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ARCHITECTURE

THE EVOLUTION OF ARCHITECTURE AND URBAN PATTERNS IN THE CITY OF DAMASCUS

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The urban pattern is a mirror reflecting the civilized level of society in general and the interplay of local and non-local architectural elements with the architectural techniques used. The city of Damascus has ancient architecture styles with distinctive architectural characteristics that can be used in the modern architecture to achieve artistic, expressive and environmental sustainability that suits the spatial characteristics of the city of Damascus and harmonize with the intellectual, religious and social visions of the inhabitants. Damascus has been rich for thousands of years, and has not been interrupted or exposed to urban and demographic emptiness, despite the invasions, wars and disturbances. Every population wave that controlled Damascus tried to impose its culture and distinctive urban pattern, but some architectural elements have remained connected to the environment and to the unified culture throughout history.

Keywords: *Geographical Basin, Geological Structure, Damascus Urban Style, Architectural Elements, Mount Qasioun, Agora Square, Corinthian Style, Jupiter Temple, Umayyad Mosque, Seljuks, Mamluks, Tatars, Ottomans, Old City of Damascus, Al-Hamidiyah Souq*

Introduction

The study of patterns of architectural development is important, because it shows that the characteristics of the architectural style are related to a range of influencing factors, such as religious beliefs, social status, economic capacity and prevailing security situation.

Thus, the urban pattern reflects the cultural level of society in general and the interplay of local and non-local architectural elements with the architectural techniques used. The development or change reviews the city's history and evolution So that the period of prosperity can be linked to a better use of architectural elements and to show them more externally than during the period of unrest and the decline status of the city.

Research Problem

The City of Damascus has distinctive architectural features within its ancient architecture styles, these features can be used in the modern architecture to achieve artistic, expressive and environmental sustainability that suits the spatial characteristics of the city of Damascus and harmonize with the intellectual, religious and social visions of the inhabitants. Therefore, it has not given enough attention to the architects' attention to this matter, which deserves our attention to the architectural style, which carries the characteristics of originality and takes into account the needs and requirements of modernity of great importance in sustainability, which is necessary for identity and belonging to history and geography.

Research Goal

This research aims to trace the changes of architecture and urban patterns throughout history, and to identify the factors affecting these changes, and to show the architectural elements that have changed, and the role of social, ideological and security factors in the urban pattern. And the orientation towards the

potential of using architectural elements that are sustainable in order to preserve the Damascene architectural identity.

Methodology

- History Approach is used to study and analyse the evolution of architectural styles in the city of Damascus.
- Analytical Approach is used to monitor and identify the architectural elements used from the Greek architectural style to the current era in addition to linking the impact of security conditions and economic and social conditions with the urban pattern and land uses within the city.

Location of the City of Damascus

Damascus is located in a flat geographic basin surrounded by mountains to the north, east and west, and some high mountains to the south. The area of the basin is estimated to be about 3600 km^2 , while the area of the city within its administrative boundaries is about 118 km^2 and it consists of three distinctive areas (fig.1):

The First Area is estimated to be about 33 km^2 and it includes Qasioun and Al-Mezzeh mountains, and it is located to the north and west of the city where urbanization has reached. The Barada River separates the two mountains, which runs through the area from west to east, and it is located to the north and northwest of the city.

The Second Area is estimated to be about 48 km^2 , in the form of an agricultural plain located in the northwestern part (Western Ghouta).

The Third Area is estimated to be about 37 km^2 and includes most of the city's neighborhoods in addition to the Old City, squares and gardens.

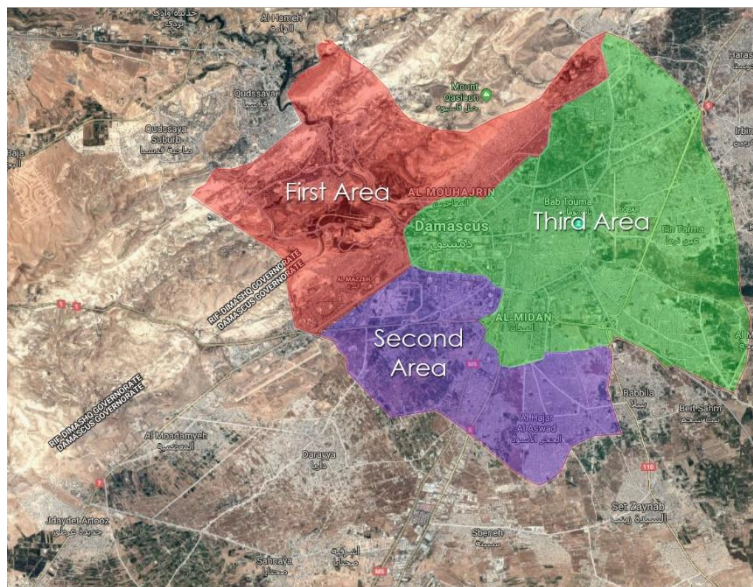


Fig. 1. Areas of the City of Damascus

Geological Structure and Surface Appearance

The Damascus basin -which Damascus is a part of- was formed in the third time (Pliocene era). The area is surrounded by old lava in the south and east during the same period; it is composed of deposits dating back to the fourth time in the form of the Gilgamesh mound, near the mountainous slopes and at the exits of the torrents as in the Rabwa gorge. The problem is that solid areas and soft areas have not been identified and

their suitability for construction determined. Therefore, there have been incidents of collapse in the foothills of Mount Qasioun and in Mezzeh [1]. The following geological formations can be observed in the Damascus basin (fig. 2):

Second Time Formations (Upper Cretaceous): It is the oldest rocks in the Damascus basin. It occupies large areas in Mount Qasioun and is composed of dolomitic limestone rocks. The cracks in it are frequent due to the tectonic movements that hit the region.

Third Time Formations (Paleogene): The Paleogene formation appears on the slopes of Mount Qasioun and then disappears under the quadrangular projections. While Neogene depositions are volcanic eruptions on the edge of the basin in the south and east.

Fourth Time Formations: The quaternary formations spread over the entire surface of the Damascus basin in two forms: alluvial cones and colluvial, low-lying plains, which formed the large agricultural plain called the eastern and the western Ghouta, at the east and west of the city Damascus [1].

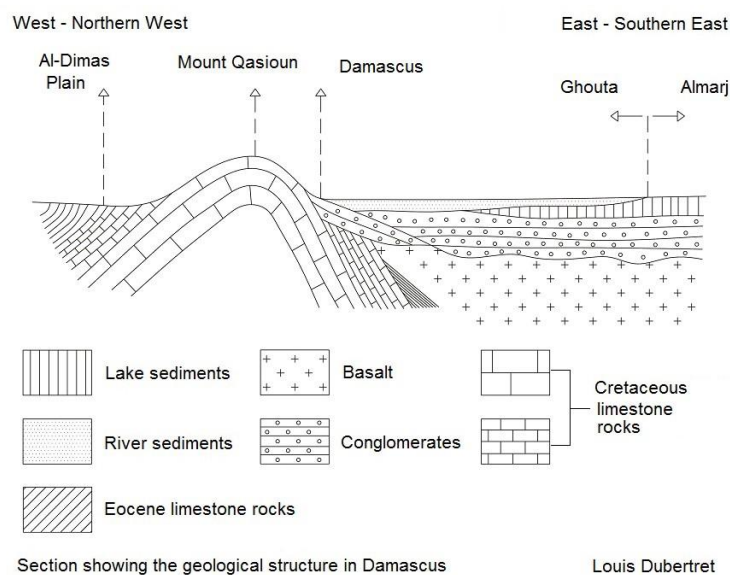


Fig. 2. Section in the geological structure of Damascus basin. Source: Louis Dubertret. (Digitally drawn by researcher Mazen Said)

Historical Development of Damascus City

The name “Damascus” in the Aramaic language is: “Dremsk” or “Darmesouk” which means flowering land and beautiful garden; this is due to its land consisting of orchards and dense fruit trees. Some return its name to Damascus, the son of Aram, the son of Sam, the son of Noah [2].

The city of Damascus has emerged in its current position due to several reasons:

- The presence of fertile agricultural land.
- Availability of water.
- Its location on the roads between south and north of Syria.

The center of the Aramaic city of Damascus was a small hill rising about five to six meters from its side in the heart of the Old City (fig. 3), where the Temple of the Syrian God was built (Hadad) god of weather, hurricanes, storms, thunder and rain. Then the Roman temple of Jupiter was later built in that location, and it was discovered next to the northern wall of the Great Umayyad Mosque. Damascus stood against of the Assyrian encampment in the 6th century BC thanks to its protective walls. The main building

material was clay, where the wall was interwoven with wood (poplar wood from the valley of Barada river and Ghouta), then clay dipped into the hay (the remnants of the wheat spikes) where that shows how small buildings were shaped into cubes while the large buildings were formed of stone and clay together [2].

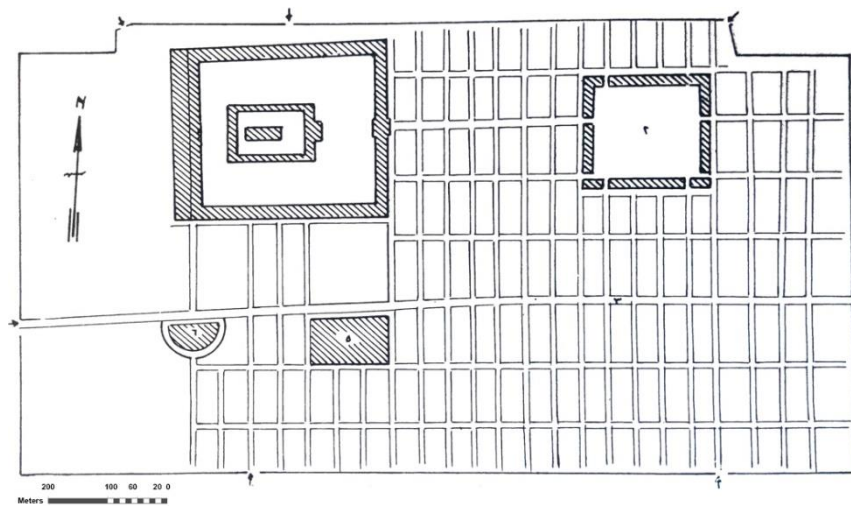


Fig. 3. Old Damascus Map in Roman era

The Baniyas canal provided the major part of the city with water. Damascus was characterized during the second millennium and the first millennium BC by important industries brought to it a regional status such as textile industries and the extraction of oils and wines and various agricultural tools and weapons like swords and arrows, vehicles and others. It was an important trade station between North and South of Syria, and between Assyria and the Egyptian, and between the Syrian Badia and the Arabian Peninsula. Therefore, the development of city of Damascus in antiquity is not very different from the later stages, where the location, trade, agriculture and industry all played a major role in the growth of the city and its transformation into a political capital that attracted large numbers of the population, where they settled and improved their economic, security, cultural and religious functions. Commensurate with these functions [3].

A large rectangular wall around the city was built in the Roman way in the fortification, with a length of 1500 meters and a width of 750 meters straight, except for the northern side, which is the river side. Seven doors were built in the wall fence: one in the east and one in the west, where they face each other in the straight street, two in the south and three in the north [4]. The Al Qanawat canal was dug then, which became the source of water for 75% of the city's population. In this period, the great temple was rebuilt in the center of the city (fig. 4, 5).

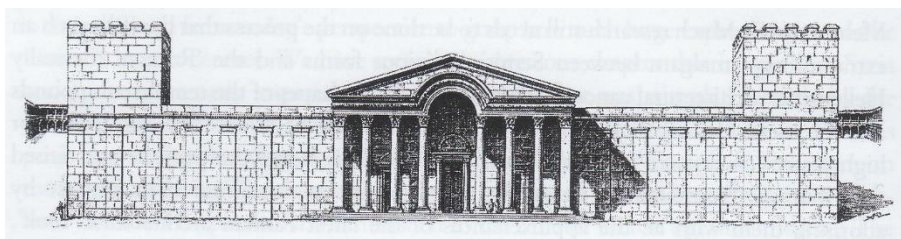


Fig. 4. The Jupiter Temple Elevation



Fig. 5. The ruins of Roman temple of Jupiter in Damascus

Surrounded by two walls. The first wall, the outer one, is called the sanctuary of the god, and it is known as the refuge. Its dimensions are 360 *meters* x 310 *meters*. The temple and the priests' quarters are inside. The second wall (interior) surrounds the temple with dimensions of 160 *meters* x 100 *meters*, where there are huge columns and a circular arcade and large doors. The Holy Temple was called (Cella or Naos), which is the treasure of the god, in front of it lie the altar and the ablution basin, all of which were built of Corinthian-carved stone [5]. The width of the straight street in this period increased to about 25,5 *meters*, of which 12 *meters* were paved with stones and the rest were paved sidewalks and behind them the shops were adjacent to each other. This street is intersected with three main streets. At these intersections, three huge arches were built. The most beautiful buildings were constructed at the end of the second century and the beginning of the third century AD, during the reign of Emperor Septimus Severus and the Emperor Karakala, Damascus became one of the most beautiful cities in the East.

The Muslims entered Damascus in September 635 AD, and it became the capital of the Umayyad state in 656 AD. From this time on, the city took on its political, scientific, cultural, economic and religious role. The Caliph Muawiya established the emirate's house and the Green Palace. In 705, he began the construction of the Great Umayyad Mosque (the Great Mosque of Damascus) by order of Caliph Al-Walid Bin Abdul Malik (fig. 6).



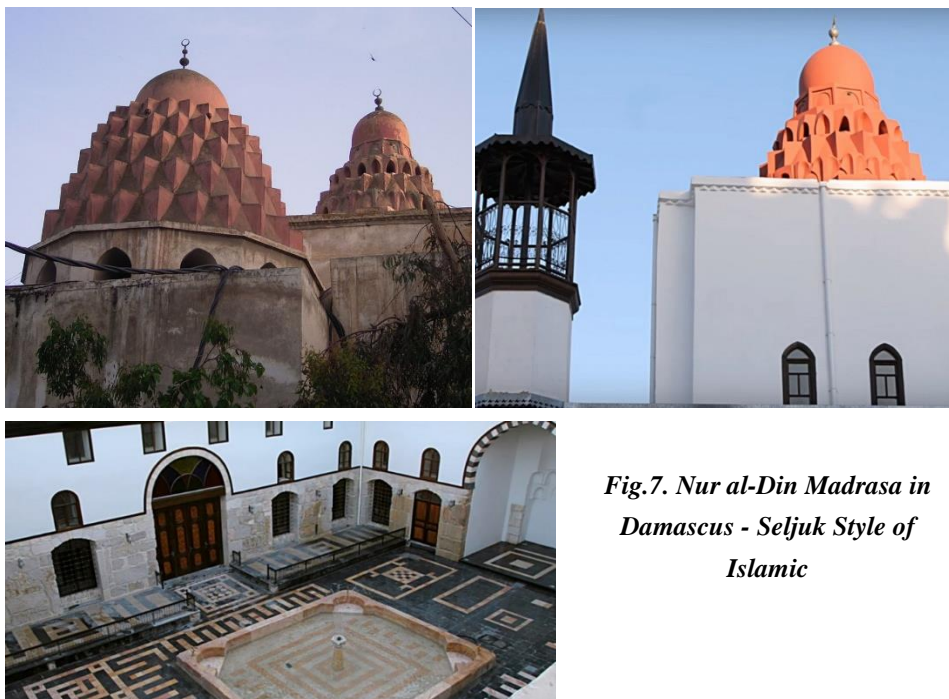
Fig. 6. Umayyad Mosque in the city of Damascus

The construction continued for ten years at a cost of half a million golden dinars. The dimensions of the mosque are: 157 meters length, 97 meters width and 45 meters height, with three minarets, and the ceiling is set in the form of gable and oversees an area of 5200 square meters. It is the fourth mosque in the Islamic world and one of its architectural marvels (after the Great Mosque of Mecca, Al-Masjid an-Nabawi and Al-Aqsa Mosque). It was decorated by 100 Byzantine and Islamic artists from Iran and India. It used colorful mosaics, stained glass, marble and sandalwood. Inside it is the tomb of John the Baptist, this confirms religious tolerance in Damascus [1].

In the Umayyad period many large buildings were built, such as baths, hospitals and caesareas (it is a large structure that includes a market for a profession similar to commercial). The irrigation canal, known as Yazid to the left of the river, was built to provide water to as much of agricultural land as possible. With the transition of the Caliphate to Iraq, the role of Damascus has regressed significantly, especially in the political and economic levels. Many large buildings have been destroyed, such as castles and walls, and during the Abbasid caliphate [3].

The city has gone through rebellions and disobedience from many injustices, taxes and attacks even from the Bedouin, this situation led to forming professional organizations where every occupation is headed by a person capable of protection and organization, however, this has evolved into a city dominated by thugs and influential, where each neighborhood is separated from the other by a gate that closes in the evening and opens in the morning, as if each neighborhood was a small city with its own mosque, market, sheikh, judges and police [6].

In 1076, the city was dominated by the Seljuk led by Nur al-Din Zanki, and it lasted until 1260 when the Mongols entered it. In this period the city of Damascus has become the capital of the Ayyubid state, it flourished and developed quickly where agriculture, industry, commerce and all crafts that serve people inside and outside the city have flourished, in addition to securing the needs of preparing armies and setting up camps to fight the Crusades. The city was known for its remarkable renaissance, where its remains are still present now days. Large schools were built to teach people religion and sciences, one example of these schools in Seljuk period is Nur al-Din Madrasa (fig.7).



*Fig.7. Nur al-Din Madrasa in
Damascus - Seljuk Style of
Islamic*

With the development of the commercial movement, the markets have expanded to as many as 139 markets. This revival was accompanied by an active urban movement at all levels, such as castles, beautiful buildings, schools, institutes for poor people, specialized hospitals, mosques and gardens. Education was free as well as treatment for patients [7]. The urban expansion began outside the wall of the city to the west, such as the Palace of Prince Al - Zahir Baybars (Al-Ablaq Palace), which was replaced by the Tekkiye Mosque, one of the most beautiful archaeological buildings in Damascus (fig. 8).



Fig. 8. Tekkiye Mosque in Damascus

The Mongols entered Damascus in 1260 AD, and destroyed some of its buildings, such as schools and palaces, but they were defeated. Then Damascus and other Syrian cities became part of a large state that included Egypt and Syria. Damascus has remained unstable, but the city has flourished economically and urbanly. The Mamluks took care of their palaces, mosques and tombs, where we find square-shaped minarets, balconies and porches, but with the arrival of the Tartars and the conquest of Timur in 1400 AD, who corrupted the city of and killed many people, where walls and towers were built from their heads. Then he sent skilled workers and craftsmen from Damascus to Samarkand for permanent residence, leading to a decline in economic, social, cultural and urban life in the city [8, 9].

The Ottoman colonization entered Damascus in 1516 AD, where Damascus and most of the Syrian cities remained neglected for a period of time but soon rose again when they became the starting point for the Shami pilgrimage, which includes the countries of Turk and beyond, as well as the Levant. Therefore, the movement of merchant caravans has developed between the North, South and East, which has led to economic and urban movement of development and prosperity [9]. During the Ottoman colonial period (fig. 9).



Fig. 9. A service building from the Ottoman period

The houses have been overcrowded on each other, especially in the area of poor and the general public. At this stage, mosques were built with semicircular minarets that end in a tapered wax-like form as in Istanbul. Al-Hamidiyah Souq was built in 1780, and it is considered to be the most important and beautiful market in the Levant, as described by the Europeans, it is not only a market but a landmark in its beautiful columns and shops [10], which has the variety and complementarity of products and goods. In the mid-19th century, the Egyptian influence (entrance of Ibrahim Pasha) played a clear role in urban expansion and the construction of some large markets such as Midhat Pasha Souq, this influence also played a role in localization of immigrants coming from the Greek island of Crete, and the construction of new neighborhood dedicated for them, and it is known as Al-Mouhajrin, which is an extension of Al-Salihiyah district on the slopes of Mount Qasioun, where the beautiful view and the spacious spaces [11].

With the beginning of French colonization, the city was rapidly expanding, and some French people settled in the city. The southern ditch of the Damascus Citadel was blocked, which was in the middle of Al-Hamidiyah Street, with its high and beautiful roof, extends from Nasr Street to Umayyad Mosque, where the columns of Jupiter Temple are located [4]. During the 1920s all the spaces were restored, namely, the spaces between the neighborhoods, with modern buildings in areas such as Arnous, the White Bridge and the Italian district, therefore, the city's character became European in construction, streets, squares, parks and new shops which they are different than the concept of old markets (fig. 10).



Fig.10. Map showing the Old City to the right and the European city style next to it to the left

Then residents began to mingle in their settlement and in their work without regard to religious, sectarian and ethnic roots, thus, forming the city's contemporary society we know today. Then followed the construction of hotels, hospitals, schools and government buildings which taken the form of a new city that has arisen next to the Old City. The urban movement increased with the arrival of refugees from the Armenian brethren and established their own small neighborhood near Bab Sharqi. In the mid-thirties of the twentieth century the city of Damascus consists of the following areas:

1. The Old City.
2. Al-Midan district with a length of 3 km and a width of 1 km.
3. Al-Salihiyah, Martyrs, Arnous districts, which are connected with each other, with length of 1,5 km and width of 1 km.
4. Al-Mouhajrin, 1,3 km length and 500 meters width.

5. Al-Qassaa, 1 km length and of 1 km width.
6. Kurds, 1 km length and 400 meters width.

The Development of Architectural Features in the City Of Damascus

We have noticed through the monitoring and follow-up of urban development in the city of Damascus, how the Damascene house was designed to provide housing and comfort suitable for residents, and that this building took into account the local environmental characteristics such as heat preservation by connecting houses with each other, and also through the quality of materials used in construction such as stone, clay, wood, etc., these materials correspond to the function required of them, and with the change of architecture through the historical stages that passed through the city of Damascus, yet some constants remained and continued, for example finding a shade in the streets, achieving security of the city through gates and walls. Some of these elements can be utilized in modern architecture to remain an integral basic construction function.

Conclusion

At the end of this research we conclude the following:

1. The city of Damascus has remained for thousands of years and did not suffer from urban interruptions or the lack of architecture despite the invasions, wars and disturbances in the city.
2. Every population wave tried to dominate and controlled Damascus to impose its culture and distinctive urban style, such as the Greeks, Romans, Umayyad, Mamluks, Ottomans and French, but some architectural elements remained connected to the environment and unified culture throughout history.
3. The Mamluks and Seljuks period witnessed a state of renaissance, the remains of which still exist.
4. Religious buildings (mosques and churches) are the most buildings that have maintained the urban style on which it was built, and this shows the role of the religious side in the culture and life of the Damascene people.
5. The city of Damascus has been maintained, with its large service-oriented buildings such as hospitals, schools, markets and shops.
6. The period of French colonization was characterized by the rapid urban expansion in Damascus outside the Old City, and gained the status of contemporary city. The modern society of Damascus was turned into a society without isolation, where people became connected on the basis of interest, craft and neighborhood.

ԴԱՄԱՍԿՈՍ ՔԱՂԱՔԻ ՃԱՐՏԱՐԱՊԵՏԱԿԱՆ ԵՎ ՔԱՂԱՔԱՇԻՆԱԿԱՆ ՕՐԻՆԱԿՆԵՐԻ ԷՎՈԼՅՈՒՑԻԱՆ

Դամասկոսն ունի յուրահատուկ ճարտարապետական հատկանիշներով հին ճարտարապետական ոճեր, որոնք կիրառվում են ժամանակակից ճարտարապետության մեջ՝ հասնելով գեղարվեստական, արտահայտչական և բնապահպանական կայունության, որը համահունչ է Դամասկոսի տարածական բնութագրերին և ներդաշնակ է բնակչության մտավոր, կրոնական և սոցիալական գաղափարներին: Դամասկոսը հարուստ է եղել հազարավոր տարիների ընթացքում և չի ավերվել կամ ենթարկվել քաղաքաշինական և ժողովրդագրական դատարկության, չնայած արշավանքներին, պատերազմներին և անկարգություններին: Բնակչության յուրաքանչյուր ալիք, որը հսկել է Դամասկոսը, փորձել է պարտադրել իր

վշակույթը և քաղաքային զարգացման յուրահատուկ օրինակը, սակայն պատմության ընթացքում որոշ ճարտարապետական տարրեր մնացել են կապված միջավայրին և միասնական վշակույթին:

Առանցքային բառեր. աշխարհագրական ավազան, երկրաբանական կառուցվածք, Դամասկոսի քաղաքաշինական ոճ, ճարտարապետական տարրեր, Կասիյուն լեռ, Ազորա հրապարակ, կորինֆիական ոճ, Յուպիտերի տաճար, Օմայանների մզկիթ, սելջուկներ, մամլուքներ, թաթարներ, օսմաններ, Հին Դամասկոս, Ալ Համիդիյահ սուր

ЭВОЛЮЦИЯ АРХИТЕКТУРНЫХ И ГРАДОСТРОИТЕЛЬНЫХ ПРИМЕРОВ ГОРОДА ДАМАСК

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Дамаск имеет старые архитектурные стили с уникальными архитектурными признаками, которые используются в современной архитектуре, достигая художественной, выразительной и экологической устойчивости, что соответствует пространственным характеристикам и гармонично с интеллектуальными, религиозными и социальными идеями населения Дамаска. Дамаск был богат на протяжении тысячелетий и, несмотря на вторжения, войны и беспорядки, не был разрушен или подвергнут градостроительному и демографическому опустошению. Каждая волна популяции, которая управляла Дамаском, пыталась навязать свою культуру и уникальный пример городского развития, но в течение истории некоторые архитектурные элементы остались привязаны к окружающей среде и единой культуре.

Ключевые слова. географический бассейн, геологическая структура, градостроительный стиль Дамаска, архитектурные элементы, гора Касьюн, площадь Агора, коринфский стиль, храм Юпитера, Мечеть Омейядов, сельджуки, мамлуки, татары, османы, Старый Дамаск, Аль-Хамидия Сук

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