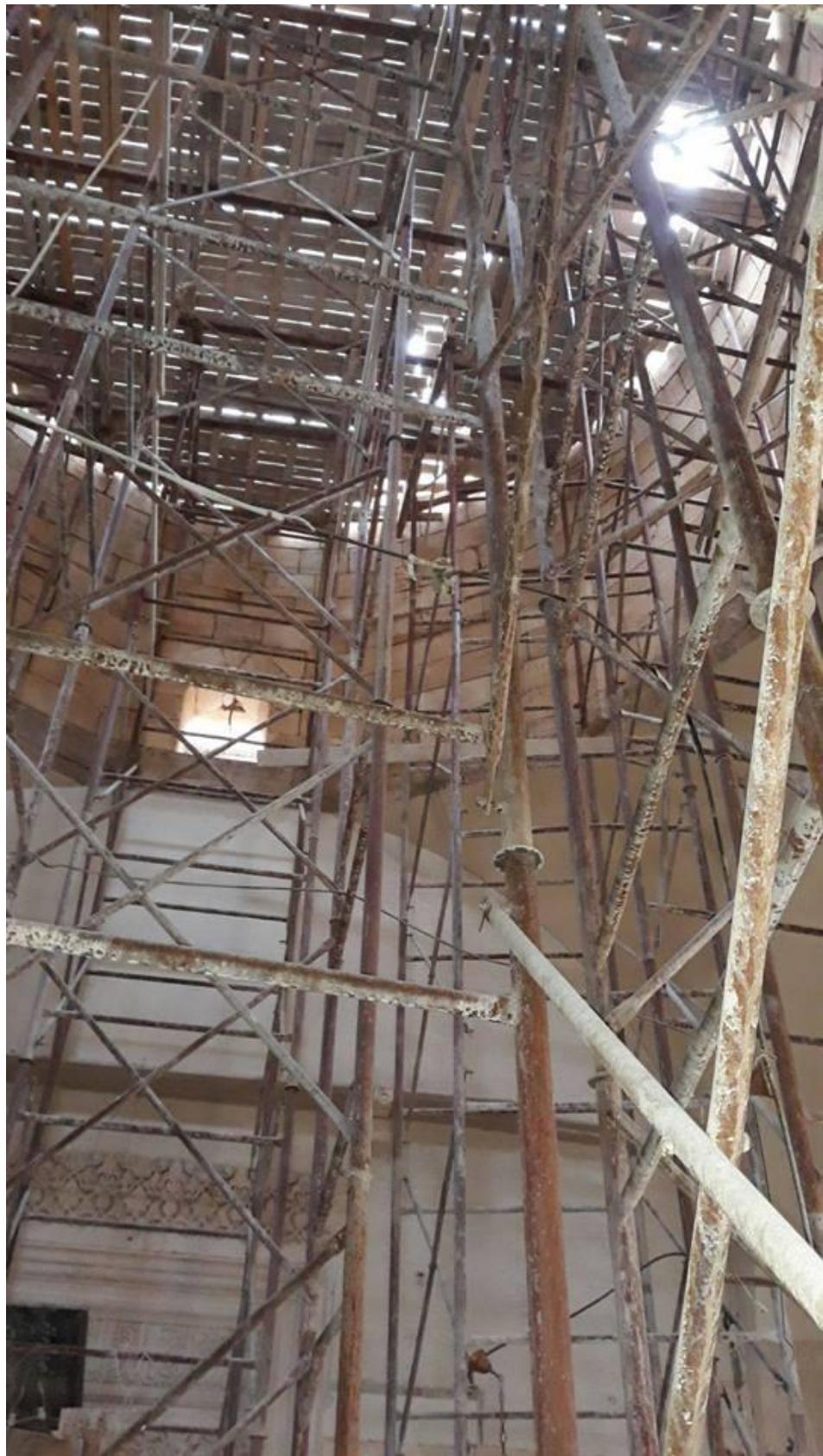
Source: *Mohamed Aboudan*

**Figure 4.1.24:** The barrel vault of northern wall of prayer hall of madrasa Al Sahibiyya, Aleppo.2018.3.18



Source : Mohamed Aboudan

**Figure 4.1.25:** The drum of dome of prayer hall of madrasa Al Sahibiyya, Aleppo.2018.3.18



Source : *Mohamed Aboudan*

**Figure 4.1.26:** The arch on the eastern wall of prayer hall of madrasa Al Sahibiyya, Aleppo.2018.3.18



Source : Mohamed Aboudan

**Figure 4.1.27:** The gate of small hall lead to prayer hall of madrasa Al Sahibiyya, Aleppo.2018.3.18



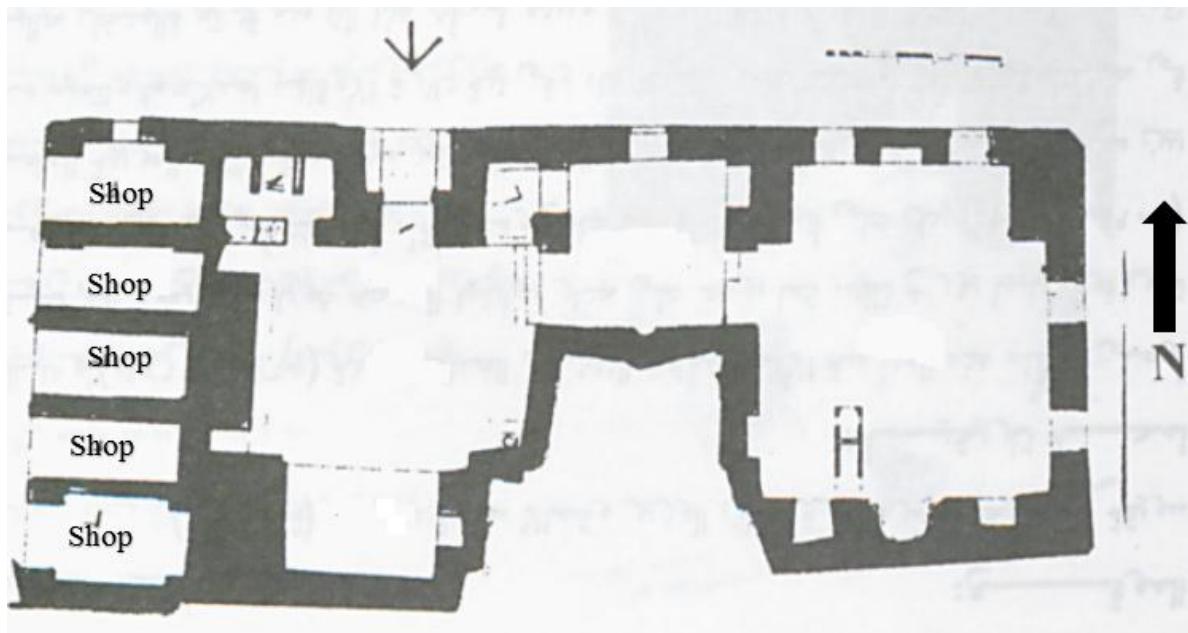
Source : *Mohamed Aboudan*

**Figure 4.1.28:** the pendentives and dome of the small hall e of small hall lead to prayer hall of madrasa Al Sahibiyya, Aleppo.2018.3.18



Source : *Mohamed Aboudan*

Figure 4.1.29: location of shops on current plan of madrasa Al Sahibiyya, Aleppo



1:300

Source: Al-Jaser. (1999). Development of Architecture of Aleppo Madrasas .plan of madrasa Al- Sahibiyya., Aleppo Figure 79.

## 4.2 CATALOG OF AL SAFFAHIIYYA MADRASA

### Madrasa Al Saffahiyah

<b>Location</b>	The madrasa is located in Sahat Bizza district, close to the Adiliyya Mosque (Herzfel, 1954-1956, p. 368) (Osman, 2009, p. 117) (Figure 4.2.3) (Figure 4.2.1).
<b>Establishing year</b>	Mamluk period 1424-5 (Osman , 2009, p. 117)
<b>Founder</b>	Ahmad Ibn Salih Ibn Ahmad Al Saffah, (Al Jaseer, L, 2000, p. 294) (Al Assadi, 1984, p. 216).
<b>Previous Restoration Processes</b>	The minaret has been restored in 1925 after it was demolished during the earthquake in 1821(Al Jaseer, L, 2000, p. 294) (Talas, 1956, p. 118).

### The Features of Al Saffahiyah

The madrasa Al Saffahiyah has an asymmetrical rectangular plan. The prayer hall is located on the southern side of the madrasa, It has a rectangular plan divided into three parts, and the prayer hall opens onto a small courtyard and faces the Iwan, which opens to it through a pointed arch that was later enclosed with glass. The madrasa entrance is located in northeastern corner of madrasa as many other madrasas that belongs to Ayyubid period.

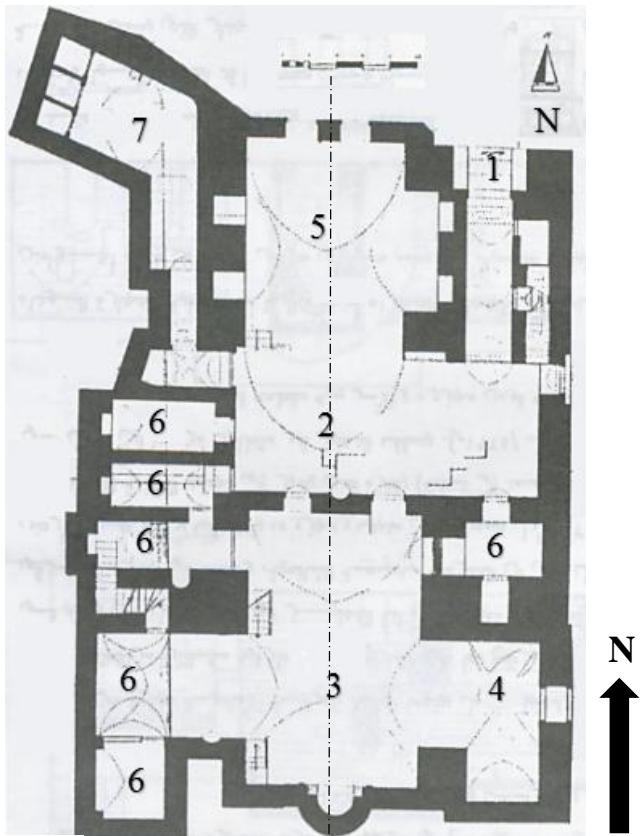
The madrasa distinguished with a portal in the main entrance of madrasa, which is riches with Ablaq and muqarnases and with minaret that located above the portal of the main entrance of madrasa and rich with stone geometric ornaments.

### Plan of Madrasa

The madrasa has an asymmetrical irregular shaped plan. The current plan of the madrasa consist of main entrance has tall muqarnas portal decorated with Ablaq, above it an elegant minaret, the portal leads to a passage leading to a small rectangular courtyard surrounded by an iwan, three rooms probably cells(accommodation rooms for students),restroom and rectangular prayer hall located on the southern side of the courtyard. Whereas the mausoleums are located on, each side of prayer hall. In the past, there were three graves located in the eastern mausoleums that was removed last years (Figure 4.2.2) (Talas, 1956, p. 118).

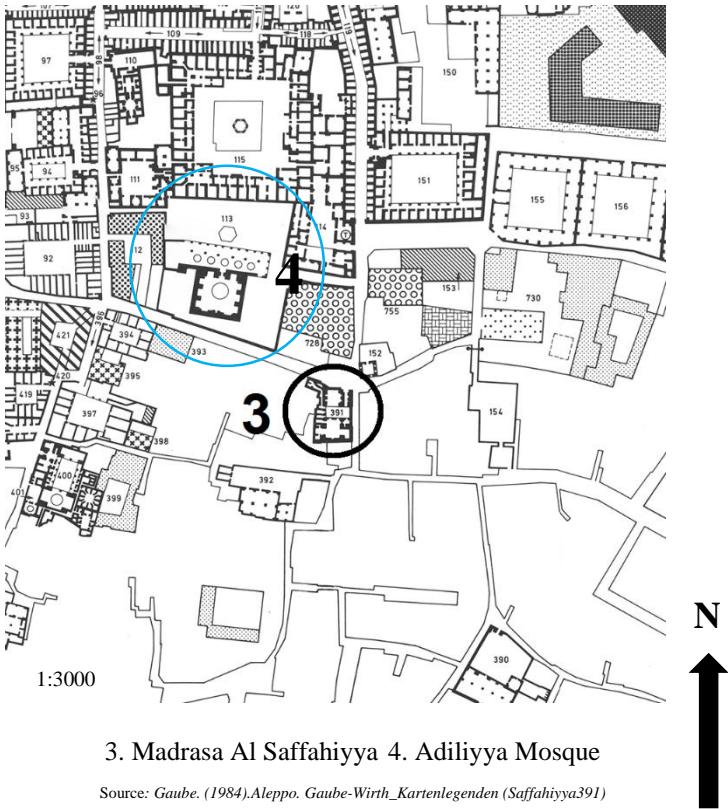
1. Entrance 2.coutyard 3.peryarhall 4. Mausoleums 5.Iwan 6. Rooms 7. Restroom (Figure 4.2.2).

Figure 4.2.2: current plan of madrasa Al Saffahiyah, Aleppo



1:300 Scale: AlJaseer. (2000). Historical Madrasas of Aleppo. 136. Plan of madrasa al Saffahiyah, Aleppo, (Figure 82.1) Aleppo .madrasa al Saffahiyah

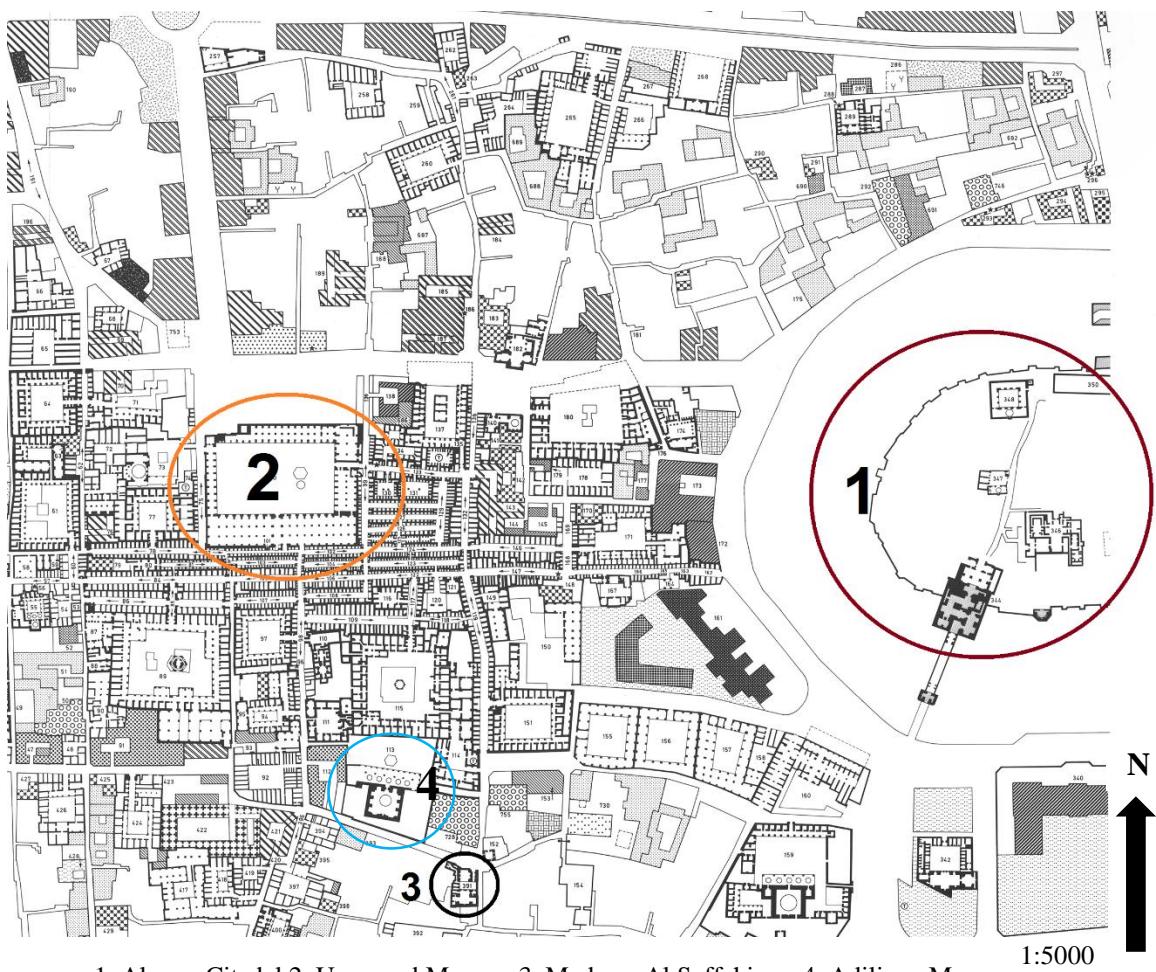
Figure 4.2.1: location of the Al Saffahiyah madrasa to the o to neighbourhood fabric Aleppo



3. Madrasa Al Saffahiyah 4. Adiliyya Mosque

Source: Gaube. (1984).Aleppo. Gaube-Wirth\_Kartenlegenden (Saffahiyah391)

**Figure 4.2.3:** location of the Al Saffahiyya madrasa to the old city of Aleppo



1. Aleppo Citadel 2. Umayyad Mosque 3. Madrasa Al Saffahiyya 4. Adiliyya Mosque

Source: Gaube. (1984).Aleppo. Gaube-Wirth\_Kartenlegenden (Saffahiyya391)

## Madrasa Al Saffahiyya

### Plan Elements

<b>Entrance</b>	<p>The madrasa is distinguished with a high entrance façade and its decorative elements; the façade is located on the northeastern side of madrasa. The entrance consists of high front portal and long corridor leads to the courtyard of madrasa (Figure 4.2.4).</p> <p>The front muqarnas portal is an iwan with Ablaq stonework, roofed with half pointed dome, carried by muqarnas, the portal has three steps that leads to its wooden door, and the door has one bench on each side of it. Above the door, there is a rectangular table including two lines of text inscription about the founder attributions to the madrasa (Ahmad ibn Al Saffah Al Shafei) and dated of (d. 1425/828 AH). Above the table, there is an Ablaq with circular shape (Figure 4.2.5).</p> <p>The door of the main entrance leads to a long corridor opens onto a small rectangular courtyard and it is roofed with a barrel vault, the western wall of corridor includes two doors above the door that located close to the portal which has a segmental arch, whereas above the other door there is a pointed arch(Figure 4.2.2). (Herzfeld, 1954-1956, p. 368) (Al Jaseer, L, 296, 2000).</p>
<b>Courtyard</b>	<p>The madrasa has a small rectangular courtyard (Figure 4.2.2). The courtyard is surrounded by the main iwan and corridor of the entrance on the northern side; the prayer hall on the southern side, two rooms, and entrance of restroom on the western side. The floor is paved with a yellowish stone whereas center part is decorated with black and white marble with geometric design (Al Jaseer, L, 296, 2000).</p>
<b>Prayer hall</b>	<p>The prayer hall is located on the south end of madrasa, the current plan of prayer hall is similar to plan of four iwans, and this hall opens onto the courtyard by a window and one door that has a step (Figure 4.2.6). The prayer hall consist of three parts, the middle part is roofed with high barrel vault and it has a mihrab located on the middle of southern wall of prayer hall; the mihrab has a muqarnas and two marble columns decorated with muqarnas capital. Next to the Mihrab, there is a simple wooden Minibar (Figure 4.2.7) (Figure 4.2.8). on the east (east mausoleum) of prayer hall there is a small window open onto the street, this side had three graves which were removed in last years, this partis roofed with crossed and barrel vault, those vaults are lower than vault of middle part (Figure 4.2.9). The west (west mausoleum) of prayer hall is roofed with low barrel, this part includes a small mihrab above it, inscription includeds Quranic text, next to it a door that lead to a small square room(Figure 4.2.10). Opposite to this room there is a small window on the northern wall of western part opens to a rectangular small room that is used now as ablutions area. This area connect with similar rectangular room, which opens to the courtyard by a small door (Al Jaseer, L, 2000, p. 296-300)</p>
<b>Iwan</b>	<p>The main large iwan of madrasa is occupies the northern side of the madrasa, the iwan has a square plane scheme and it's raised three-steps above the level of the courtyard. The main Iwan in madrasa is on the same axes with the mihrab of prayer hall which crosses the main courtyard too (Figure 4.2.2). The iwan fronted with a big pointed arch (Figure 4.2.11) and roofed with a high barrel vault, the high barrel vault crossed with two lower barrel vaults one vault in each side of it. The iwan has two wall niches on its eastern wall and has a small water basin on the west wall of it. The iwan opens to the main street by two windows located on the north wall of it, above each window a segmental arch (Figure 4.2.12). Nowadays the iwan is enclosed with glass (Al Jaseer, L, 2000, p. 300).</p>
<b>Rooms</b>	<p>The madrasa has four small rectangular rooms, one of them is located on the east end of southern side of the courtyard , this room has a niche on the south wall of it, roofed with barrel vault and open to the courtyard by small door above it a segmental arch.</p> <p>There are two rectangular rooms, located on the west side of the courtyard ,each one of those rooms has a niche located on the western wall of each them, in addition those rooms are roofed with a barrel vault and open onto courtyard by small doors. There is a rectangular small room located on the northeast side of prayer hall and open to it, this room is roofed with barrel vault now days this room is used as ablution area (Al Jaseer, L, 2000, p. 300). There is a small square room located on the southeastern corner of madrasa and opens to the prayer hall by a small door (Figure 4.2.6). This room is roofed with barrel vault (Al Jaseer, L, 2000, p. 300).</p>
<b>Minaret</b>	<p>The Minaret of Saffahiyya madrasa is considered as one of the most beautiful minaret in Mamluk period because of the height of this minaret and richness with stone ornaments and muqarnas, the minaret is located on the northeastern side of madrasa above the main entrance of madrasa (Figure 4.2.4).</p> <p>The minaret has an octagonal shape made of stone which rests on a cube base, and it has an octagonal balcony based on three rows of muqarnases, the balcony has a wooden fence and it rests on eight wooden columns the top of minaret, roofed with a small Semi-spherical dome. The body of minaret rich with stone ornaments and it has a small opening based on a cube base (Figure 4.2.13), this minaret has been damaged during the earthquake in 1821 and restored in D .1925 / 1433 H(Talas, 1956, p. 118).</p>

## Madrasa Al Saffahiyya

### External facades

<b>Northern Facade</b>	<p>The northern facade considered as the main facade of the madrasa. The wall of this façade has two levels; the main entrance façade of madrasa is higher than other parts of northern façade (Figure 4.2.4). It consists left to right of Façade that has the same height of minaret, the minaret has an octagonal shape and made of stone, it is located above the main entrance of madrasa; Followed by the main entrance façade of the madrasa, which consists of the front muqarnas portal which consist of an iwan with Ablaq stonework; the entrance has three steps and leads to its door, the wooden door has one bench on each side of it, Above the door there is a rectangular table with two lines of inscribed text about the founder attributed to the madrasa, the portal is roofed with half-pointed dome (Figure 4.2.4) (Figure 4.2.5); adjacent to the main portal of the madrasa there is the exterior façade of iwan which has two big rectangular windows above each one of them a segmental arch, Those two windows surrounded with Ablaq (Figure 4.2.14), in addition there are two stone gutters on the exterior façade of iwan, next to the windows there is the wall of the restroom.</p>
<b>Eastern Façade</b>	<p>The wall of eastern façade has two level; the exterior eastern façade of entrance wall of madrasa is higher than other parts of eastern exterior façades of courtyard and prayer hall. It consists of left to right of: The exterior eastern façade of entrance wall, which it is a huge solid wall without any details adjacent to the wall of eastern exterior façade of courtyard and prayer hall. The exterior eastern façade of prayer hall has a big rectangular window with a rectangular carved plaque above it, with a geometric shape, this window is surrounded with Ablaq, in addition, there is a stone gutter on top middle of eastern exterior façade (Figure 4.2.15). The exterior eastern façade of the courtyard had a rectangular window open to the sideway which it is closed now.</p>

### Internal facades

<b>Northern Facade</b>	<p>The northern interior façade is open to the northern side of the courtyard. The wall of this façade has two levels; the interior northern entrance façade of madrasa is higher than the wall of façade of iwan. The northern interior facade consists from left to right of: the southern façade of madrasa, adjacent to the interior northern facade of the corridor of the entrance of madrasa, which is a high wall opened to the courtyard by an open gate with a pointed arch, also there is a high small window with pointed arch located on the left of interior entrance façade. Nowadays this window is closed with stones (Figure 4.2.16). adjacent to this façade, the interior northern façade of iwan, which is raised one-high step of the level of the courtyard, this iwan open to the courtyard with a huge pointed arch (Figure 4.2.11). Nowadays the façade of iwan is closed with glass and open to the courtyard by a door made of iron with glass and raised three steps of the level of the courtyard (Figure 4.2.11).</p>
<b>Southern Facade</b>	<p>The southern facade opens to the southern side of the courtyard and it is considered as the interior façade of the prayer hall, which opens to the courtyard. This façade consists right to left of a rectangular window above it a semicircular segmental arch. Next to it a mihrab with pointed arch, and above it, a rectangular window which has a segmental arch, there are two circle hole one on each side of this window. Next to mihrab there is the main door of prayer hall, which is raised one-step above the level of the courtyard and has a rectangular shape (Figure 4.2.6). Adjacent to it a door that has a segmental arch, this door is located close to the east end of the wall of the southern interior façade and raised one-step above the level of the courtyard (Figure 4.2.6). This façade is distinguished with a beautiful text inscription (Qur'an inscriptions) extended along the wall, Located on the top of southern interior façade and extended from middle of it to the east end of wall (Figure 4.2.17).</p>
<b>Western Facade</b>	<p>The western interior façade is opens to the western side of the courtyard, the façade has three doors, and it consists from right to left of a big rectangular door raised one step above the level of the courtyard, with a lintel and a segmental arch right above each other, this wooden door open onto corridor lead to toilets of madrasa. Adjacent to the first door a small door with a lintel and a segmental arch right above each other. Above the door a small rectangular hole with pointed arch. The door lead to a rectangular small room, next to it a rectangular door with a rectangular lintel stone above it with a small rectangular hole with pointed arch (Al Jaseer, L, 2000, p. 302).</p>

## Madrasa Al Saffahiyya

<b>Eastern Facade</b>	The eastern interior façade is open to the eastern side of the courtyard, and it consists of a solid wall without any details except for a big rectangular gap located close to the northeastern corner of this facade. This gap has a semicircular arch, this gap includes a rectangular window with a segmental opening to a narrow street of madrasa. Now days this window is closed by stone and wooden table. in addition, there is a small rectangular hole with a small segmental arch located on the top of facade close to the east-southern corner of it(Al Jaseer, L, 2000, p. 302).
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### Decorative elements

The decorative elements are used widely in Saffahiyya madrasa especially in minaret and the main portal of the madrasa. The madrasa is distinguished with the Aqlaq system, it is used along the high front portal facade of madrasa (Figure 4.2.4), and it has a circular shape above the door of the main entrance of madrasa (Figure 4.2.5). In addition, the Aqlaq is surround with two windows of the exterior façade of madrasa iwan (Figure 4.2.14). Also it is used above the window of the exterior eastern façade of prayer hall (Figure 4.2.15).

The madrasa also distinguished with a long beautiful Quranic text inscription, which extended from the middle top of south interior façade of prayer hall to the east end of wall of this façade (Figure 4.2.17).also, there is a Quranic text inscription above the small mihrab of the prayer hall (Figure 4.2. 10).

In addition, there is a text inscription consisting of two rows within a rectangular plaque (20x40) cm, this text is written with a Naskhi characters line and shows the founder name (Ahmad ibn al-Saffah a -Shafei) and date of establishment (d. 1425/828 AH) (Figure 4.2.5) ( Herzfeld, 1954-1956, p. 368).

The muqarnas is used widely in Saffahiyya madrasa such as on the facade of the main entrance of madrasa (Figure 4.2.18), minaret, on capital of columns of the mihrab of the prayer hall and on the eastern end of the exterior wall of iwan which has three small rows of muqarnas (Figure 4.2. 18). Whereas the muqarnas of minaret consist of three rows of muqarnas and it carries an octagonal balcony above it (Figure 4.2. 13). In addition, two columns of Mihrab decorated with simple muqarnas capital (Figure 4.2.7). There is a minaret distinguished with beautiful stone ornaments on its body (Figure 4.2.13). Whereas the floor of the courtyard distinguished with a black and white marble has a geometric design.

### Structural elements

<b>Vaults</b>	<p>The barrel pointed vaults is used widely in Saffahiyya Madrasa. Such as on the entrance of madrasa, prayer hall, iwans and room. whereas-crossed vault used in the eastern part of prayer hall.</p> <p>The corridor of the main entrance, which opens to the courtyard is roofed with barrel vault consists of two part, the first one is next to the main door of the entrance and its roofed with low barrel vault whereas the other part is roofed with a high pointed barrel vault (Al Jaseer, L, 2000, p. 296).</p> <p>The prayer hall consists of three parts, the middle part roofed with a high barrel vault and its crossed with two sides low vaults which roofed the two parts of prayer hall on each side of the middle part of the prayer hall (Figure 4.2.7) (Figure 4.2.9).</p> <p>The western part of prayer hall roofed with barrel vault (Figure 4.2.10), whereas on the east of prayer hall roofed with two vaults (Figure 4.2.9). The one next to the window roofed with crossed vault whereas the other part with barrel vault the barrel vault of middle parts is higher than two equal height vaults, which is located on two sides of prayer hall (Figure 4.2.9). The iwan is roofed with three vaults; the middle part roofed with a high barrel vault, this vault crossed with two sides low barrel vaults, which roofed the two side parts of the iwan (Figure 4.2.12). In addition, all rooms, which previously mentioned are roofed with barrel vaults (Al Jaseer, L, 2000, p. 300).</p>
<b>Domes</b>	<p>The madrasa has two domes, one of them roofed the top of the minaret (Figure 4.2.13), this dome has small Semi-spherical shape, also there is a half pointed dome located on the top of the main portal of madrasa (Figure 4.2.18).</p>

## Madrasa Al Saffahiyya

<b>Arches</b>	<p>The pointed arches used widely in different places in madrasa such as in the entrance, prayer hall, mihrabs and in the iwan, whereas the segmental arches used in rooms and prayer hall. Lintel used on the windows of main entrance of madrasa (Al Jaseer, L, 2000, p. 302).</p> <p>In the main iwan of madrasa fronted with a big pointed arch (Figure 4.2.11), also in each mihrab of three mihrab of prayer hall there is a pointed arch, one of those arches located in the middle of the southern wall of prayer hall (Figure 4.2.7).</p> <p>The other pointed arch is in the mihrab located on the southern wall of the western wing of prayer hall (Figure 4.2. 10), also there is a pointed arch on the mihrab which is located on the northern wall of prayer hall wall, which open to the courtyard (Figure 4.2.6).</p> <p>There are pointed arches on the top of some small holes located on the eastern and western interior facade of madrasa, which opens to the courtyard. Such as the hole, which is located on the western interior façade of madrasa. Above rooms' doors and the hole is located on top of the right end eastern interior facade of madrasa that opens to the interior courtyard (Figure 4.2.17).</p> <p>The segmental arch used in many places of the madrasa such as above the two doors located on the western wall of the corridor of the main entrance and above the doors of the rooms and prayer hall, which opens to the courtyard of madrasa (Figure 4.2.6). In addition, there are segmental arches above two windows of the exterior façade of iwan (Figure 4.2.14).</p>
<b>Columns</b>	<p>The madrasa does not include columns except in the Mihrab, which is located on the middle part of the prayer hall; this Mihrab has two marble columns decorated with muqarnas capital (Figure 4.2.7). In addition, there are eight small wooden columns, based on the octagonal balcony, located on top of the minaret of the madrasa; those columns carries the roof of the minaret with a small Semi-spherical dome (Figure 4.2.13).</p>
<b>Transition elements</b>	<p>The madrasa does not include transition elements except for the minaret of the madrasa. The transition element from the square plane shape of the cube base of the minaret to an octagonal shape of the body of the minaret by Triangular end (a half pyramid shape) (Figure 4.2.13).</p>

#### **4.2.1 Analysis of Al Saffahiyya Madrasa**

During the first half of the 15<sup>th</sup> century, Aleppo was suffering from political instability and internal disorders due to the continuous change of the rulers of the city and the internal disorders between the governors. In addition Aleppo was attacked by Tamerlane (Mongol leader) in 1400, which led to massive damage on the structural and the human level of the Aleppo city (Al Ghazzi, K, Vol.3, 1991, p. 207-217) (Al Zaidi, M, 2009, p. 208).

The city started to gradually recover after it was regained by the Mamluks, who rebuilt many parts of the city. Despite all the mentioned factors, which led to a significant decline in Aleppo's social, political, and architectural aspects, the city was gradually developing on the economic level. Trade flourished in Aleppo and the city gradually entered the global trending network due to its location on the international Silk Road until it reached a peak in the middle of the 15<sup>th</sup> century (Al Jaseer, L, 2000, p. 260) (Heinz, G, 1984, p. 601-602).

Al Saffahiyya madrasa was founded by Ahmad Ibn Salih Ibn Ahmad Al-Saffah. He was known as Al Saffah because his father was the son of the sister of the Najim Abed Al Wahab and Al Zien Omar (sons of Ibn Abou Saffah) who were the judges of Aleppo (Al Tabbak, M, Vol.5, p. 184, 1924).

Ahmad Al Saffah was Katib Al-Serr in Aleppo for the Mamluk Sultan. Katib Al-Serr is a career founded during the Mamluk period and their work is to spy on the ruler for the sultan and tell the sultans about anything hidden by the ruler (Al-Zaidi, M, 2009, p. 196) (Al Tabbak, M, Vol.5, 1924, p. 184).

The madrasa Al Saffahiyya has many Waqfs such as soap factories, mills, hamams, lands etc (Al Ghazzi, K, Vol.2, 1991, p. 111).

The plan of madrasa Al Saffahiyya is not symmetrical. It is rectangular with not completely straight walls set, especially in the eastern exterior wall, which indicates that the madrasa is located in the middle of a residential area surrounded by buildings (The Madrasa was built later than it is surrounding).

Similar to the majority of Ayyubid madrasas, the entrance to the madrasa is located in its central axis. The axis of the madrasa places the Iwan against the prayer hall, also the mihrab on the same line.

The courtyard of madrasa is rectangular, slightly small and non-symmetrical. Probably the original wall of prayer hall was the thick wall in the back, because the thick wall gives the prayer hall a rectangular plan as the majority of Ayyubid madrasas. The prayer hall is divided to three parts and on each side of it there is a mausoleum as most madrasas in the Ayyubid period.

The wall on the eastern wings of the courtyard was built after the wall on the southern wings of courtyard because of the Qur'anic inscription extended inside the half hole in the top southern end of the eastern wall of the courtyard (Figure 4.2.15).

In addition, the existence of three graves in the past in the eastern mausoleum without similar graves in the other mausoleum is maybe to create a balance in the design of the

madrasa or it was supposed to be mausoleums, but was not used, or there could have been graves that were later removed. The cells (student's accommodation) are few and are located on the eastern wings of the madrasa. Therefore, there were probably separate buildings serving as student dorm. The external facades of the madrasa are simple, except for the main entrance façade with the muqarnas. We can conclude from the lack of windows opening to the outside that the madrasa relies on the courtyard for the lightning.

The madrasa is rich in decorative elements, especially in the minaret, which is a later reconstruction during the Ottoman period as well as the portal of the entrance and the prayer hall, where Ablaq was used. Ablaq was a common decorative element during the Mamluk period.

**Figure 4.2.4:** The main entrance of madrasa Al-Saffahiyya, Aleppo. 2010



Source: Archnet. View of entrance portal and minaret from north. October 2010.  
[https://archnet.org/sites/1816/media\\_contents/126377](https://archnet.org/sites/1816/media_contents/126377)

**Figure 4.2.5:** The inscription table, and circle Ablaq on the façade of main courtyard of madrasa Al-Saffahiyya.2015



Source: *The Syrian Association for Preservation of Archaeology and Heritage*. February 2015.

**Figure 4.2.6:** The view of northern wall of the prayer hall open to the courtyard of madrasa Al-Saffahiyya.2015



Source: *The Syrian Association for Preservation of Archaeology and Heritage. February2015.*

**Figure 4.2.7:** The middle part of prayer hall of madrasa Al-Saffahiyya.2015



Source: *The Syrian Association for Preservation of Archaeology and Heritage*. February 2015.

**Figure 4.2.8:** The Mihrab and Minbar of prayer hall of madrasa Al-Saffahiyya.



Source: *Archnet*. Interior view of prayer hall of madrasa..  
[https://archnet.org/sites/1816/media\\_contents/35740](https://archnet.org/sites/1816/media_contents/35740)

**Figure 4.2.9:** The east part of prayer hall of madrasa Al-Saffahiyya. 2015.



*Source: The Syrian Association for Preservation of Archaeology and Heritage. February 2015.*

**Figure 4.2.10:** The west part of prayer hall of madrasa Al-Saffahiyya. 2015



Source: *The Syrian Association for Preservation of Archaeology and Heritage*. February 2015.

**Figure 4.2.11:** The main iwan of madrasa Al-Saffahiyya. 2015



Source: *The Syrian Association for Preservation of Archaeology and Heritage*. February 2015.

**Figure 4.2.12:** View of interior of iwan of madrasa Al-Saffahiyya. 2015



Source: *The Syrian Association for Preservation of Archaeology and Heritage. February 2015.*

**Figure 4.2.13:** the minaret of madrasa Al-Saffahiyya. Aleppo.2010



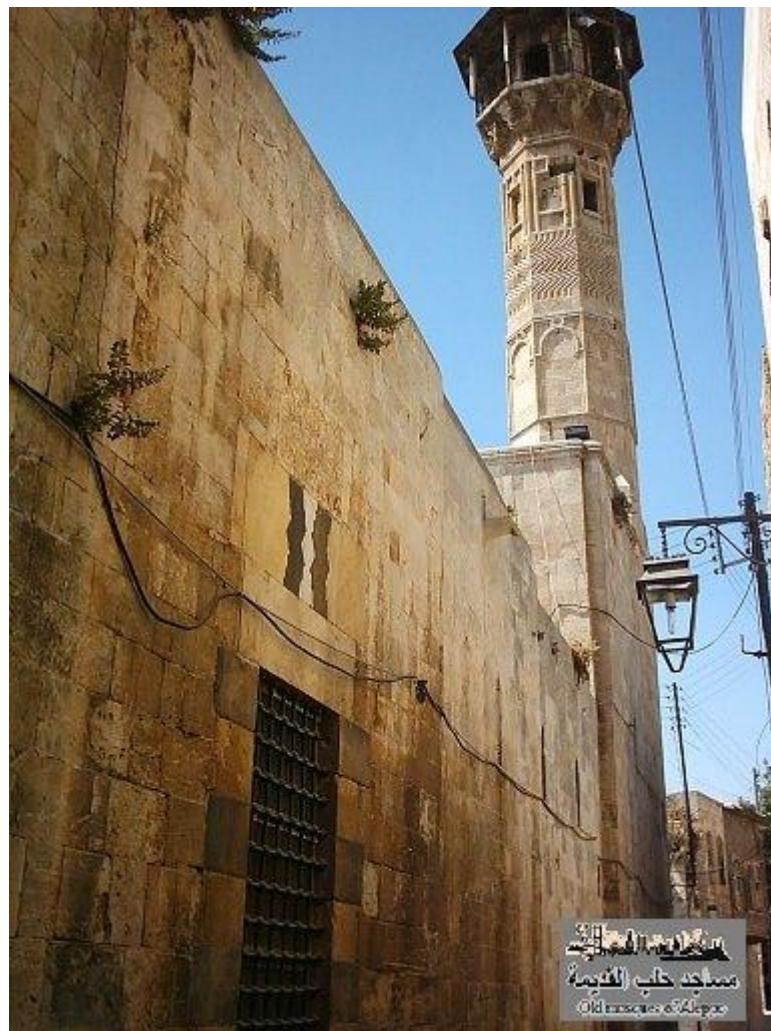
*Source: Archnet. View of minaret. October 2010  
<https://archnet.org/print/preview/mediacontents=126378&views=i>*

**Figure 4.2.14:** the northern exterior façade of madrasa Al-Saffahiyya. Aleppo.2017



Source: Saleh Zakkour, View of northern facade. February 2017.  
<https://www.facebook.com/photo.php?fbid=1867438606871581&set=pcb.1867438720204903&type=3&theater>

**Figure 4.2.15:** the eastern exterior façade of madrasa Al-Saffahiyya. Aleppo.2014



*Source: old mosques of Aleppo. East façade of madrasa Al-Saffahiyya .April 2014.  
<https://www.facebook.com/aleppomosque/photos/pcb.233734630149822/233734013483217/?type=3&theater>*

**Figure 4.2.16:** the northern interior façade of madrasa Al-Saffahiyya.



*Source: old mosques of Aleppo. Northern interior façade of madrasa Al-Saffahiyya .April 2009.*

*[https://www.youtube.com/watch?v=\\_doRB2PMGMM](https://www.youtube.com/watch?v=_doRB2PMGMM)*

**Figure 4.2.17:** the south interior façade of madrasa Al-Saffahiyya. Aleppo, 1992



*Source: monummamluk-syrie.org. Northern interior façade of madrasa Al-Saffahiyya .1992.  
<http://monummamluk-syrie.org/Images/Alep/HLB-illustrations/HLB-M-sff-ill.9.jpg>*

**Figure 4.2.18:** View of the muqarnas of the main entrance of madrasa Al-Saffahiyya. 2015



Source: *The Syrian Association for Preservation of Archaeology and Heritage. February 2015.*

**Figure 4.2.19:** View of the muqarnas of end exterior wall corner of the iwan of madrasa Al-Saffahiyya.



Source: *The Syrian Association for Preservation of Archaeology and Heritage*. February 2015.

#### **4.3 THE ARCHITECTURAL FEATURES OF ISLAMIC MADRASAS IN ALEPPO DURING THE MAMLUK PERIOD 1259-1516**

The number of madrasas built during the Mamluk period is small in comparisons with the long time of the Mamluk rule in Aleppo (257 years). This was due to the instability of the political, economic and social aspect during this period. In addition, Aleppo was not the most important city in the Empire, which was the position that Cairo enjoyed during the Mamluk period.

The Mamluk madrasas were built in the old city of Aleppo around the citadel and not far from it. Many Mamluk madrasas are considered as mosques and madrasas at the same time. Most of these madrasas were small with non-symmetrical irregular plans and walls because they were built in residential areas and were surrounded by already existing structures.

The majority of the Mamluk madrasas are small and simple; also, most of them missed -at least- one of the basic architectural elements, such as prayer hall, iwans, cells, courtyard, mausoleums, and halls. In general, most of these elements are small in Mamluk madrasas and they had rectangular or square plans.

The main entrance of most Mamluk madrasas was located on the northern or western sides of madrasas. Most of them open directly onto the courtyard, except for two madrasas Al Saffahiyya and Al Saddiyya, where the entrances open onto a passage, which leads to the courtyard. In addition, the majority of the main entrances are distinguished with high portals and are rich with decorative elements, such as Ablaq, text inscriptions and muqaranas.

The courtyards of the Mamluk madrasas are simple and small, the courtyards have rectangular plans. The courtyards are located on the center of madrasas and are surrounded with the other architectural elements such as prayer hall, cells, etc. The floors of the courtyards are paved with ordinary stones except in some madrasas such as in Al Saffahiyya madrasa, which is partially paved with Ablaq that has a geometrical design.

The prayer hall of Mamluk madrasas is located on the southern side and has a rectangular plan, with the exception of the prayer hall of Al Sahibiyya madrasa, which is the first madrasa that has a prayer hall with square plan. The majority of prayer halls are roofed with one dome in the middle. The prayer hall of each madrasa is divided to three or four or even five equal parts in most of them. Most prayer halls are not located on the same axes with iwan. In addition, there are no mausoleums on each side of the majority of prayer halls in Mamluk madrasas.

The iwans exist in only half of Mamluk madrasas that survived until today. The iwans vary in size and are not located in a specific location of the Mamluk madrasas. Moreover, the madrasas with iwans, has one or two iwans such as Al Saffahiyya, which has one big iwan located on the southern side of the madrasa. Most of the iwans are roofed with barrel vaults.

The cells exist in one-half of the Mamluk madrasas that survived until today. The cells are small and have rectangular plan, and are not located in a specific location of Mamluk

madrasas .The number of cells in madrasas that include them is relatively small, such as Al Saffahiyya, which has four cells. This is probably due to the small size of Mamluk madrasas in generally which allowed including only a few number of cells. Most cells are roofed with barrel vaults.

The halls do not exist in most Mamluk madrasas, and when they do, they are small and have a rectangular or square plan. Halls are not located in a specific location in Mamluk madrasas. In addition, some madrasas have one hall, such as Al Sahibiyya, which is roofed with a dome.

The mausoleums do not exist in Mamluk madrasas, except in Saffahiyya and Saddiyya madrasas. The mausoleums are small with a rectangular plan and are not located in a specific location in Mamluk madrasas. The mausoleum in Saffahiyya is roofed with barrel vaults, whereas a dome and a barrel vault were used to roof the mausoleum in Saddiyya. The mausoleums in Saddiyya madrasa are open to the street by two doors, which have probably appeared for the first time in Mamluk madrasas (Al Jaseer, L, 2000, p. 305). There is a lack of arcades in Mamluk madrasas, except in Al Nasiriyya (Hayyat) madrasa, which includes three arcades surrounding the courtyard from three sides (Al Jaseer, L, 2000, p. 270).

The minaret exists in some Mamluk madrasas. Some of them were rebuilt in other periods, such as the minaret of Al Saffahiyya, whereas other minarets were probably built during the Mamluk period, such as Qarnasiyya madrasas that has a simple minaret with an octagonal shape (Al Jaseer, L, 2000, p. 290).

The walls of most of Mamluk madrasa were built using medium sized and rubble small stones. The exterior walls are not high and are not rich with decorative elements. Except the façade of the portal of madrasas which is rich with decorative elements.

The domes were used in most Mamluk madrasas. Each madrasa has one or two domes. The domes are used at least in the middle part of prayer halls, except for Al Sahibiyya, where the big dome roofed the entire square prayer hall. Additionally, domes were used to roof other architectural elements in few madrasas such as the mausoleum on Al Saddiyya madrasa and the hall of the Al Sahibiyya. Most domes are based on dodecagonal or cylinder drums, whereas few are not based on a drum, such as the dome of the hall in Al Sahibiyya. The half-lobed pointed domes were located on some portals of Mamluk madrasas, such as the half-pointed muqarnas portal of Al Saffahiyya. Most domes are made of brick or stone.

Vaults were widely used in Mamluk madrasas. Barrel vaults were used in all Mamluk madrasas. They were used in the roofing of different architectural elements, such as prayer hall, passage, cells, iwans etc. In addition, barrel vaults were used for the first time the middle in the prayer halls instead of the domes in Mamluk madrasas, such as Al Saffahiyya. Cross vaults were less used and existed in some Mamluk madrasas, such as the mausoleum in Al Saffahiyya.

The columns were not used as structural elements in Mamluk madrasas, except in the arcades of Al madrasa Al Ansariyya (Al Jaseer, L, 2000, p. 272). Columns with

muqarnas capitals were used as decorative elements on the mihrab of the prayer hall of most Mamluk madrasas, such as Al Saffahiyya. Most columns are made of marble.

The pointed and segmental arches were used in all Mamluk madrasas. The pointed arches were used in different locations and the segmental arches used in certain areas of Mamluk madrasas, such as above the windows and doors that open onto the courtyards. The lobed arches used in few madrasas (Al Sahibiyya and Al Saffahiyya) where the lobed arches were located on the portal of main entrances. In addition, the lobed arch with warped edges can be seen on the portal of Al Sahibiyya madrasa. The horseshoe arches can also be found in (Al Sallahiyya madrasa) on the small windows of the eastern interior façade (Al Jaseer, L, 2000, p. 280).

The transition elements were used in most Mamluk madrasas. Most of these elements are located in the prayer halls. The transition elements include drums, squinches and pendentives.

The squinches and pendentives including triangular and muqarnas pendentives were used as transition elements from the square plan to the circular plan of the base of the dome or to the dodecagonal or circular plan of the drum of the dome. The drum itself is transition elements from dodecagonal and cylindrical to the circular plan of the base of the dome. The cylindrical drum appeared in some Mamluk madrasas, such as Al Qarnasiyya madrasa (Al Jaseer, L, 2000, p. 292).

Decorative elements were not used in a similar manner in all Mamluk madrasas; some madrasas were poor in decorative elements such as Qarnasiyya and Al Salahiyya, whereas others were rich in decorative elements such as Al Sahibiyya and Al Saffahiyya. Most decorative elements are located on the portal of the main entrances and on the mihrab of prayer hall. These elements include geometrical motifs and text inscriptions (Quranic, poetry texts, etc.) muqarnas, and Ablaq technique.

Muqarnases were used on most of the portals and on the capitals of mihrabs column of Mamluk madrasas. In some other madrasas, muqarnas were limited to certain architectural elements, such as the minaret of Al Saffahiyya madrasa and the pendentives of the prayer hall of Al Sahibiyya madrasas.

The motifs and geometrical inscriptions were located on carved panels above windows on the exterior wall of some madrasas, such as in Al Saffahiyya and Al Sahibiyya madrasas. Text inscriptions include Quranic text existed in most Mamluk madrasas.

## 5. CONCLUSION

### THE ANALYSIS OF THE DEVELOPMENT OF ARCHITECTURAL, STRUCTURAL AND DECORATIVE FEATURES OF ISLAMIC MADRASAS IN ALEPPO DURING THE ZENGID, AYYUBID AND MAMLUK PERIODS

The Islamic madrasas in Aleppo were significantly developed during the Zinged period and culminated in terms of the educational, decorative, architectural and structural aspect during the Ayyubid period. However, the Islamic madrasas in Aleppo declined in terms of the previously mentioned aspect during the Mamluk period.

According to the map, which shows all madrasas, belonging to the (Zinged, Ayyubid, and Mamluk,) periods (Figure 5.1) that survived and reserved most of its original architectural and structural elements, all Zinged madrasas were built within the (walled) city and more specifically in the western part o (between the citadel and Antakiyya gate). Four of these madrasas were built originally as mosques and only one was built as madrasa (Al Asaddiya). The majority of Zinged madrasas have irregular plans and walls because they were built within a residential area and were surrounded by already existing adjacent buildings (Figure 5.1).

The number and size of madrasas significantly increased during the Ayyubid period. Ayyubid madrasas were spread everywhere in Aleppo city, inside and outside the ancient wall of Aleppo. Most Ayyubid madrasas have regular plans and walls, as the majority of these madrasas are freestanding structure, especially those located to the south of the ancient wall of Aleppo, such as Al Firdaws, Al Zahiriyya and Al Kamiliyya madrasas (Figure 5.1).

During the Mamluk period the exact opposite was true. The number and size of madrasas remarkably decreased despite the fact that Aleppo was under the Mamluk rule for quite a long time (257 years). All Mamluk madrasas were built within the city walls, close to the citadel, more specifically to its north. The majority of Mamluk madrasas have irregular plan and walls because they were built to fit in an area with previously existing structures surrounding it (Figure 5.1). In addition, the Mamluk madrasas were considered as mosques and madrasas at the same time, which explains the appearance of the minaret as new architectural elements in madrasas during the Mamluk period.

The plans of most Zengid madrasas are irregular and are not symmetrical. However, each madrasa has most architectural spaces typical in a madrasa, such as prayer hall, iwans, cells, courtyard, mausoleums and halls. Each architectural space normally has a rectangular or a square plan. The rectangular prayer hall is divided into three parts by two arches as seen in Al Asadiyya madrasa.

The plan of the madrasa was notably developed during the Ayyubid period in comparison with the preceding Zengid madrasas. The Ayyubid madrasas have a symmetrical square or rectangular plan. Most Ayyubid madrasas include all the typical architectural spaces in a madrasa. The prayer hall in the Ayyubid madrasa is rectangular and is divided into three parts by two arches. The main development point is locating the majority of the prayer halls on the southern side of madrasas and the mausoleums

on both sides of these prayer halls. Another advancement to be mentioned regarding the positioning of the prayer hall is locating it on the same axes with the iwan that is crossing the courtyard. The arcade surrounding the courtyard was also introduced to Ayyubid madrasas in the development process.

The Ayyubid madrasa has at least one iwan. The majority of these iwans occupied the northern side of madrasa, whereas other elements such as, the cells and halls were located on the eastern and western wings of the courtyard in one or two level. In addition, the entrances, which occupied the corner of madrasa led to passage is L shaped, appeared for the first time in Ayyubid madrasas.

The plan of Islamic madrasas during the Mamluk period has receded to that of early madrasas in Aleppo during the Zengid period.

The majority of Mamluk madrasas are irregular and have non-symmetrical plans, and they miss at least one of the main architecture spaces such as cells. The size of these architectural spaces in Mamluk madrasas is smaller compared with the same spaces in Ayyubid madrasas. The majority of the prayer halls are not located on the same axes with the iwan. Some of the similarities of Mamluk madrasas with the precious period is that most prayer halls have a rectangular plan and are divided into three parts by two arches, as well as the location of the prayer halls on the southern side of the madrasas. Only a few madrasas have mausoleums in one side of prayer hall. The square plan of the prayer hall appeared for the first time in Sahibiyya madrasa with a big dome roofing this space.

The entrances of Zengid madrasas that were originally built as madrasas such as Al Asadiyya madrasa are simple with a simple door usually leading to a passage that opens onto the courtyard. On the other hand, the Ayyubid madrasas have more than one entrance in some cases and the entrance of most madrasas is a high portal that is fronted with muqarnas portal. This appeared for the first time in Ayyubid madrasas in addition, to some Ablaq decoration.

The entrance in the Mamluk period is a continuity of Ayyubid entrances. The entrance of the many Mamluk madrasas is big portal fronted with muqarnal portal, but most entrances are open directly to the courtyard of madrasa without the passage present in the Ayyubid case. Most Mamluk madrasas has one entrance. Therefore, and in comparison with the Ayyubid period, the entrances in some Mamluk madrasas are even more advanced on the decorative level.

The Zengid madrasa's courtyard is simple with a rectangular or a square plan. It includes a well and a rectangular or a square modest pool and the floor is paved with normal stone. Whereas the courtyard in most Ayyubid madrasas are bigger also with a rectangular or a square plan, and some madrasas have more than one courtyard. The pool in Ayyubid madrasas varied in shape: square, rectangular and octagonal. The courtyard of some madrasas was paved with black and yellowish stripes that have a geometrical design.

The courtyards of Mamluk madrasas are smaller than those in the Ayyubid period and have rectangular or square plans. Some madrasas are without a pool. The black and

yellowish stripes with a geometrical design were still in use to pave part of courtyards in some Mamluk madrasas.

The iwans did not have a designated location of the plan during the Zengid period. The iwan was a separated element and it is normally opened to the courtyard with a pointed arch. On the contrary, the iwans were extensively developed in size, number and even in location during the Ayyubid period. The size of the iwans is bigger and most of them have a designated location in the madrasa plan, typically located on the northern side of madrasa and facing the prayer hall. The iwan was located on the same axes with prayer hall crossing the courtyard and some madrasas had more than one iwan.

The iwan was in general a main element of the Ayyubid madrasa. In Mamluk madrasas, however, this was not the case, and some madrasas have no iwans. The Mamluk iwan also lost the designated location in the madrasa and the size is different from one madrasa to the other. This is a draw back in design compared with the early Aleppo madrasas, except for a few madrasas such as Al Saffahiyah, which has a big iwan located on the northern side and facing the prayer hall.

The cells (accommodation of student) exist in most of madrasas from the Zengid period; the cells are small with a rectangular or a square plan. The cells do not have a specific location in Zengid madrasa except in Asaddiya madrasa, where the cells occupy the wings of the plan madrasa (northern and southern sides). Each cell normally has one door and one window open into the courtyard.

The cells are an integral part of Ayyubid madrasas, with the exception of some madrasas that have absolutely no cells, which probably due to having separate dorm building. The cells have a rectangular or a square plan. The number of cells has increased during the Ayyubid period because of the increase of the madrasa size in general. The cells are located on the eastern and western sides of madrasa, and they have one window and a door that are open to the courtyard or the arcade. The cells in some madrasas are located on two floor levels. A significant fall back in cells' design is seen in the Mamluk period in comparison with the Ayyubid madrasas, where the cells are small also with a rectangular or a square plan. Some madrasas even miss this element, which is probably due to the small size of Mamluk madrasas as well as the dual function of the building (mosque and madrasa), as accommodation rooms may disturb the prayer. In addition, the cells have no specific location in Mamluk madrasas.

The halls in Zengid madrasa are medium sized with a rectangular or a square plan. They were probably used for teaching and they do not occupy a specific area in the madrasa. The halls were notably developed during the Ayyubid period especially in size. The halls have nospecific location in Ayyubid madrasas. In madrasas that have cells the halls are located close to the corner of the madrasa, whereas in madrasas were cells are absent, the halls are located on the eastern and western wings of the plan.

As the other mentioned elements halls in Mamluk madrasas decreased in size and some madrasas, do not include any halls. The halls have rectangular or square plan without a specific designated location in the plan design.

The mausoleums were an essential element of most Zengid madrasas. Mausoleums are small with a rectangular or square plan. The mausoleums are usually attached to the

prayer hall and are accessed from it. In the Ayyubid period, the mausoleums are bigger and present in all Ayyubid madrasas. Most mausoleums were located on the southern side of madrasas on one or two sides of the prayer hall.

The majority of Mamluk madrasas are without mausoleums. The exception are madrasas that include one mausoleum.

The arcades were probably developed in the Ayyubid madrasas, as they were not detected in any Zengid madrasa. The arcade surrounds the courtyard from one, two, or three sides in the arcades can also be on one or two levels such as in Al Firdaws madrasa. The arcades are fronted with pointed arches carried by columns. Most columns have muqarnas or Corinth capitals; the latter was seen for the first time in Firdaws. The arcades are once again absent from Mamluk madrasas, probably because of the smaller size of madrasa in general.

Madrasas have been developed during the Zengid period on the architectural level and they reached a zenith during the Ayyubid period, with a significant fall back in the Mamluk period.

The domes were used as a roofing system in the Zengid madrasa. Each madrasa has one dome located on the middle part of the prayer hall. Some domes were based on a polygon drum such as the pointed dome in Asadiyya, which was based on a dodecagonal drum, whereas others were not based on drums. The domes have also been developed during the Ayyubid period, the size was bigger, and the number of domes has increased in Ayyubid madrasas. The majority of madrasas have more than one dome. Firdaws for example, has eleven domes those domes roofing the prayer hall, mausoleums and sides halls. Most domes are located on the southern side of the plan. The half pointed domes have also appeared on the portal of Ayyubid madrasas.

The number of domes in Mamluk madrasas has decreased in comparison with that of the Ayyubid. Most madrasas have one dome and most of them are located on the southern side of madrasa roofing the prayer hall. The majority of domes are based on polygon or cylinder drum. The half-pointed domes that roofed the portal of madrasas were still used during the Mamluk period.

Barrel vaults were the most common vaults in Zengid madrasas.. The barrel vaults roofed some architectural spaces, such as the iwan and the two sides of prayer hall. The cross vaults have probably not been used in that period.

In the Ayyubid period cross and barrel vaults were widely. The mitered vault has probably appeared for the first time in the northern interior iwan of the Firdaws madrasa. Barrel vaults were used in all madrasas whereas cross vaults were less frequent.

Barrel vaults were widely used during the Mamluk period as well. They have been used in all Mamluk madrasas and they roofed different architectural spaces including the prayer hall, passage cells etc. In addition, barrel vault was used to roof the middle part of prayer hall as a substitute of the dome during the Mamluk period, as in Al Saffahiyya madrasa. Cross vaults were less frequent in this period as well.

The pointed arches are seen everywhere in Zengid madrasas, especially in iwans mihrabs, prayer hall, etc. whereas the segmental arches were mostly located above the small doors in the walls surrounding courtyards(halls, cells etc) and on the windows, which opens onto the courtyard madrasas and the outside street. The pointed trefoil arches are found in Al maqdumiyya madrasa (Osman, N, 1992, p. 175).

The pointed and segmental arches were the most common arches during the Ayyubid period. The pointed arches were used almost everywhere in Ayyubid madrasas, whereas the segmental arches were used above the interior and exterior windows, also above the small sized doors. The lobed pointed arches were used during this period and were located on the portal of the main entrances in Ayyubid madrasas (usually take the shape from muqarnas that bordered it). The horseshoe arch type is found in Al Shazbaktiyya madrasa (Al Jaseer, L, 2000, p. 171).

The arches in the Mamluk period were a continuity of those of the Ayyubid period. The pointed arches were widely used during the Mamluk period. As in Ayyubid and Zengid periods the pointed arches are found everywhere in Mamluk madrasas, whereas the segmental arches are used above small doors and windows (interior and exterior). The lobed pointed arches were used during that period. These arches are located on the portal of main entrances of some Mamluk madrasas, in addition the horseshoe arches are found on small windows in Al Sallahiyya madrasa (Al Jaseer, L, 2000, p. 280) and the lobed arch with warp edges was used in the portal of Al Sahibiyya madrasa.

The columns were limited in use in the Zengid period and they started to be common in the Ayyubid period. The columns were located on most arcades of the Ayyubid madrasas, and on the mihrab of the prayer hall of most Ayyubid madrasas (two columns).

The majority of columns are made of marble; they have muqarnas and Corinthian capitals. In addition, the composite columns (columns with double capitals) are seen for the first time in Firdaws madrasa.

The use of columns has also declined during the Mamluk period. The columns can be found on the mihrab of the prayer halls of most Mamluk madrasas. Except for one madrasa, Al Ansariyya where the columns have fronted the arcades that surrounded the courtyard (Al Jaseer, L, 2000, p. 270). The majority of columns are made of marble. All the mihrab columns from the three periodshave a decorative function, whereas the arcades columns have a structural one.

The transition elements including the drum and pendentives were used in the Zengid madrasas. These elements are located in the prayer halls. The pendentives were used as transition element from the square plan of prayer hall to the circular plan of the base of the dome or to the polygonal plan (dodecagonal) of the drum of the dome. The drum itself is considered as a transition element from polygonal plan to the circular plan of the base of the dome, such as on the drum of the middle part of prayer hall of madrasa Al Asadiyya.

The transition elements were located in different areas of the Ayyubid madrasa and not just in the prayer hall. The squinches, pendentives and drums were the most common transition elements during that period. Pendentives (triangular and muqarnas) and

squinches (muqarnas) were used as transition element from the square plan to the circular plan of the base of the dome or to the polygonal plan (dodecagonal and octagonal) of the drum of the dome. In addition, the durum is a transition element from dodecagonal and octagonal plans to the circular plan of the base of the dome.

Similar to the Zengid period the transition elements went back to being used solely in the prayer hall in the Mamluk period. The most common elements during this period were drums and pendentives. The cylindrical drum appeared for the first time in Mamluk madrasas, such as the drum of dome Al Qarnasiyya madrasa (Al Jaseer, L, 2000, p. 292).

Zengid madrasas are plain and poor in decorative elements; most decorative elements were located on the façade of the main entrance of Zengid madrasas. These decorations included text inspiration, motifs and muqarnas. The Ayyubid madrasas, however, are rich in decorative elements located in different spaces, especially on the portal of the main entrance and the mihrab of the prayer hall of Ayyubid madrasas. These elements include text inscriptions (foundation, Quranic, poetry texts, etc.) located mostly on the façade of portal of the main entrance. Some Ayyubid madrasa such as Al Firdaws have decorations on the mihrab as well as embellishment on the interior façades of madrasa. The muqarnas were extensively used in Ayyubid madrasas, on the portal of the main entrance of most of madrasas, on the capital of the columns (arcades and mihrab) and on the pendentives of some Ayyubid madrasas. The Corinthian capitals were used in some madrasas such as in Al Firdaws.

The geometrical engravings with a star shape were limited to the Ayyubid madrasas. These engravings were located mostly on the portal and the mihrab. In addition, the Ayyubid madrasas included overlapping colourful marble stripes, which appeared in the mihrab of Firdaws for example.

The Ablaq system started to be implemented in some Ayyubid madrasas. This system appeared for the first time on the façade of the portal of the main entrance of madrasas Kamiliyya as well as the courtyard of some Ayyubid madrasas.

The pools are present in the courtyards of some of Ayyubid madrasas. The pool is usually located in the center of the courtyard and has a polygon plan (square, rectangular and octagonal).

The decorative elements during the Mamluk period were an extension of those in the Ayyubid period; the main difference being that not all Mamluk madrasas were rich in decorations, whereas all the Ayyubid madrasas were distinguished with abundant decorations.

Decorative elements were located in different areas of Mamluk madrasas, especially in the portal of the main entrance of most Mamluk madrasas, where these elements were extensively used as well as in the prayer halls.

These elements include text inscriptions with Quranic and normal texts, located on the façade of the main portal of madrasa and above the mihrabs, such as on the portal and mihrab of the Al Sahibiyya madrasa. Muqarnas were used in most of Mamluk madrasas,

and were located on the minarets, portals of madrasa, and on the columns' capitals of mihrabs, such as on the Saffahiyya madrasa.

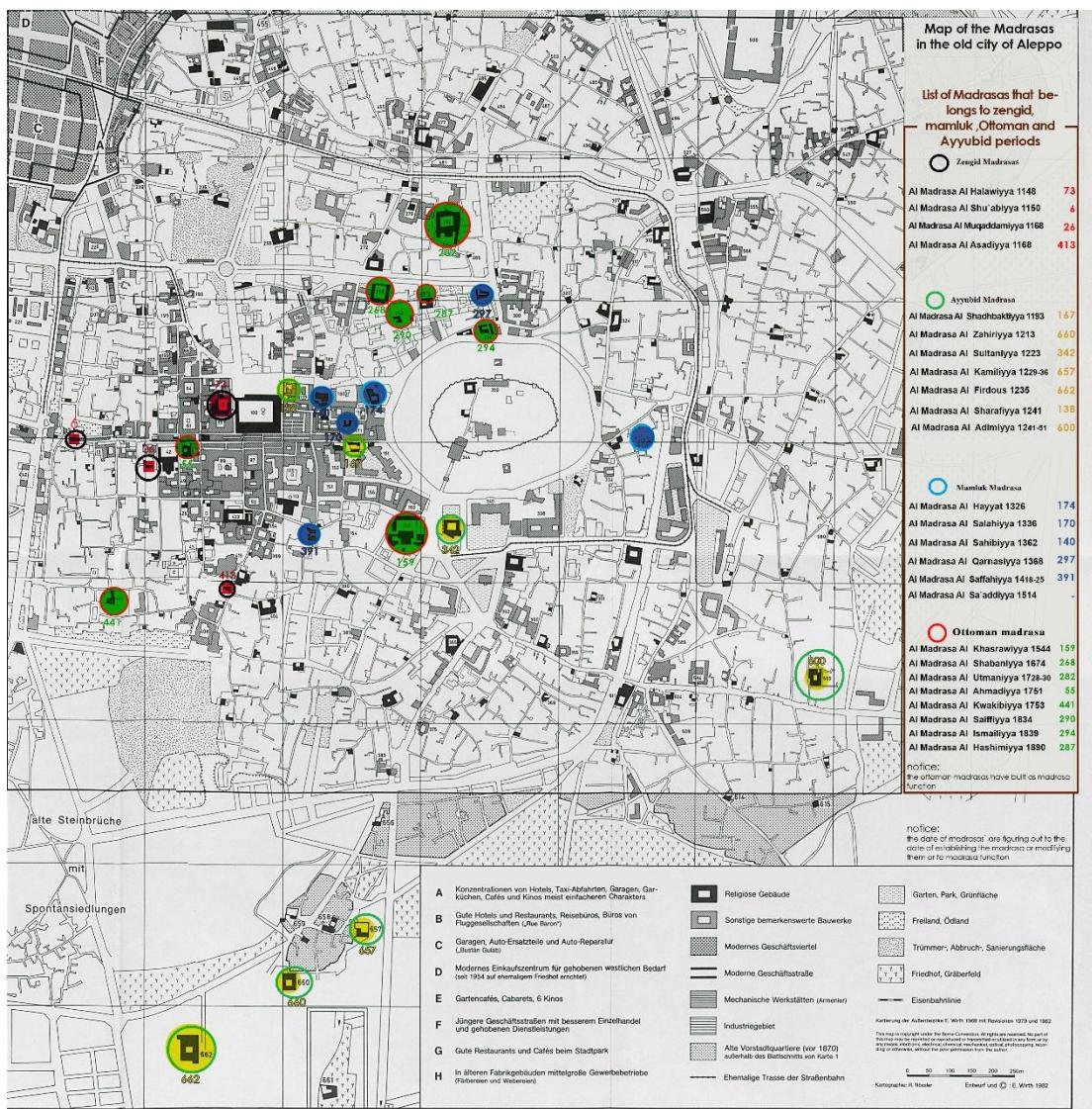
The geometrical inscriptions used during the Mamluk period in some madrasas, were located on carved plaques above the windows on the exterior wall of madrasas as well as motifs inscriptions. Motifs were also located on the portal and mihrab of some madrasas such as Al Sahibiyya madrasa.

Ablaq was widely used on the portal of the main entrance in some of Mamluk madrasas. Ablaq also surrounded the windows of the exterior facades and the Ablaq was used for the first time in the prayer hall in Saffahiyya madrasa. In addition, Ablaq was used to pave parts of the courtyard of Saffahiyya madrasa.

As a conclusion of my study, I found that the Ayyubid madrasas were the zenith of the Islamic Madrasas in Aleppo (architectural, decorative elements and structural wise), due to the political, economic and social stability the city enjoyed during this period, when it was considered one of the most important cities of the empire.

In comparison, Aleppo was on the frontiers of conflict during the Zengid period and was overshadowed by Cairo during the Mamluk period.

Figure 5.1: location of Aleppo madrasas during Zinged, Ayyubid, Mamluk, and Ottoman periods



Source: Gaube-Wirth\_Kartenlegenden, modified by Mouhanad Aboudan.

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