



T.C.
ÇANKIRI KARATEKİN UNIVERSITY
INSTITUTE OF FINE ARTS
DEPARTMENT OF ART AND DESIGN

**THE INFLUENCE OF THE OTTOMAN
ARCHITECTURAL STYLE ON THE DESIGNS OF
MODERN MOSQUES IN BAGHDAD**

Noor Mahmood Ismael ISMAEL

MASTER'S THESIS

Supervisor

Asst. Prof. Dr. Tuğba ÇAĞLAK EKER

Çankırı-2023

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CONTENTS

SCIENTIFIC ETHICS STATEMENT	i
TEZ KABUL VE ONAY	ii
FOREWORD	iii
ABSTRACT	iv
ÖZET	v
LIST OF FIGURES	vi
CHAPTER ONE	1
1. INTRODUCTION.....	1
1.1. THE PROBLEMS OF THE RESEARCH	2
1.2. THE RELEVANCE AND IMPORTANCE OF RESEARCH	3
1.3. THE AIMS OF THE RESEARCH	3
1.4. LIMITATION OF THE RESEARCH	3
1.5. THE METHOD OF THE RESEARCH	4
1.6. LITERATURE REVIEW	6
CHAPTER TWO	8
2. ISLAMIC MOSQUE ARCHITECTURE.....	8
2.1. ISLAMIC MOSQUE ARCHITECTURE	8
2.2. ARCHITECTURAL STYLES.....	9
2.3. THE BASIC ARCHITECTURAL ELEMENTS OF MOSQUES.....	10
2.3.1. Ceilings	10
2.3.2 Domes	11
2.3.3. The Qibla Wall and the Mihrab	12
2.3.4. Minaret or Lighthouse.....	13
2.3.5. Columns and Capitals	14
2.4. ELEMENTS OF OTHER MOSQUES	15
2.4.1. Concentration of Weights in Mosques.....	15
2.4.2. Mosque Walls	16
2.4.3. Windows	17
2.4.4. Doors in Mosque Architecture.....	18
2.5. OTTOMAN ARCHITECTURE IN IRAQ	18
2.5.1. Stages of Development of Ottoman Architecture	19
2.5.2. Design Characteristics of Ottoman Mosques.....	22
2.5.3. Iraqi Mosques During the Ottoman Era	23
CHAPTER THREE.....	25
3. THEORETICAL FRAMEWORK AND ELEMENTS CHOSEN FOR THE STUDY	25

3.1. THE INFLUENCE OF THE OTTOMAN STYLE ON CONTEMPORARY MOSQUES IN BAGHDAD	25
3.2. THE IMPORTANCE OF DESIGN AESTHETIC VALUES IN COMMUNICATION.....	25
3.3. THE INFLUENCE OF THE ENVIRONMENT ON AESTHETIC AND FUNCTIONAL DESIGN ELEMENTS.....	26
3.4. AESTHETIC DECORATIONS AND DECORATIONS IN MOSQUE ARCHITECTURE	27
3.4.1. Botanical Designs	27
3.4.2. Designs for Geometric Motifs.....	27
3.4.3. Arabic Calligraphy Decoration Designs	28
3.4.4. Muqarnas Designs.....	28
3.5. MATERIALS USED IN THE INTERIOR DESIGNS OF MOSQUES	29
3.6. THE HYPOTHESIS OF THE RESEARCH AND ANALYSIS OF SELECTED MOSQUES WITHIN THE SCOPE OF THE RESEARCH.....	30
3.7. AXES OF COMPARATIVE ANALYSIS OF THE ELEMENTS SELECTED FROM THE MOSQUES	31
CHAPTER FOUR.....	32
4. ANALYSIS AND COMPARISONS OF SELECTED MOSQUES.....	32
4.1. AL-MOURADIA MOSQUE.....	32
4.1.1. Planning Style	33
4.1.2. The Basic Symbolic Architectural Elements of The Minaret.....	37
4.1.3. Symbolic-Structural Architectural Elements	39
4.2. THE RESULTS OF THE COMPARATIVE ANALYSIS OF THE CHARACTERISTICS OF THE PLANNING STYLE IN AL-MOURADIA MOSQUE.....	49
4.2.1. The Results of The Comparative Analysis of The Characteristics of The Basic Architectural Elements in the Minaret	50
4.2.2. Results of the Comparative Analysis of The Characteristics of The Architectural Elements of Al-Mouradia Mosque	50
4.3. CONTEMPORARY MOSQUES IN BAGHDAD	51
4.3.1. Analyzing the Characteristics of the Planning Style of the Contemporary Mosques of Baghdad.....	60
4.3.2. Analysis of the Basic Symbolic Architectural Elements of the Minaret of Contemporary Baghdad Mosques.....	61
4.3.3. Analysis of Symbolic Architectural Elements - Structural.....	63
4.3.4. Analyzing the Aesthetic Decorations and Materials Used.....	71
4.3.5. Results of the Comparative Analysis of the Characteristics of the Planning Style	81
CHAPTER FIVE	83
5. CONCLUSIONS	83

REFERENCES.....	85
CURRICULUM VITALE	90



SCIENTIFIC ETHICS STATEMENT

I have meticulously complied with scientific ethics in the process from the proposal stage to the conclusion of the study titled *The Influence of the Ottoman Architectural Style on the Designs of Modern Mosques in Baghdad*, which I have prepared as a Master's Thesis, I have obtained and presented all the information in the thesis within the framework of scientific ethics and rules, directly or indirectly as a source for every citation I have made and that the works I have benefited from are those shown in the bibliography; In addition, I declare that there is no personal data belonging to anyone in the thesis except with written permission, that I give my permission to include my personal data in the hard copy or electronic copy of the thesis that I personally submitted, and that any written, visual, auditory or other form of copyright belongs to someone else. I declare that the material is only used in the thesis within the framework of scientific ethical principles and/or by obtaining the necessary permissions.

27 / 09 / 2023

Noor Mahmood Ismael ISMAEL

TEZ KABUL VE ONAY

ÇANKIRI KARATEKİN ÜNİVERSİTESİ

GÜZEL SANATLAR ENSTİTÜSÜ

Noor Mahmood Ismael ISMAEL tarafından hazırlanan *The Influence of the Ottoman Architectural Style on the Designs of Modern Mosques in Baghdad* başlıklı bu çalışma, 27/09/2023 tarihinde yapılan Tez Savunma Sınavı sonucunda oybirliğiyle başarılı bulunarak jürimiz tarafından Sanat ve Tasarım Anabilim Dalı Sanat ve Tasarım-İngilizce Programında Yüksek Lisans Tezi olarak kabul edilmiştir.

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Bu tez, Çankırı Karatekin Üniversitesi Güzel Sanatlar Enstitüsü Yönetim Kurulunun 06/09/2023 tarih ve 26/01 sayılı oturumunda belirlenen jüri tarafından kabul edilmiştir.

Prof. Dr. Ersoy YILMAZ
Enstitü Müdürü

FOREWORD

I would like to extend my sincere thanks and appreciation to Asst. Prof. Dr. Tuğba ÇAĞLAK EKER who gives continuous advice and assistance to me and dozens of students. I also extend my thanks to all the professors for their contribution to the completion of my studies. Thanks also to my husband who encouraged me to complete this study.

27 / 09 / 2023

Noor Mahmood Ismael ISMAEL



ABSTRACT

Thesis Title: The Influence of the Ottoman Architectural Style on the Designs of Modern Mosques in Baghdad

Author: Noor Mahmood Ismael ISMAEL

Supervisor: Asst. Prof. Dr. Tuğba ÇAĞLAK EKER

Thesis Type: Master's Thesis

In this study, the influence of the Ottoman style on the construction of mosques in Baghdad was studied, and the extent to which this influence continued in the contemporary mosque architecture in Baghdad was investigated. This research consists of two main sections, through which mosque and architectural elements were selected for Al-Muradiyya Mosque, as it was built during the Ottoman rule of Baghdad (1570). These elements were analyzed, which are the planning style and include the shape of the inner sanctuary, the presence of the open courtyard, and the shape of the front porch. The basic symbolic architectural elements were also analyzed, including the minaret in terms of the shape of the base, the shape of the body, the shape and number of the balcony, the decorations and the materials used in its construction. The symbolic architectural elements were also examined, including the columns in terms of the shape and location of the cross-section of the column, the capitals used at the top of the column, the presence of the central dome and the secondary domes and their location. Then it was compared with the same elements present in the mosques that preceded the Ottoman rule on the one hand, and with the same elements present in the Ottoman mosques in Turkey on the other hand. Mosque and architectural elements were selected each of Umm Al-Tabul Mosque (1968) located on the Karkh side of Baghdad and Al-Nida Mosque (1997) located on the Rusafa side of Baghdad, as they are among the contemporary mosques in Baghdad. The elements of the mosque were analyzed according to this method used in Al-Mouradia Mosque. The results proved that the selected mosques were influenced by the Ottoman style, as the comparative analysis of both the planning pattern and the structural elements showed that the use of the roofing system with one central dome and the presence of the front porch in these mosques is unparalleled in the mosques built in Baghdad before that period. It was concluded that the Ottoman style had an impact on the construction of mosques in Baghdad since the fifteenth and sixteenth centuries, and this influence is still continuous and continuous and has become an integral part of the contemporary Iraqi mosque architecture, because of the functional and aesthetic purposes characterized by the design characteristics of the Ottoman style.

Keywords: Mosque, Baghdad, Ottoman style, architecture, design.

ÖZET

Tezin Başlığı : Osmanlı Mimari Üslubunun Bağdat'taki Modern Camilerin Tasarımlarına Etkisi

Tezin Yazarı : Noor Mahmood Ismael ISMAEL

Danışman : Asst. Prof. Dr. Tuğba ÇAĞLAK EKER

Tezin Türü : Yüksek Lisans

Bu çalışmada, Osmanlı üslubunun Bağdat'taki camilerin inşası üzerindeki etkisi incelenmiş ve bu etkinin Bağdat'taki çağdaş cami mimarisinde ne ölçüde devam ettiği araştırılmıştır. Araştırma, Bağdat'ın Osmanlı hakimiyeti döneminde (1570) yapılmış olan Al-Muradiyya Camii'nin, cami ve mimari unsurların seçildiği iki ana bölümden oluşmaktadır. Planlama tarzı olan ve iç mabedin şekli, açık avlunun varlığı ve ön revakın şekli gibi bu unsurlar analiz edilmiştir. Minare de dahil olmak üzere temel sembolik mimari unsurlar, kaidenin şekli, gövdenin şekli, şerefenin şekli ve sayısı, süslemeler ve yapımında kullanılan malzemeler açısından analiz edilmiştir. Sütun kesitinin şekli ve konumu bakımından sütunlar, sütunun tepesinde kullanılan başlıklar, merkezi kubbe ve tali kubbelerin varlığı ve konumları gibi sembolik mimari unsurlar da incelenmiştir. Daha sonra elde edilen veriler bir yandan Osmanlı öncesi camilerde bulunan unsurlarla, diğer yandan Türkiye'deki Osmanlı camilerinde bulunan aynı unsurlarla karşılaştırılmıştır. Bağdat'ın Karkh tarafında yer alan Ümmü'l-Tabul Camii (1968) ve Bağdat'ın Rusafa tarafında yer alan El-Nida Camii (1997), Bağdat'taki çağdaş camiler arasında yer aldıkları birer için cami ve mimari unsur olarak seçilmiştir. Caminin elemanları, Al-Mouradia Camii'nde kullanılan yöntemle göre analiz edilmiştir. Sonuçlar, seçilen camilerin Osmanlı tarzından etkilendiğini kanıtlamıştır, çünkü hem planlama modelinin hem de yapısal unsurların karşılaştırmalı analizi, bu camilerde tek merkezi kubbeli çatı sisteminin kullanımının ve ön revakın varlığının, o dönemden önce Bağdat'ta inşa edilen camilerde benzersiz olduğunu göstermiştir. Osmanlı üslubunun on beşinci ve on altıncı yüzyıllardan itibaren Bağdat'taki camilerin inşası üzerinde etkili olduğu ve bu etkinin hala devam ettiği ve Osmanlı üslubunun tasarım özellikleriyle karakterize edilen işlevsel ve estetik amaçlar nedeniyle çağdaş Irak cami mimarisinin ayrılmaz bir parçası haline geldiği sonucuna varılmıştır.

Anahtar Kelimeler: Cami, Bağdat, Osmanlı üslubu, mimarlık, tasarım

LIST OF FIGURES

Figure 2. 1. Types of domes: A. Mamluk dome, B. The Safavid dome, C. The Indian Dome, D. Ottoman dome.	12
Figure 2.2. The mihrab: A. Royal style B. Safavid style	13
Figure 2.3. Types of minarets	14
Figure 2.4. Different types of column capitals: A. Andalusian style, B. Ottoman style.	15
Figure 2.5. Different shapes of brackets used in mosques.....	16
Figure 2.6. The windows of the Dome of the Rock Mosque in Jerusalem.....	17
Figure 2.7. Bursa Grand Mosque.....	19
Figure 2.8. Al-Fateh Mosque.	20
Figure 2.9. Hagia Sophia Mosque.....	20
Figure 2.10. Suleymaniye Mosque (1557) in Istanbul	21
Figure 2.11. Shahzadeh Mosque (1548) in Istanbul	22
Figure 2.12. The Selimiye Mosque (1574) in Edirne	22
Figure 4.1. Al-Mouradia Mosque sketch	33
Figure 4.2. Sketch of some mosques in the first five Hijri centuries.....	34
Figure 4.3. Sketch of Al-Nouri Mosque in Mosul.	34
Figure 4.4. Rustem Pasha Mosque Sketch.....	36
Figure 4.5. The minaret of Al-Mouradia Mosque.....	37
Figure 4.6. Minarets in ancient Iraqi mosques.....	38
Figure 4.7. Formation of the minaret during the reign of Sinan.	39
Figure 4.8. Columns in Al-Mouradia Mosque.....	40
Figure 4.9. The patterns used on the front porch of the mosque.	41
Figure 4.10. The dome of Al-Mouradia Mosque and the columns supporting it from the inside and outside	42
Figure 4.11. Some small side domes, where one of them sits on half domes, and one of the three domes of the side nave.....	42
Figure 4.12. Columns of the front portico of Rustem Pasha Mosque.....	46
Figure 4.13. Vaulted Canopy Variations	47
Figure 4.14. The dome and its distribution in Sinan mosques.....	47
Figure 4.15. Umm Al-Tabul Mosque	53

Figure 4.16. Each column as a special corner for worshipers in Umm al-Tabul mosque.	57
Figure 4.17. Pointed arches in Ottoman architecture found in Umm al-Tabul mosque in Baghdad	60
Figure 4.18. The detailed arches in Ottoman architecture found in Umm al-Tabul mosque in Baghdad	60
Figure 4.19. The front and side of Al-Nida Mosque.....	61
Figure 4.20. Floral and stone decorations in Ottoman architecture found in Al-Nida Mosque in Baghdad	63
Figure 4.21. Floral and stone decorations in Ottoman architecture found in Al-Nida Mosque in Baghdad.	64
Figure 4.22. Al-Nida Mosque on the right and Umm Al-Tabul Mosque on the left.	65
Figure 4.23. The sanctuary and the pillars bearing the dome of Al-Nida Mosque....	66
Figure 4.24. On the right is the base of the minaret of Umm al-Tabul Mosque, on the left is the base of the minaret of Al-Nida Mosque.	66
Figure 4.25. A. Columns in Umm Al-Tabul Mosque, B. Columns in Al-Nida Mosque, C. Column in the outer portico of Rustem Pasha Mosque.....	67
Figure 4.26. Decoration and formation of the dome of Umm Al-Tabul Mosque from inside and outside.....	68
Figure 4.27. The dome Al-Nida Mosque from the inside, where it is noticed that there are no openings for natural lighting, in addition to the distinctive decoration that includes 16 sections.	69
Figure 4.28. Plant motifs and polygonal shapes of the dome of the Nida Mosque from the outside	69
Figure 4.29. The secondary domes in the two front arcades, that noticed the difference in the ceiling level of Al-Nida Mosque from the outside	71
Figure 4.30. The division of the 16th dome into a section and the use of motifs to decorate the dome of the Sultan Ahmed Mosque from the inside.	72
Figure 4.31. The use of muqarnas, geometric and floral motifs, and Arabic calligraphy in the mihrab of Umm al-Tabul Mosque.	73
Figure 4.32. Covering the mihrab with alabaster, which is one piece, and limiting it to Arabic calligraphy and some Tibetan decorations in the mihrab Al-Nida Mosque	74

Figure 4.33. The great similarity in the use of muqarnas, decorations and Arabic calligraphy is the pulpit and mihrab of the Rustem Pasha Mosque.	75
Figure 4.34. The decorative compositions of the dome, the neck, and the base inside Umm al-Tabul Mosque	75
Figure 4.35. Plant motifs between the pointed arches inside Umm Al-Tabul Mosque	76
Figure 4.36. Various combinations of plant and geometric motifs adorn the sections of the roof of the portico inside Umm al-Tabul Mosque	77
Figure 4.37. The gypsum decorations include floral and geometric motifs inside the hall of Umm Al-Tabul Mosque.....	78
Figure 4.38. Natural light openings, stained glass, decorations, and gypsum windows inside Umm Al-Tabul Mosque Hall	79
Figure 4.39. A unique combination of plant and engineering decorations, where the dome was divided with gypsum decorations in the central dome in the prayer hall in Al-Nida Mosque.....	80
Figure 4.40. The main prayer hall in Al-Nida Mosque, where a light green ring and gypsum decorations were used instead of arches.....	81
Figure 4.41. The gypsum decorations with plant motifs inside them for the ceiling, and the light and dark green colors appear in Al-Nida Mosque	81
Figure 4.42. The qibla wall and the wall opposite it in Al-Nida Mosque, showing the short columns and the main entrance gates.....	81
Figure 4.43. The use of rectangular wooden windows decorated with colored glass and crystal and framed with gypsum decorations in Sultan Ahmed Mosque.....	80
Figure 4.44. Glazed ceramics decorated with floral motifs are used to a limited extent in the exterior walls and are framed by the gypsum decorations of Nida Mosque....	81

CHAPTER ONE

1. INTRODUCTION

Baghdad has an urban importance not only for Iraq but also for the entire Arab and Islamic world because, since its foundation, it has been the center in which the features of the Arab-Islamic civilization in its various ideological, intellectual, scientific, artistic, and social aspects were crystallized and entrenched. Historians of Islamic architecture agree that Baghdad in the third century AH was the center in which what can be considered the classical art of Islamic architecture was formed, which spread with regional differences from Central Asia to Morocco and Andalusia.

Despite the successive periods of prosperity and collapse that Baghdad has been subjected to throughout the ages; However, it remains in the memory of Iraqis and others that the bustling city has a solid identity rooted and renewed through the ages. One of the most prominent intellectual issues that arise in this regard is the issue of urban identity for the city. The issue and concept of urban identity have emerged in the last two decades in international and Arab architectural circles. Many studies have been presented, and seminars and conferences have been held. There is no room here to delve into them, as many contradictory opinions and ideas exist. The urban identity is part of society's cultural identity, and its creation takes place through collective and historical interaction in which countless factors overlap.

Among the most important problems that arise is the problem of the relationship between historical architectural forms and concepts and their relationship with contemporary and innovative forms, and the disagreement about the extent of the possibility available for innovation and creativity in exchange for communication with what is historical, especially with a city with a long history such as Baghdad. In general, however, there is a tendency to agree on the importance of a balance between what is historical and what is renewed and innovative. Identity is a dynamic state, not a static one, and the urban identity from a creative perspective is not in the production of the similar but in the production of the different, and not the identical one, but the many and varied.

The identity of cities, and the identity of Baghdad in particular, is a constantly evolving concept. As this concept expresses itself with specific embodiments at a certain period, it soon finds another embodiment and a different representation in a new innovative form, whether an architectural achievement or a planning success. Thus, the identity of Baghdad must be open to broad horizons of knowledge, be continuous with its environment, and be vital and renewed. It is important because it results from architectural and planning creativity that knows no borders (Al-Sultani, 2008).

The city's identity is linked to the mental image of its natural and architectural components, and the symbols are among the most important of these components, which are the visual elements of the city that can be seen from far away. These signs are important to the urban fabric because they help residents orient themselves and give an identity to an area (Lynch, 1960, pp. 8-9). Undoubtedly, one of the most important architectural features of Islamic cities, whose mental image was drawn in the past and in modern times, are the domes and minarets of religious buildings such as mosques.

1.1. THE PROBLEMS OF THE RESEARCH

Baghdad is one of the cities rich in architectural heritage, and its mosques, built during Ottoman rule, represent an important aspect of this legacy. Although some studies dealt with these mosques, through which Iraqi architecture was addressed at different levels, these studies' findings were general and comprehensive. Some dissertations on mosque architecture showed conflicting opinions as to whether some of the architectural components of modern mosques constitute a continuity with the traditions of the architecture of the region or not. These details will be explained in the literature review. This inconsistency is due to the lack of clarity and accuracy of opinions at times and their conflict at other times, whether at the level of a single study or between studies on communication at the level of the components of mosques that were built during the Ottoman rule, such as Al-Mouradia Mosque, in addition to the lack of a specialized study on the extent of the influence of the Ottoman style and its continuity on the level of vocabulary and components of modern mosque architecture in Baghdad.

1.2. THE RELEVANCE AND IMPORTANCE OF RESEARCH

The importance of the subject lies in the specificity of the period of Ottoman rule in Iraq and the questions that may come to mind about the influence of the Ottoman style on the characteristics of Iraqi architecture, especially since the mosques were usually built under the patronage of the Ottoman governors themselves. Many mosques were built during that period, the traces of which remain while preserving their original layout and elements, despite the maintenance operations carried out for them in different periods, which enables them to be studied scientifically and visited in the field.

1.3. THE AIMS OF THE RESEARCH

The objective of the research is to demonstrate the influence of the Ottoman style on the architecture of modern mosques in Baghdad, by developing a clear vision of urban continuity and its changes, at the level of the components of mosque architecture. The study shows whether there is a connection between the characteristics of the components of Ottoman Mosque architecture with the characteristics of the components of modern mosque architecture in Baghdad. In addition to diagnosing the architectural components that achieved this communication and their characteristics, that is among the components selected for the study.

1.4. LIMITATION OF THE RESEARCH

Several limitations restrict the research, such as the difficulty of finding mosques dating back to the era before the entry of Ottoman architecture to Baghdad. In addition to the limited number of mosques that were built by the Ottomans in Baghdad, if they existed, we may find that they were subjected to many restoration and modification operations, which led to the loss of many of them due to the architectural characteristics on which they were built for the first time. On the other hand, the architecture of mosques in Iraq, in general, contains a mixture of several architectural styles, such as the Ottoman and Persian styles, so there is an overlap in this style so that it is difficult to find a mosque that contains architectural and aesthetic characteristics depending on one architectural style.

1.5. THE METHOD OF THE RESEARCH

The research adopted a methodology consisting of the following steps:

1. Building a theoretical framework for the study of communication in mosque architecture by following the following steps:

- Defining a procedural definition of the concept of communication in the architecture of mosques.
- Determining the mosque's architectural, design and aesthetic components that can be used in the extrapolation and investigation of communication in the architecture of mosques.

2. Determining and choosing the mosques that will be studied and compared, as follows:

- Determining one or more of the Ottoman mosques in Turkey, such as Sultan Ahmed Mosque, Sulaymaniyah Mosque, Rustem Pasha Mosque, and Selimiye Mosque, which were built during the same period in which the Ottomans were present in Baghdad and consider them a model of the Ottoman style.
- Determining one or more mosques built by the Ottomans during their presence in Baghdad, which still exist today and can be studied in the field, such as the Al-Muradiyya Mosque, being one of the first mosques built during that period, whose effects remain while preserving its layout and elements. This can be seen as an indication of the Ottoman style's entry and influence on Baghdad Mosque architecture.
- Identifying two or more modern and contemporary mosques in Baghdad and considering them as a model for the architecture of modern Iraqi mosques and mosques, such as Umm Al-Tabul Mosque and Al-Nida Mosque.

3. Application to the architecture of the selected mosques by following the following comparative analysis steps:

- Determining the characteristics of the architectural, design and aesthetic components of the architecture of the Al-Muradiyya Mosque, which was

elected for the study and belonged to the mosque during the period in which it was built, which represents the entry of the Ottoman style into the architecture of mosques in Baghdad, based on previous studies as well as on the field collection and documentation of information.

- Determining the characteristics of the same architectural, design and aesthetic components selected for study at the level of Ottoman mosques, which were previously identified in Turkey. These mosques represent the original Ottoman style and were built during the same period in which the Ottomans were in Baghdad.
- Determining the architectural, design and aesthetic characteristics chosen for study in the architecture of mosques in Baghdad from its emergence until the time of building the Al-Muradiyya Mosque, which represents a period before the entry of the Ottoman style.
- Determining the characteristics of the vocabulary and components chosen for the study in the modern Iraqi mosques, which were previously identified, and which represent the continuity of the influence of the Ottoman style in the architecture of modern mosques in Baghdad, based on previous studies as well as on collecting and documenting field information.
- Comparison of the characteristics of the selected components of the Al-Muradiyya Mosque with the characteristics of the components in the mosque architecture in Baghdad that existed before the entry of the Ottoman style.
- Comparison of the characteristics of the components studied in Al-Mouradia Mosque with those of the components in the Ottoman mosques identified previously.
- Comparison of the characteristics of the components studied in Al-Muradiyya Mosque with those of the components in the modern mosques in Baghdad, identified previously.
- Presenting the results of the comparative analysis on the level of selected and studied components.

1.6. LITERATURE REVIEW

Theses that dealt with the architecture of mosques built in the Ottoman style in Baghdad and the extent of their impact on the architecture of mosques and modern mosques in Baghdad can be classified into three groups as follows:

Historical studies: These dealt in a descriptive and general manner with historical aspects related to mosques, such as Al-Mouradia Mosque, with a brief description of its general planning and its most prominent elements, such as the treatises of Al-Alusi (2006) and Abdul-Hamid Ubadah (2004).

As for Al-Ansari (2015), he confirmed that the mosques of Baghdad during the Ottoman era were not affected by the Ottoman architectural styles and styles, inferred by a general descriptive comparison that is not supported by scientific evidence for aspects related to the planning style in both styles and that the Iraqi specificity of mosques in that period was achieved by using local building materials and methods.

Archaeological Studies: The architecture of mosques was described from an archaeological point of view as part of a study of different Iraqi facilities. For example, the study of Isaa Salman (1982) confirmed that the renovations and renovations of Al-Muradiyya Mosque building, during different periods did not affect its planning and architecture and that the mosque, especially its sanctuary, became a model for several mosques of the sixth century AH and what followed. As for Al-Qusayri (1981), in addition to the description, it dealt with aspects related to the origins of the architectural elements and vocabulary of those mosques by tracing them in Iraqi and non-Iraqi architecture traditions.

The researcher pointed out that the mosques of Baghdad during the Ottoman era were distinguished by Baghdadi characteristics in the general shape, materials, and construction methods, stressing the little influence of Ottoman architecture on local architecture. However, she did not deny the existence of some Turkish architectural influences. The study showed that the components of the Al-Muradiyya Mosque, which showed new trends different from the previous Iraqi architectural traditions, are the central layout, the dome like the domes of Istanbul, the roofing with domes and their halves, and so on.

Architectural studies: the most prominent of which is the study of Shatha l-Amiri (2010), which investigated communication in the architecture of Mesopotamia during the successive periods until the beginning of the twentieth century, through the study of various functional patterns, and Al-Mouradia Mosque was among them. As for the study of Suphi Saatçi (2021), it dealt with the generality of the works of the Turkish architect Sinan in Baghdad, mentioning among them the Al-Muradiyya Mosque, which he concluded, after describing it reflects the style of Sinan, especially at the level of planning. He deduced the possibility of saying that there was a design belonging to Sinan in Baghdad. On the other hand, the study of Yasmine Qusay (2015) aimed at extrapolating and analyzing architectural styles that extended from the late Abbasid era until the end of the Ottoman period for various building styles to know the extent of their influence on each other, and Al-Mouradia Mosque was among the studied styles of buildings.

CHAPTER TWO

2. ISLAMIC MOSQUE ARCHITECTURE

Islamic architecture excelled in designing and building mosques, whether congregational in a large city or remote village. Mosques have beauty and majesty that remove loneliness from remote villages. Mosques give more warmth and comfort to the bustling city. Moreover, the mosque's status in the nation of Islam is like the soul in the body, as it is the center of faith and its symbols. The mosque is visited by Muslims every day five times, as it is considered a social center, a cultural meeting place, and a platform of knowledge, as it is the fortress of the nation that protects it from fanaticism or deviation (Eissa, 2021, p. 302).

The mosque is the center of the interdependence of the Islamic community and its concrete physical structure, so it is not complete without a mosque connecting its members (Hussein, 1981, p. 37). Mosques tell the history of the Islamic community in a society and its civilizational development and reflect the components of each society in terms of craft, art and science. The mosque has a great place in building society and the value it carries in the soul of every Muslim (Eissa, 2021, p. 302). The simplicity of the mosque's architectural form is the final perceived image of the architectural composition in the three dimensions, as well as the forms of the covering surfaces and their architectural and structural components. That image remains in the viewer's mind and gives the mosque the characteristic of difference and distinction (Muhammad, 2016, p. 228).

2.1. ISLAMIC MOSQUE ARCHITECTURE

Art constitutes an authentic civilized foundation in Islamic civilization, and most aspects of Islamic life in architecture and interior design were not devoid of it. This was manifested in Arab-Islamic creativity in sophisticated and unique forms and models that clearly impacted the cultures that followed (Graber, 1973, p. 70). It is directly reflected in the designs of the elements and forms of Islamic architecture and its aesthetic character, which has a different reflection on Islamic thought. It also represents the superior beauty of every shape, line, and colour created by the Muslim artist, from decorative inscriptions and calligraphy to Quranic verses.

The mosque's design mainly fulfils several uncomplicated functions, most related to a group behavioural pattern or other activities. These activities mainly contribute to focusing on achieving the highest levels of communication between the worshippers in terms of designing the interior space, which requires levelling the floor of the mosque to achieve levelness of the rows and avoiding all forms of distraction for worshippers such as uncomfortable decorations, colors, sounds and lighting. Although many designers find that analyzing the function of the mosque is a very simple and clear problem, the symbolic value of the mosque and the spiritual meanings required to be supported in this architectural formation push the worshipers to the required mental and emotional clarity.

Islam has always paid attention to the essence before the appearance, as we notice the focus on the internal space more than the external form, and it can be said that the architectural design process of the mosque begins with the design of the internal space of the mosque. In the sense that the design is done from the inside out, and it is a one-way process concerned with the function that the Muslim architect and designer investigated Islamic architecture in general and the architecture of mosques in their architectural and interior design in particular, a creative art commensurate with the greatness and sanctity of the Islamic religion. It also represents the beauty that relied on the abstraction principle in its creative foundations with all its symbols (Eissa, 2021, p. 303).

2.2. ARCHITECTURAL STYLES

According to the classification of Kuhnel Ernst, as mentioned in his short book under the name it is one of the famous classifications in this field (Ernst, 1962). This classification is not classified according to eras or regions but mixes between these and those. Then it analyzes each of them in a manner inspired by the method of Sanoff, which he used in a visual analytical study related to people's recognition of the types of buildings through their external appearance to comprehend the function of the building through the abstract level that people perceive (Sanoff, 1991, p. 20).

1. The emergence of mosque architecture: It is represented by the Mosque of the Prophet Muhammad in Medina, as it is a flat area of land with a wall, and part of it was roofed, and the first mosques in Islam followed its approach, such as the Mosque

of Basra, the Mosque of Kufa in Iraq, and the Mosque of Amr ibn al-Aas in Fustat in Egypt.

2. The Umayyad style: Among the most famous mosques of this style are the Al-Aqsa Mosque, the Dome of the Rock, and the Umayyad Mosque in Damascus.
3. The Abbasid style: the mosques of Baghdad, Samarra, Ibn Tulun and Kairouan.
4. The Fatimid style: Al-Azhar Mosque and Al-Hakim Bi-Amr Allah Mosque.
5. Seljuk style: Nur al-Din Mosque in Mosul and Konya Mosque.
6. The Iranian-Mongol style: examples of it are the Jawhar Shad Mosque in the shrine of Imam Ali al-Ridha in the city of Mashhad, the Qabalan Mosque in Bukhara, and the Tamerlane Mosque in Samarkand.
7. The Mamluk Style in Egypt and the Levant: Al-Zahir Baybars Mosque, Qalawun Mosque, Qaitbay Mosque.
8. The Moroccan-Andalusian style: An example is the Umayyad Mosque in Cordoba.
9. The Safavid style in Iran: Sheikh Safieddin Mosque in Ardabil and Shah Mosque in Isfahan, and Sultan Hussein Madre Shah Mosque and School in Isfahan.
10. The Turkish-Ottoman style is a continuation of the Seljuk style, such as the Orkhan Mosque and others. The Ottoman style will be discussed in detail.

2.3. THE BASIC ARCHITECTURAL ELEMENTS OF MOSQUES

2.3.1. Ceilings

It is one of the main determinants of the interior space, and the ceiling height is usually related to the dimensions and size of the space. High ceilings give a sense of freedom and openness, while low ceilings emphasize enclosed space and give a sense of intimacy and containment, drawing attention to the top (Cheng, 1987, p. 198).

The ceiling designs also showed a prominent role in enhancing the aesthetic values of the mosque's sanctuary, which relied mainly on the diversity of its designs, including the aesthetics it contains, which contributes to directing the viewer's view to a central point at the top of the mosque (Cheng, 1979, p. 77), as in the designs of

the dome of the prayer hall in the Sayyid Sultan Ali Mosque in Baghdad. Metal ceiling designs appear on the ceiling of the prayer hall of the Yildiz Mosque in Istanbul. From the above, ceiling designs have played a prominent role in showing the aesthetic values of the mosque, based on the selection of appropriate types of designs and materials with different heights.

2.3.2 Domes

The dome is one of the basic elements of architecture known and influenced by Islamic art, making it at the forefront of Islamic architectural elements. It confirms the genuine concern of the Muslim artisans who gave their religious buildings the best of their art and crafts, adding aesthetic value to the place of prayer. Domes, in their simplest form, are hollow hemispheres that stand on columns or walls and are made of various materials. The first dome built in Islam is the Holy Rock Mosque in Jerusalem, built by the Umayyad caliph Abd al-Malik ibn Marwan in the year 72 AH. The dome is rarely completely spherical, as the shapes of the domes differ according to the building materials used, the available technology, the prevailing architectural styles, and other influences (Eissa, 2021, p. 311). There are round and polygonal domes consisting of one, two or more roles, and they can be classified according to geographical distribution and cultural influences into four basic groups:

1. Domes in the Mamluk style in Egypt and the Levant relied on stone for construction and decoration (See Figure 2.1-A).
2. Domes in the Safavid style have the same formation and structural shape as those in Egypt, but ceramics were used in the cladding and internal and external decoration, which gave a great difference to the final shape (See Figure 2.1-B)
3. Domes in the Seljuk and Ottoman styles greatly influenced Byzantine churches' architecture. (See Figure 2.1-C).
4. Domes in the architecture of India, showing the influence on local architecture, including Buddhist architecture, as well as Russian churches (see Figure 2.1-D).

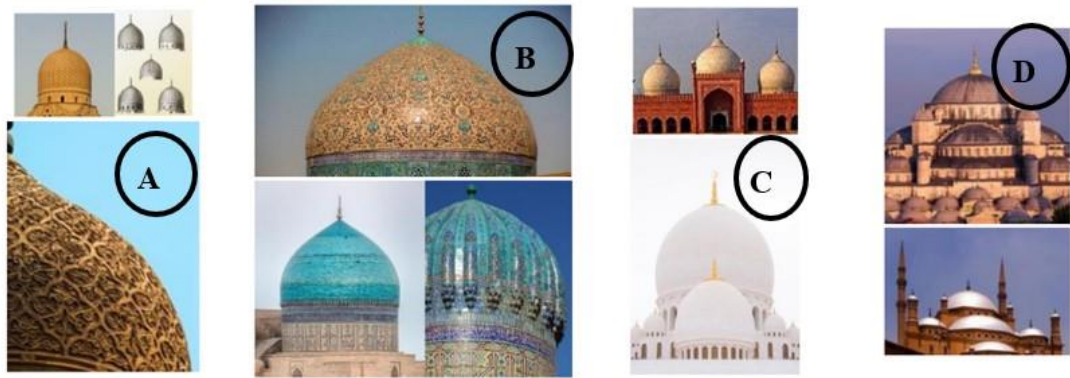


Figure 2. 1. Types of domes: A. Mamluk dome, B. The Safavid dome, C. The Indian Dome, D. Ottoman dome (Eissa, 2021, p. 311).

These domes were characterized by various types of stucco and colored inscriptions within the interior space of the prayer hall, in addition to the use of polygonal domes. The Muslim architect developed the massive dome designs used in the Ottoman style and began using half domes at the four corners. Then the architect resorted to expanding the diameter of the central dome, distributing its loads on several columns, and decorating most of these domes with patterns of vegetal and geometric designs executed on gypsum and wood while framing its inner perimeter with beautiful models of Quranic verses.

Considering this, the addition of the dome to the designs of the prayer hall in Islamic mosques gave symbolism that expresses the greatness and greatness of Islamic architecture. It also expressed the genius of Islamic architecture and crafts of all kinds in the designs, which added an aesthetic value to the interior design of the mosques (Eissa, 2021, p. 311).

2.3.3. The Qibla Wall and the Mihrab

The qibla wall is usually constructed without any openings and is solid. Some architects resort to forming levels of roofs on it in case the mosque and qibla wall is exposed to a large percentage of solar radiation and heat stress to provide self-shadowing on the qibla front. Here, these surfaces may be designed to be implemented in the structural system of the building or through patterns of architectural cladding with various surfaces that achieve the same shade differently.

The mihrab is an Islamic architectural innovation used in the qibla wall to determine its direction. The mihrab appeared to direct the mosque towards the direction of the qiblah in the Sacred Mosque. It is useful in determining the location of the imam at the prayer hall. It is useful in expanding the mosque's capacity by nearly a row of worshippers in the universal prayer. The mihrab is usually in the form of a semi-circular or concave polygon, surmounted by a small dome that reflects the sound towards the back rows of the mosque (see Figure 2.2) (Eissa, 2021, p. 308).



Figure 2.2. The mihrab: A. Royal style B. Safavid style (Eissa, 2021, p. 309).

2.3.4. Minaret or Lighthouse

The minaret appeared in different shapes, including square, circular, octagonal, and spiral, as in Egypt, Kairouan, and the Andalusian-Moroccan style. Some of the domes are also graceful and circular with a pointed conical end, as in the Ottoman style, and all were made of stone.

While other domes can be found in the form of lighthouses, as in India, Iran and some Asian countries, as they were distinguished by the use of ceramics in the outer cladding of the minaret (see Figure 2.3) (Eissa, 2021, p. 311).

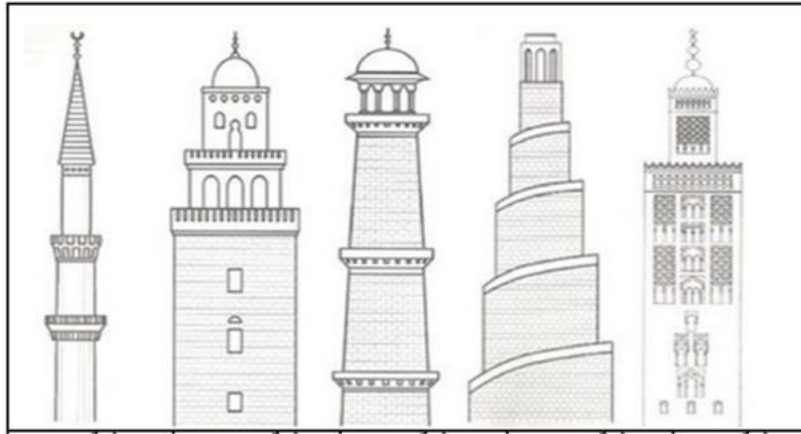


Figure 2.3. Types of minarets (Eissa, 2021, p. 311).

2.3.5. Columns and Capitals

Columns are an essential architectural element. As a result of the civilizational development, Islamic architecture used columns of a distinctive nature in their construction, including cylindrical, polygonal, and spiral columns. The forms of Islamic columns varied between cylindrical, octagonal, hexagonal, and square. Islamic architecture was also known for the columns that took the shape of a semi-circle or three-quarters of a circle and were attached to the walls for support, strengthening, decoration, and beautification, especially when used on both sides of the doors and entrances and in the corners of the niches.

Muslim engineers and designers have mastered creating various types of diverse column designs, such as in the columns for the prayer hall of the Rustem Pasha Mosque in Turkey. As for the crowns, many of them appeared with different designs, for example, the onion crowns and the crowns decorated with muqarnas or in the form of leaves attached to the crown from below and distributed like an open flower. Thus, the crown has a base as an inverted cone, ending at the apex with a wide top (see Figure 2.4).

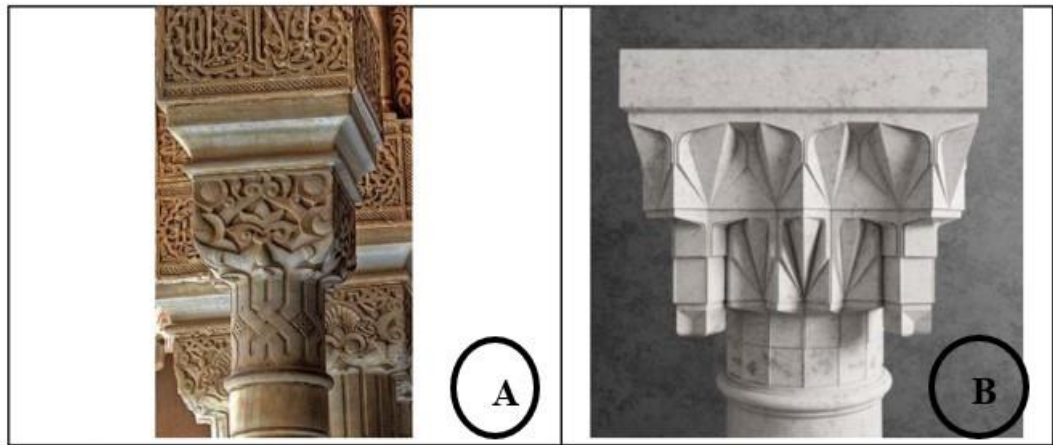


Figure 2.4. Different types of column capitals: A. Andalusian style, B. Ottoman style (Eissa, 2021, p. 310).

2.4. ELEMENTS OF OTHER MOSQUES

2.4.1. Concentration of Weights in Mosques

The arch is an arched architectural element that relies on one or more fulcrums to give the circular or arched shape and usually forms or surrounds the building openings. There were many types of arches used in Islamic architecture, including the round one with a single center, the pointed apostate arch, the lobed arch, the five-pointed arch, the triple arch, the bulbous arch, the pointed knot, the complex arch, the muqarnas arch, the double arch, the overlapping arch, and the hanging arch.

The placement of windows in the interior space of the mosque directly affects its function, so the architecture of mosques tended to not have windows at the level of view of the worshipers, especially in the qibla wall or the side walls, which achieves a lack of communication on the horizontal level between the internal space and the external space, to avoid distracting the minds of the pilgrims—the mosque. Hence, the flow of the inner space is determined to be from the top and not the sides. The upper flow is the closest to the connection of the inner space with the space surrounding it from above and with the sky, indicating the value of prayer in achieving the connection between the earth and the sky. This upper spatial fluidity was achieved in most ancient and modern mosques through the exposed courtyard and the openings in the necks of the domes (see Figure 2.5) (Eissa, 2021, p. 309).

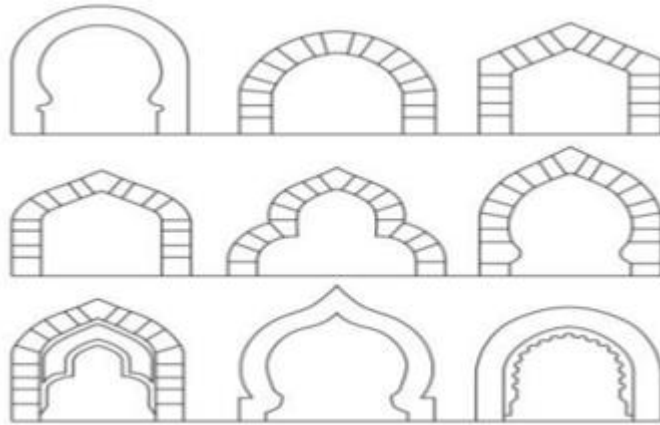


Figure 2.5. Different shapes of brackets used in mosques (Eissa, 2021, p. 309).

2.4.2. Mosque Walls

It is one of the most visually appropriate vertical planes, especially in delimiting the interior space. Its function is to carry ceilings, to contribute to directing human movement within the space, and to contain various activities (Mays, 1990, p. 129). It is also noted that the most important thing affecting the walls is their designs, where the curved walls indicate intimacy, while the regular and balanced walls give a sense of sobriety (Matlin, 1988, p. 180).

On the other hand, the designs of many walls showed a distinct role in designing the place of prayer in the mosque, where the Muslim designer relied on the treatment of the interior walls on the principle of the three-dimensional formation using ribbing and depressions in the walls with the use of brackets and deaf openings of all kinds (Talib, 1989, p. 96).

The formation of different formal vocabulary on the walls, as is found in the designs of the prayer hall in the Prophet's Mosque, in addition to the use of openings in one wall with its repetition and diversity, gives it a distinctive character (Allen, 1985, p. 218). These openings, like doors and windows, are also intended to create a visual connection between the inside and the outside, as in the case of the prayer hall of Al-Aqsa Mosque in Jerusalem. Wall surfaces can also be functionally distinguished by dividing them into shelves and bookcases as a design treatment that matches the interior space design (Allen, 1985, p. 284). It is clear from the preceding that walls are considered one of the most effective vertical levels in defining the size of the interior space and showing its privacy.

2.4.3. Windows

It is the name given to every opening in a building, regardless of size and shape. According to the requirements and need, they are openings in the body of the building of different sizes and shapes (Al-Yawer, 1988, p. 8). From the aesthetic point of view, the designers excelled in their behavior in terms of the width and height of the windows and the quality of their designs in line with the interior design, and this depends on choosing the diversity of their artistic designs in terms of their area (Ahmed, 2003, p. 285).

Therefore, the designer intended to cover part of these spaces with stained glass or openwork patterns, as they were functional in the climatic treatment and aesthetic value. Among the window designs that spread in Islamic architecture are the suns, usually formed on slabs of stone, marble, gypsum, or wood in hollow engraved shapes. The diversity of window designs had an impact on highlighting the traditional character of the aesthetic value and its functional role in introducing air and light (see Figure 2.6) (Eissa, 2021, pp. 309-310).



Figure 2.6. The windows of the Dome of the Rock Mosque in Jerusalem, in which glazed and hollow ceramic tiles were used and made by order of the Ottoman Sultan Suleiman al-Qanuni (Eissa, 2021, p. 310).

2.4.4. Doors in Mosque Architecture

The designs of Islamic mosques represent the critical achievements into which the Muslim designer and architect poured most of his experience and design skills, manifested in the doors' designs. It is noticeable that the word "door" appeared in the Holy Qur'an with many meanings that express mental data with verses and symbolic images of the concepts of status, rank, and living according to what God Almighty says in Surat Al-Ra'd: Verse 23: And angels enter upon them from every door (Younes, 2013, p. 187). While R. Krien defined it as one of the entrance elements, which includes types of constituent vocabulary, and has multiple functional and aesthetic needs (Kerrier, 1988, p. 24).

It is also known that doors have deep concepts not only intended for those visible visual structures, but they have another semantic task of aesthetic and communicative value. At the same time, the designer takes advantage of these parts through their relationship with each other and the relationships of the formations inside them, resulting from dividing the surfaces of the doors into spaces with different geometric shapes. Some decorative units within these forms may be derived from geometric, plant or linear elements and shapes, and all these decorative types may meet in the basic space (Al-Alusi, 2006, p. 34).

This is evident in the designs of one of the sanctuary doors in the Suleymaniye Mosque in Turkey. It is clear from the preceding that the door represents a distinctive architectural element in the buildings of Islamic mosques, especially in the inner sanctuary, as it represents a dividing line between the outside and the inside of the mosque, increasing its aesthetics and vitality. It gives an expressive value based on the prevailing belief in the status of these buildings and their religious sanctities.

2.5. OTTOMAN ARCHITECTURE IN IRAQ

The art of architecture in the Ottoman era manifests modern civil civilization with a global Islamic character. This art originated in Bursa and Edirne in the fifteenth and sixteenth centuries, then moved to Anatolia and from there to the Levant and Iraq. Undoubtedly, Ottoman architecture developed from the previous Seljuk architecture and was influenced by Persian architecture and benefited greatly from Byzantine architecture. The Ottoman Empire lasted nearly 500 years, and during this historical

period, it extended its influence over a wide geographical area and left architectural traces indicating its prowess in this regard and its superiority in this field. Perhaps Iraq, with its ancient cities, is a witness to this, as Baghdad, Basra, Najaf, Kirkuk, and other cities include many mosques and Ottoman facilities.

The style of Abbasid architecture influenced the Iraqi mosques. They have a spirituality not affected by political factors, and they inhale the scent of history in those mosques. Undoubtedly, the architectural progress that the Ottomans reached had repercussions on the mosques that they built or restored in Iraq. The Ottoman Empire left a clear imprint on the architectural style of its cities and added aesthetic and decorative features to the facilities it built.

2.5.1. Stages of Development of Ottoman Architecture

1. The beginning of the urban renaissance: This stage began during the reign of Bayazid the First when he ordered the construction of the Great Bursa Mosque in the year 1396, and then the construction works continued after that (see Figure 2.7) (Zain El-Abidine, 2006, p. 30).



Figure 2.7. Bursa Grand Mosque (*Ulu Mosque*, 2017).

2. Transitional phase: Which began with the conquest of Sultan Mehmed the Conqueror of the city of Constantinople in the year 1453; this historical event that the Prophet Muhammad preached, and with the entry of Muhammad Al-Fatih to the city of Constantinople, he went to the Hagia Sophia Church, announcing the church's conversion into a mosque in which prayers are held. Four minarets were erected on

the corners of the mosque in various periods. Then this mosque, with its towering length and roofed with Byzantine domes, became a model for the mosques established later in that historical stage. During his 30-year rule, Sultan Muhammad al-Fatih built nearly 300 mosques, perhaps the most important of which is the al-Fatih Mosque, which was built in the center of Istanbul in 1463, in addition to palaces, schools, forts, and castles (see Figures 2.8 & 2.9) (Zain El-Abidine, 2006, p. 40).



Figure 2.8. Al-Fateh Mosque (Zidan, 2022, p. 5).



Figure 2.9. Hagia Sophia Mosque (*Hagia Sophia*, 2020).

3. The stage of architectural development: The Ottoman architecture was at the height of its brilliance when Sultan Selim I assumed power in 1512; his rule

continued for eight years, full of battles and conquests. He defeated the Safavid state in the Battle of Chaldiran, which paved the way for the conquest of Iraq. Among that army was a young man named Mimar Sinan, who travelled with the army between ancient historical cities and was acquainted with great architectural monuments. After the death of Sultan Selim I, his son Suleiman the Magnificent assumed power in 1520 (Zain El-Abidine, 2006, p. 48). During his reign, Baghdad was affiliated with the Ottoman states, and in the meantime, Mimar Sinan continued his architectural activity and proved his worth until he was appointed in 1534 as the chief architect, and he was 50 years at the time. Sinan's most important and massive works are in Türkiye.

- First: Suleymaniye Mosque (1557) in Istanbul. (See Figure 2.10).
- Second: Shahzadeh Mosque (1548) in Istanbul. (See Figure 2.11).
- Third: The Selimiye Mosque (1574) in Edirne. (See Figure 2.12).



Figure 2.10. Suleymaniye Mosque (1557) in Istanbul (*Suleymaniye Mosque*, 2018).



Figure 2.11. Shahzadeh Mosque (1548) in Istanbul (Al-Hasani, 2020, p. 209).



Figure 2.12. The Selimiye Mosque (1574) in Edirne (Zidan, 2022, p. 8).

2.5.2. Design Characteristics of Ottoman Mosques

The mosque consists of a garden, a courtyard, and a sanctuary. The inner courtyard has an organized shape, either square or rectangular. It is often surrounded by arcades on four sides with vaulted ceilings, and the courtyard contains the main entrance to the mosque. The sanctuary consists of a few huge interior columns. The entrance to the sanctuary is on the axis of the mihrab. The sanctuary is distinguished by the height of the ceiling, which may reach 40 meters (Al-Hafouzi, 2011, pp. 114-115).

The minaret is often multiple, polygonal in shape, closer to circular, with a conical end of relatively small diameter and a towering height, consisting of one or three balconies in a circular shape. The sanctuary is roofed with a single hemispherical

dome for small mosques. In contrast, large mosques are roofed with one central hemispherical dome surrounded by semi-domes gradually, while the remaining parts of the sanctuary are roofed with small domes.

2.5.3. Iraqi Mosques During the Ottoman Era

1. Al-Muradiyya Mosque: It is considered one of the most important Ottoman mosques in Baghdad, as it was built during the time of the governor of Baghdad, Murad Pasha, and the reign of the Ottoman Sultan Selim II in 1570. The mosque is in the Bab Al-Moazem area on the Al-Rusafa side of Baghdad, about one hundred and thirty metres away from the Al-Azbek Mosque. In 1901, the Ottoman Empire issued a royal order to renew its architecture and rebuild it. The mosque is based on an extremely elaborate geometric pattern, surmounted by a hemispherical dome decorated from the outside with motifs of Kashan, and on its sides are six small, flattened domes. Next to the mosque is the Great Khan El Al-Mouradia.

The mosque building is characterized by its roof and a high minaret. The mosque campus is wide, so it can accommodate more than 400 worshippers, and the total area of the mosque is about 2000 square meters. Al-Muradiyya Mosque in Baghdad and during the Ottoman era included four columns made of one piece of marble (Al-Qusayri, 1981, p. 53).

2. Al-Ahmadiyya Mosque: It is one of the mosques built during the Ottoman Empire's era in Baghdad. It was built by Ahmad Pasha, the deputy of Suleiman Pasha Al-Kabir, in 1796, and the mosque was named after him. After the death of Ahmed Pasha, his building was not completed, and then his brother Abdullah Bey came after him, who completed the mosque building almost a year after his brother's death. Abdullah built the Ahmadiyya Madrasa on the side of Rusafa, east of Al-Midan Square, near Al-Mouradia Mosque. He renewed the building of the mosque several times, the most important of which was the renovation that included the domes and the front façade by the Endowment Office. Construction and reconstruction continued for nearly five years until 1976 (Al-Alusi, 2006, pp. 73-74).

The mosque's area is about 2600 square meters, and it has a wide yard and a sanctuary raised from the ground, and in front of it is a gallery. To the left of the person entering the mosque is a summer sanctuary, and on the sanctuary is a lofty

dome built of coloured Kashani stone with a diameter of 11 meters. At the side of the dome is a high minaret adorned with precious stones. Windows with pointed arches were used, as in the base of the dome of the prayer hall in Al-Ahmadiyya Mosque and Adila Khatoun (Al-Qusayri, 1981, p. 81).

Al-Jami's School is a scientific school called Al-Ahmadiyya School. Media scholars' studies at the school, which is famous in Baghdad. Among the ancient calligraphic relics are paintings on the mosque walls, in which verses from the Qur'an were written in the handwriting of the calligrapher Sufyan Al-Wahbi, who died in 1850 and was buried in the mosque's courtyard.



CHAPTER THREE

3. THEORETICAL FRAMEWORK AND ELEMENTS CHOSEN FOR THE STUDY

3.1. THE INFLUENCE OF THE OTTOMAN STYLE ON CONTEMPORARY MOSQUES IN BAGHDAD

This chapter describes the concept of linguistic communication in mosque architecture, and the aesthetic values that contribute to the continuation of the influence of a particular structural and design style are mentioned. This chapter also studied the materials used to implement structural and design designs. The mosques and structural components that will be studied in the next chapter have also been identified, namely the Blue Mosque as a model of the Ottoman style, the Muradiyya Mosque as a model for the mosques of ancient Baghdad, in addition to the Nidaa Mosque and Umm al-Tabul Mosque as examples of the mosques of contemporary Baghdad.

3.2. THE IMPORTANCE OF DESIGN AESTHETIC VALUES IN COMMUNICATION

Since the design process is a communicative process that depends on the designer's sending party and the receivers receiving party, the designer has a role in demonstrating and highlighting these aesthetic values. A sense of artistic taste must characterise the designer, that is, the ability to perceive the relationships of lines, colours, and raw materials and assemble them in coordinated ways within the shape or composition to finally express a high aesthetic value. Here, the focus appears on developing the ability of artistic taste for both the designer and the recipient, as it is a kind of behaviour that helps the individual make a good choice among the many formations and depends on the following: (Abdeen, 1996, p. 63):

1. Feeling of beauty: The individual's response to aesthetic and artistic stimuli to measure aesthetic sensitivity. Several tests have been conducted to measure this sensitivity and artistic judgement in terms of aspects of artistic taste, the most important of which is the Mayer test for artistic judgement. Distortion is included in Meyer's test of the visual arts in one of the following aspects: consistency, balance, unity, or rhythm.

2. Aesthetic judgement: the extent to which an individual conforms to accepted artistic standards and the degree of compatibility between the judgement issued by the examiner on the artwork and the judgements of art experts
3. Aesthetic Preference: Individuals's aesthetic inclination pushes their im to accept or reject the work of art and their aversion to it.

3.3. THE INFLUENCE OF THE ENVIRONMENT ON AESTHETIC AND FUNCTIONAL DESIGN ELEMENTS

The interior design process is the formation and innovation associated with many internal and external factors intertwined with each other and compatible with achieving the design goal and then in the interior design treatments. This makes the interior designers work according to the requirements of their environmental conditions and be a source for adding design due to the treatments and design proposals they make. In addition to heritage, privacy has a clear impact on interior design, which is an environmental and social circumstance affected by the designer and considered so that each interior space has a specific privacy and style in the interior design of that community (Al-Obeidi, 2005, pp. 55-58).

The functional and aesthetic form of the design elements in the interior spaces, which the interior designer seeks to achieve, represents a profound impact on the surrounding environment with all its characteristics and the values it contains, which stem from artistic awareness, social and civilizational growth, and its response to the requirements of the climate and the contents of social life from traditions and religious beliefs. Hence, the environment has its influence and role in the formation and preparation of designs, as the environment effectively allows design formation.

Moreover, design is at the same time more affected by the place than any other art because it supports the atmosphere in harmony with it. After all, the environment has its specifications based on the design within its context. Therefore, the place is dominant in choosing the design, and the nature of the climate, decorations, and colour shape its aesthetic and intellectual value (Al-Waeli, 1997, p. 16). Therefore, when developing any design, knowledge of the nature of the environment in which the user lives must be considered to create an interactive relationship between the user and the design prepared for him. It also considers the environment's elements

that are easy for the recipient to perceive, as the stimuli of the environment constitute the first steps in the formation of aesthetic taste.

3.4. AESTHETIC DECORATIONS AND DECORATIONS IN MOSQUE ARCHITECTURE

Determining the concept of decoration is related to identifying the concept of the decorative unit. The term ornamental is its simplest form, whether geometric, floral, or linear. A *decorative unit* is a design composition based on a group of geometric, botanical, linear, or mixed items. The design used to be a basic repeating unit along with other items, considering the proportion, compatibility, and harmony between them. The design can also be repeated because it is divided into simple and complex decorative units. It is also clear that the Islamic religion profoundly influenced the development and distinction of this art, as this happened in many Islamic mosques, which affected the interior design of the mosque sanctuary.

3.4.1. Botanical Designs

Botanical motifs represent the finest decorative arts for their aesthetic diversity. The design of plant motifs includes special features in its decorative construction in terms of spatial division. This division is also occupied by floral motifs characterized by different vocabulary and decorative units, and repetitions used implicitly with the design. Therefore, these variations showed one of the most beautiful artistic achievements. Through his technical experience and design skill, the artisan excelled in producing artwork in the most beautiful way within the interior design of the prayer hall space in Islamic mosques. Plant motifs with thin spirals from which the leaves of the cup branch out were also used in the arch of the entrance to the pulpit and the arch of the mihrab of the Adila Khatoun Mosque (Al-Qusayri, 1981, p. 680). Considering the above, the designs of plant motifs with their various decorative types confirm that the Muslim artisan was and still admires nature. He has always used natural elements and vocabulary in his various artistic productions.

3.4.2. Designs for Geometric Motifs

Geometric motifs represent the oldest decoration methods, like other decorative forms, from which they evolved. Archaeologists rely on the fact that ancient man invented geometric shapes that included different types of lines. The Muslim artisan

was also preoccupied with searching for new creative formations arising from the intersection of angles or the intermarriage of geometric shapes, as in the designs of the Ahmadiyya Mosque Gate. It is also possible to identify the mechanism of designing any complex geometric decorative element by analysing its simple initial forms. Considering the preceding, it seems that the Muslim artisan's use of geometric motifs within the elements of the space architecture of Islamic mosques comes from his artistic taste in abstraction and the traditions of Islam (Al-Qusayri, 1981, p. 680).

3.4.3. Arabic Calligraphy Decoration Designs

Decorations have been known in Arabic calligraphy since pre-Islamic times in some civilizations, but under Islam, they had special importance. There is a historical relationship between Arabic calligraphy and the Quranic verses, as it constituted a basic principle since the beginning of the formation of Arabic calligraphy forms and was considered a controversial issue related to the thought of Islamic art. Arabic calligraphy is also distinguished by its ability to be employed in decoration through the diversity of its forms and combinations. It represents the meditation from reading these meanings that carry expressive aesthetic values in their artistic formulation (Al-Qusayri, 1981, p. 680).

3.4.4. Muqarnas Designs

The concept of muqarnas was associated with Islamic buildings because of its aesthetics, as its original Islamic idea began in architecture and interior design. It is noted that the muqarnas was originally a spherical mass consisting of half a dome. It developed into multiple shapes resembling an arc, a semicircle resting on two columns, and above it, a dome resembling the shape of an oyster (Fikri, 1961, p. 163).

The Ottoman era used this type of design to construct most of the mosques erected in Baghdad, such as the mosques of Haider Khana, Al-Muradiyya, Asfia, and Adila Khatoun. From this, it is clear that the essential thing in muqarnas designs of all kinds is the talent of Muslim designers and architects in creating new models that are compatible with the luxury of Islamic buildings, especially in the space of Islamic architecture such as the prayer hall in mosques, by adding lustre to creativity and

continuous innovation, because it represents one of the main features in showing the aesthetic value of the sanctuary's interior design (Al-Qusayri, 1981, p. 76).

3.5. MATERIALS USED IN THE INTERIOR DESIGNS OF MOSQUES

Perhaps the raw materials used in the implementation are essential in the architectural designs of the mosque space, as new methods have been invented. What the natural word means is the natural materials and elements found in nature, which may be mixed with other elements such as stone or raw materials such as different types of marble and alabaster or derivatives of various rocks, or they may be raw materials of plant origin such as the wood of all kinds.

Moreover, here comes the ability of the successful designer, which plays an important role in how his artistic production of design formations interconnects with its architectural elements, as reflected in the interior design of the Islamic Mosque space. Considering the preceding, raw materials play a vital role in the interior design of mosques, which enhances the religious status of these places by giving them the status of luxury (Youssef, 1982, p. 47). Among these articles, we mention the following:

1. Gypsum architecture: Gypsum is a type of rock discovered thousands of years ago. This material has shown the obvious effect of finishing vertical and horizontal surfaces, especially in public and private interior spaces. For centuries, gypsum still met the functional and aesthetic requirements of the interior space, which had a significant impact on the aesthetic design of the interior design of Islamic mosques, for example, the designs of one of the ceilings of the Sultan Ahmed Mosque in Turkey (Rupp & Friedmann, 1989, p. 120).
2. Wooden architecture: Wood is considered one of the basic building materials in interior design, as it covers ceilings and walls and makes doors and some parts of windows. One of the most important methods of implementing wooden designs is engraving on wood in relief and flowing engraving. This method was also adopted in the doors of the Ahmadiyya Mosque in Baghdad through coloring on wood using oil colors and in the designs of one of the domes of the Sultan Selim Mosque in Turkey.

2. Marble architecture ‘alabaster’: This material has shown an influential role in architecture due to its basic specifications and multiple capabilities. Artisans were able to invest it in architectural works because some of them are distinguished by their sculptural compatibility with different shapes, as well as the ease of hand-engraving them with the required accuracy, with the possibility of installing them in any position according to the proposed design (Daoud, 1989, p. 88).

3. Vitrified brick architecture: Vitrified brick plays an essential role due to its specifications and multiple capabilities. Artisans could invest in it because of its sculptural compatibility with different shapes and ease of installation (Daoud, 1989, p. 88). It is clear from this that glazed bricks have a distinctive ability to highlight the aesthetic aspect of the interior design of the mosque sanctuary.

3.6. THE HYPOTHESIS OF THE RESEARCH AND ANALYSIS OF SELECTED MOSQUES WITHIN THE SCOPE OF THE RESEARCH

There are some old mosques in Baghdad that date back to a time when they were built before the period of Ottoman rule. However, most of these mosques have lost their basic design due to some restoration work that took place in the past, which did not consider the importance of the basic design of these mosques. At the same time, some mosques in Baghdad were established during Ottoman rule. One of these mosques is the Al-Muradiyya Mosque. It is considered one of the ancient mosques in Baghdad and contains great interest for what it represents of the heritage value of the city.

In addition, Al-Mouradia Mosque maintains its basic design so that it can be studied and analyzed. Some sources indicate that Al-Mouradia Mosque was designed by the famous Ottoman designer Sinan, so it would be an ideal choice to study it and identify the features of the Ottoman style in it to facilitate the process of tracing the influence of the Ottoman style on Iraqi architecture, it will be assumed that the construction of Al-Mouradia Mosque in the Ottoman style is the beginning of the entry of the Ottoman style into Baghdad. This will be done by comparing it with the Ottoman mosques in Turkey, such as the Rustem Pasha Mosque, one of the Ottoman-style mosques in Turkey, which can be analyzed and studied as a model for the Ottoman style.

The Sultan Ahmed Mosque, also known as the Blue Mosque, was designed by students of Mimar Sinan. It is possible to benefit from this point when comparing the contemporary Baghdad mosques built by Iraqi engineers with local designs combined with features of the Ottoman style in mosque construction. Among these mosques, which will be studied, are the mosque of Umm al-Tabul and the mosque of al-Nida. They are two contemporary mosques distinguished by their unique designs that reflect the art of non-traditional mosque architecture in Baghdad.

By watching their structural engineering of them, it can be noticed their influence on Ottoman architecture, so they were chosen for study and analysis to track the continuation of the influence of the Ottoman style on the architecture of contemporary Iraqi mosques to prove that the influence of the Ottoman style is still continuous and continuous until now in Iraqi architecture.

Summary of the preceding during this research, the features of the Ottoman style in the contemporary mosques in Baghdad were traced and diagnosed by comparing the Al-Muradiyya Mosque in Baghdad with the Al-Zarq Mosque in Turkey to prove the entry of the Ottoman style into the mosques of Baghdad during the period of Ottoman rule. Umm Al-Tabul Mosque and Al-Nida Mosque in Baghdad were also compared with the Blue Mosque to prove the continued influence of the Ottoman style on contemporary mosque architecture in Baghdad.

3.7. AXES OF COMPARATIVE ANALYSIS OF THE ELEMENTS SELECTED FROM THE MOSQUES

During this research, a comparison was made between the selected mosques by studying five main axes:

1. Characteristics of the planning style, including the courtyard of the mosque, the sanctuary, and the front porch.
2. Characteristics of the basic architectural elements, including the minaret.
3. Characteristics of the structural and architectural elements, including columns, arches, and domes.
4. The aesthetic decorations and decorations used.
5. Materials used in interior designs.

CHAPTER FOUR

4. ANALYSIS AND COMPARISONS OF SELECTED MOSQUES

In this chapter, the Al-Muradiyya Mosque, which is considered one of the ancient mosques in Baghdad, was studied and analyzed and compared with one side of the Iraqi mosques that preceded the Al-Muradiyya Mosque, and the other hand, compared with the Ottoman mosques that represent the Ottoman style in Turkey. Umm al-Tabul and al-Nida mosques in Baghdad were also studied, analyzed, and compared with the Ottoman mosques in Turkey. The mosques selected for the study were compared through the architectural designs of the mosque's basic and structural components and the design of the aesthetic decorations and decorations used, in addition to the materials used in the interior designs.

4.1. AL-MOURADIA MOSQUE

Al-Mouradia Mosque is in Baghdad on Al-Rasheed Street, opposite the old Iraqi Ministry of Defense. The mosque is attributed to the governor, Murad Pasha, who ordered its construction around 1570. The sources indicate that the mosque was renovated in 1901-1903, which Al-Qusayri states that the layout of the mosque was not changed, but it was rebuilt while preserving its planning style and the style of its original elements, as the mosque was maintained by the Ministry of Awqaf in the years 1973, 1963, 1956, 1952, 1950, and 1920 (Al-Alusi, 2006, p. 84-85).

After reviewing a group of previous studies on Al-Muradiyya Mosque and the mosques that were built before it in Baghdad, such as the study of Ali Asif (2012), Mahmoud Zain El-Abidine (2006), Al-Omari (1989) and Al-Amiri (2010), it was possible to identify the basic components of Al-Muradiyya Mosque. These components can be used to study and analyze the architectural style used in each planning style, including the courtyard, the sanctuary, and the front porch, as well as the basic architectural elements, such as the minaret, in addition to the structural elements, which include columns, arches, and domes.

As for a reason for selecting these components only, it is due to the possibility of obtaining information about the elected components, whether from books and sources or in the field, and the assertion of these proposals that these components

maintain their original characteristics and not be subjected to fundamental changes, which does not apply to some unelected components. Also, due to the difficulty of dealing with all the components in detail and scientific accuracy within the limits of one research.

4.1.1. Planning Style

A- Characteristics of the planning style in Al-Mouradia Mosque: The mosque has a sanctuary overlooking an open courtyard. The sanctuary is rectangular. The southeastern and northwestern walls have a gate in the middle of each of them. The staircase leading to the roof is located on the northwest wall of the sanctuary, which overlooks the courtyard. As for the sanctuary's back wall, the main entrance is in the middle. As for the front porch, it is rectangular and overlooks the courtyard with three openings. The minaret occupies the north-northwest corner of the portico. In general, the planning pattern of the sanctuary is based on a large square-shaped central hall in the middle of the sanctuary covered by a large dome that sits on four marble columns and four pillars attached to the walls, giving the hall its octagonal shape. The front porch is divided into five space units using arches that sit on pillars, each covered by a small dome (see Figure 4.1).

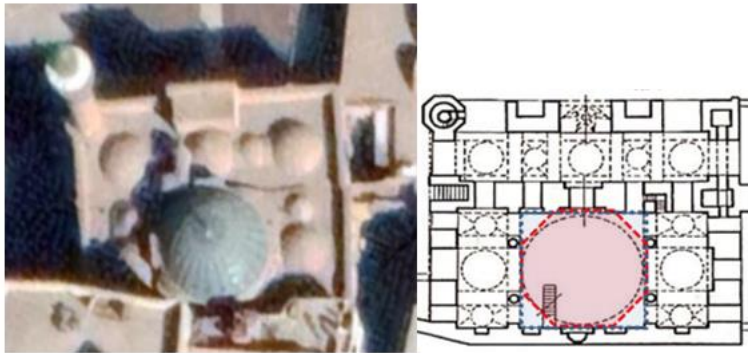


Figure 4.1. Al-Mouradia Mosque sketch (Fahmi, 2018, p. 8).

B- Characteristics of the planning style of the previous local mosques of the Al-Muradiyya Mosque: When reviewing the models dating back to the first five Hijri centuries in Iraq, it appears that the mosque's plans consisted of a wide hall house, two sides, and a rear surrounding a wide-open courtyard. As for the inside of the sanctuary, a group of columns or pillars were formed, at the top of which were joists or arches bearing a flat ceiling, or the ceiling sat directly on them. These mosques

were also distinguished by the equal capacity of their naves, except for the mihrab slab, which was wider. As for the walls of mosques, they were fortified (see Figure 4.2).

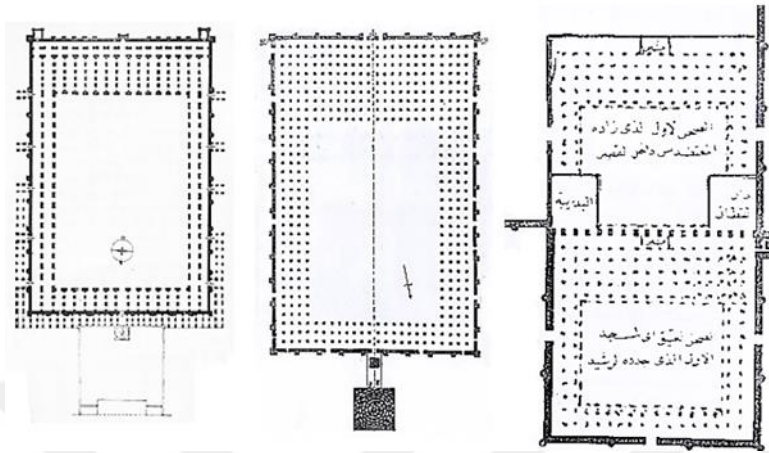


Figure 4.2. Sketch of some mosques in the first five Hijri centuries (Fahmi, 2018, p. 8).

As for the medieval period in Iraq 12-14 AD, which witnessed the dominance of several Arab and foreign dynasties, development and renewal began to creep into the planning of mosques, as in the Al-Nuri Mosque 1171-1173, which was ordered to be built by the Atabeg king Nur al-Din Mahmoud bin Zangi. In addition to the mosque of Mujahid al-Din 1180-1176, which Mujahid al-Din ibn Qaymaz, the mastermind of the state of Ibn Zangi from the Atabek-Seljuq era in Mosul, built. The most prominent features of these mosques are that they are small, as their massive walls have disappeared, while the open courtyard that may surround the sanctuary remains. The main difference is that the rectangular sanctuary has become closed in the Al-Nouri Mosque (see Figure 4.3).

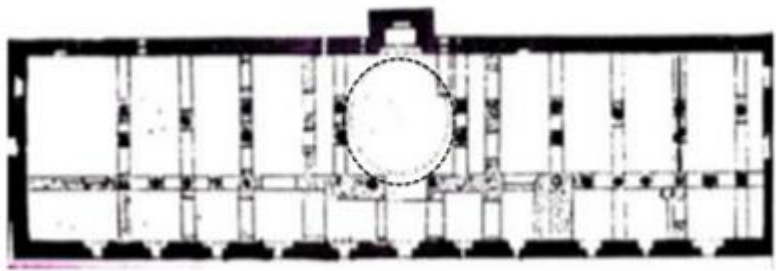


Figure 4.13. Sketch of Al-Nouri Mosque in Mosul (Fahmi, 2018, p. 8).

C- Comparison of the characteristics of the planning pattern of the Muradiyya Mosque with the characteristics of the planning pattern of the previous Iraqi mosques: The comparison shows that the planning of the Muradiyya Mosque differs from the patterns of the mosques of the first five Hijri centuries and the planning of mosques of the 12-14th centuries AD in Iraq, as it shows basic changes from the planning patterns of the Al-Nuri Mosque. The central planning system with one dome, where the dome was used for roofing, which was used for the first time in Iraq, and this is consistent with the proposal of Al-Qusayri (Al-Qusayri, 1981).

D- Characteristics of the planning style of Ottoman mosques in Anatolia: The plan of the Ottoman Mosque was distinguished by its geometric shape, which includes an open courtyard surrounded by arcades on four sides covered with domes. The sanctuary was a large central square, hexagon, or eight halls covered by a large dome carried on pillars or pillars. Halves, quarters of domes, or small domes surrounded the dome. The main pillars were either built into the walls or independent (Asif, 2012, pp. 40-57).

As for the Rustem Pasha Mosque, it was designed and built by Sinan in the year 1563-1561, that is about nine years before the construction of Al-Mouradia; noting that the construction of the Al-Mouradia Mosque was associated with the period of activity of the architecture of the Ottoman Empire, Sinan (1540-1585).

The sanctuary of Rustem Pasha Mosque is rectangular and includes a square central hall transformed into a hall with a basic octagonal structure formed by the pillars in the hall. On each side of the central hall is a nave covered by a vault. As for the central dome, it is raised on a neck that sits on an octagonal base. The dome rests on eight octagonal pillars, four of which are wall and four free, interconnected by semicircular arches. The prayer hall is also covered in its diameter by four partial domes. The sanctuary is preceded by a portico located in the northeastern façade and surmounted by five domes. Another external portico with a sloping roof is attached to this portico, while the minaret appeared in the western corner of the hall (see Figure 4.4).

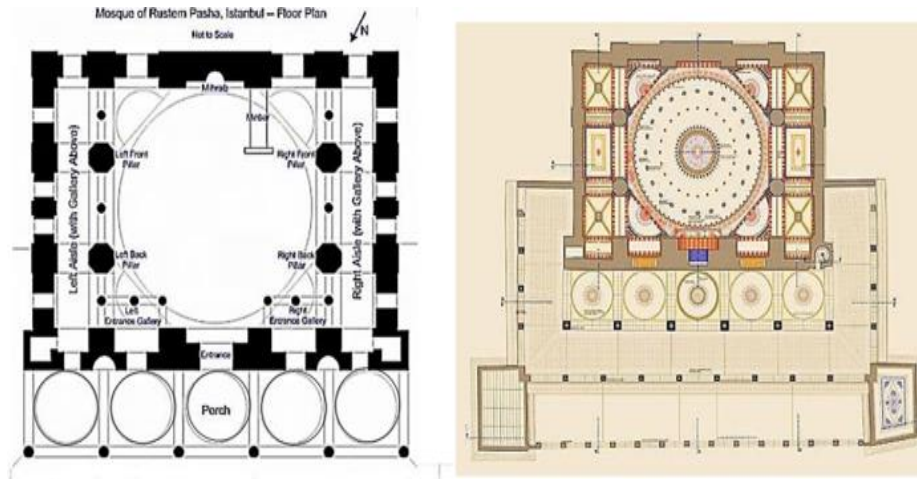


Figure 4.4. Rustem Pasha Mosque Sketch (Fahmi, 2018, p. 8).

E- Comparison of the characteristics of the planning pattern of the Muradiye Mosque with the characteristics of the planning pattern of the Ottoman mosques in Anatolia: The comparison shows the similarity of the planning pattern of the Muradiye Mosque with the Ottoman mosques in Anatolia in general, especially those belonging to the architect Sinan, as the Rustem Pasha Mosque, which was previously built by the Muradiye Mosque, stood out among them. This similarity is represented in the level of: The rectangular shape of the sanctuary, divided into three bays and three naves, the widest of which is the mihrab slab, which turned into a square central hall. Due to the method of distributing the supports, the hall becomes octagonal to easily cover it with a large central dome based on the arches supported the ports.

As e side naves, they were divided into three space units by the pillars, columns, and arches that hold them, to be covered by Al-Mouradia Mosque's domes and vaults in the Rustem Pasha Mosque. The similarity also appeared at the front porch level, divided in Al-Mouradia Mosque into five space units covering domes using arches. In comparison the walls, in the Rustem Pasha Mosque were divided into five units as well, covered by five domes supported by arches that sit on the columns overlooking the courtyard on the one hand and the walls. On the other hand, the similarity appeared in the location of the minaret near the sanctuary, as it occupied the northwest corner of it, as well as the way to climb to it from a door that overlooks the outside of the sanctuary, which overlooks the courtyard.

4.1.2. The Basic Symbolic Architectural Elements of The Minaret

Al-Mouradia Mosque has only one minaret, which is in the northwest corner of the front gallery wall. The base of the minaret is octagonal, rising as high as the sanctuary's surface, after which the body of the minaret becomes cylindrical. The cylindrical body consists of two parts. The first extends from the sanctuary roof to the basin, supported by four rows of muqarnas, on which the minaret balcony rests. As for the second complementary part of the body or the neck, it is more elegant and crowned with a ribbed dome. The body of the minaret was decorated with colored and decorated Kashani panels. As for the building material, it was brick and plaster. Brick decorations were also used with glazed bricks (see Figure 4.5) (Salman, 1982, p. 239).



Figure 4.5. The minaret of Al-Mouradia Mosque (Fahmi, 2018, p. 11).

The Iraqi minarets before the Ottoman period were distinguished by the following: Concerning their bases, which were mostly decorated with bows, niches, and decorations, they were polygonal, ranging between square, octagonal, hexagonal, and twelve. As for their bodies, they were mostly cylindrical, with examples of helical and octagonal bodies appearing. The cylindrical bodies varied in height, thickness, and decorations, but most contained one basin, and the ascent to the basin was through a spiral staircase or two ladders inside the body.

In general, the neck of the previous Iraqi minarets was lighter than the bodies below the basin. The basins were seated on the bodies and protruded from them by supports consisting of several rows of muqarnas. Finally, the bodies of these cylindrical

minarets were crowned with hemispherical pointed or often polygonal domes. As for the building material, it was brick and plaster. Brick was also used in decorative works and glazed and colored bricks (see Figure 4.6) (Salman, 1982, p. 242).

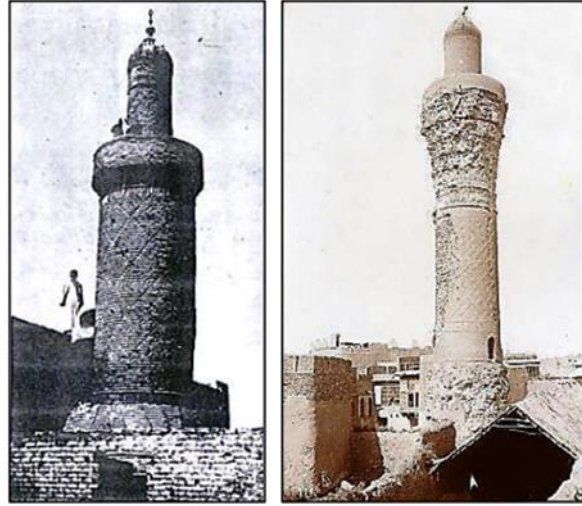


Figure 4.6. Minarets in ancient Iraqi mosques (Fahmi, 2018, p. 11).

As for the comparison of the characteristics of the basic elements of the minaret of Al-Mouradia Mosque with the characteristics of the minarets of the previous local mosques, the minaret of Al-Mouradia Mosque shows similarity and clear communication with the basic characteristics of the previous Iraqi minarets. The shape of its octagonal base, its cylindrical body, its brighter cylindrical neck, its basin seated on rows of muqarnas, its hemispherical top, and even the pattern of its decorations, decorations, and building and decoration materials depend on bricks and plaster, concerning the characteristics of the basic elements of the minaret of the Ottoman mosques in Anatolia, the Ottoman minarets were distinguished by their pointed cylindrical or conical shape, height, and grace.

In the era of Sinan, the shape of the minaret became closer to the polygonal cylindrical shape with a pointed conical top. The minaret consisted of the minaret head, the body, and the base (see Figure 4.7). In general, the minaret's base is attached to the western or northwestern wall of the mosque or at the last row of the mosque. It is also possible to enter the minaret either from inside the sanctuary, through the last row of the sanctuary, or an external door open to the courtyard. The body included the balcony, which may be one, two, or three, and sits on rows of muqarnas. The stones were the main building material, and the lighthouse's base

decorations were stone decorations. The body of the minaret was closer to the polygonal trapezoid, and the decorations were used under the balconies or in their walls and the form of stone quarries (Zain El-Abidine, 2006, p. 40).

Figure 4.7. Formation of the minaret during the reign of Sinan (Zain El-Abidine, 2006, p. 69).

4.1.3. Symbolic-Structural Architectural Elements

Columns: The sanctuary in Al-Mouradia Mosque included four alabaster columns surmounted by a capital in the form of an incomplete and inverted cone. The base is square from the top and circular from the bottom. The body sits on an alabaster base that resembles a crown but is inverted. The House of Prayer also included twelve pillars attached to its walls and protruding from it (See Figure 4.8).



Figure 4.8. Columns in Al-Mouradia Mosque (Fahmi, 2018, p. 13).

Arches: The arches of the House of Prayer are pointed with four centers. As for their distribution, they consist of six arches standing above two rows of columns and perpendicular to the qibla wall. To convert the square base on which the dome of the mihrab slab sits into an octagon, four more arches were erected in the corners of the mihrab slab, which were placed diagonally. There are two other arches, one in the middle of the qibla wall and the other in the sanctuary's back wall. As for the side slab only, it included two rows of arches parallel to the qibla wall, an existing arch in the qibla wall, and another in the rear wall.

In general, the arrangement of these vaults led to the division of the side slab into three square sections, which facilitated roofing it with domes. As for the front porch, the wall of the back of the mosque overlooks it with five-pointed wall arches, which are matched by five other arches in the inner wall of the front porch overlooking the courtyard. The portico overlooks the courtyard with arches at both its eastern and western ends. Four other arches were erected perpendicular to the wall of the back of the mosque.

These pointed arches with four centers helped divide the upper part of the portico into five square spaces, each with a dome roof (Al-Qusayri, 1981). Concerning the vaults built with bricks, they appeared in the mosque, and they roof each of the following: the entrance spaces, doors, and windows in the walls of the sanctuary, the corridor leading to the roof of the sanctuary, and the iwan standing at the front of the front porch (see Figure 4.9).



Figure 4.9. The patterns used on the front porch of the mosque (Fahmi, 2018, p. 13).

The domes were used for roofing the house of prayer, the front porch, and the forum parallel to the qibla wall. They were all hemispherical, and the number reached seven domes above the house of prayer, as follows:

The dome of the mihrab slab is the largest dome in the mosque, with a diameter of 10 m and a height of about 10.9 m. This dome rested on a cylindrical neck that included windows for lighting. Regarding the solution to the issue of the circular dome sitting over the center of the square mihrab slab, it was by erecting four columns and four pillars above the mihrab slab and then establishing arches over these columns and pillars, which led to obtaining triangles between the shoulders of the arches, thus turning the octagonal shape into a circular one. The surface of these triangles was divided into three rows of muqarnas (see Figure 4.10).

Domes were also used in the side naves, the front porch, and the forum, as each side nave was roofed with three small domes. As for the portico, it was roofed with five domes, and triangles were used to secure the circular domes sitting on their ribbed bases. Regarding the roofing of the forum, a new method was followed, using the dome and its halves, and the dome here sits on spherical triangles. In general, all the spherical pendentives in Al-Mouradia Mosque are decorated with rows of muqarnas, and brick and stucco were the building materials used in the construction of pillars, arches, domes, and vaults (see Figure 4.11).



Figure 4.10. The dome of Al-Mouradia Mosque and the columns supporting it from the inside and outside (Fahmi, 2018, p. 13).



Figure 4.11. Some small side domes, where one of them sits on half domes, and one of the three domes of the side nave (Fahmi, 2018, p. 13).

B- Characteristics of the architectural and structural elements of the mosques and local mosques that preceded Al-Mouradia Mosque:

Columns: The mosques of the first five Hijri centuries in Iraq were distinguished by the massiveness of their walls and their reinforcement with circular towers with square or rectangular bases, as in the Al-Mutawakkil Mosque, whose roof was based on bridges raised by arches resting on pillars and pillars. These pillars were octagonal with quadrangular bases, decorated with cylindrical marble columns at their corners. The Kufa Mosque included cylindrical marble columns with crowns in the form of an incomplete inverted pyramid decorated with bases. In contrast, the Mosque of the Pilgrims columns were cylindrical stone.

In the Al-Ukhaydir Mosque, cylindrical pillars appeared with square bases, and rectangular pillars appeared in the Abu Dalif Mosque. As for the sanctuary of Al-Nouri Mosque, it included huge pillars, while the front porch included graceful cylindrical columns. As for the sanctuary of Mujahid, al-Din Mosque included separate pillars and other rectangular walls, while the front porch included graceful square marble columns. The Sumerians also used pillars (Güngör, 1987, pp. 156-167). Arches and domes: The pointed arch are the most used type in Iraqi mosques, and the oldest examples appeared in Ur (2800-2371 BC).

Iraqi architecture had many types of arches during the first five Hijri centuries, including the two-centered and lobed arch in the Al-Mutawakkil Mosque and the civil and pointed inflated arch in the Abu Dalif Mosque. These arches were also used in different places, such as entrances, window openings, niches, and niches, and as deaf wall arches. As for pointed arches, it was indicated that they might be used in Al-Mutawakkil Mosque (Salman, 1982, pp. 34-35). During the thirteenth and fourteenth centuries, the pointed arch played a major role in Iraqi buildings. It appeared in two patterns: dual or quadruple in the center, and the latter was used in Iraqi buildings, especially the iwans, bridges, arches of vaults, and in the three-arched entrances, niches, and passages. Pointed arches also play an important role in the large, knotted protrusions that usually surmount the entrances to schools and soils and act as a framework for the writings of that period.

In general, the types of arches that were used in Iraqi buildings during the above two centuries are: pointed, civil, semi-circular, lobed, compressed, and level. The elongated pointed arch appeared bearing the sanctuary's ceiling in the Al-Nuri Mosque, just as the elongated pointed arch appeared in the portals of the front porch

of the same Mosque. As for the Mujahid al-Din Mosque, pointed arches appeared in the outer gallery overlooking the courtyard, and pointed arches appeared in the sanctuary of the same Mosque (Al-Janab, 1983, p. 426).

Domes: The history of Iraqi architecture was also full of domes, as they were seen above al-Mansur's palace, and conical domes appeared above the shrines during the Ilkhanid era (Al-Qusayri, 1981). The propositions of Isa Salman and others emphasized the non-dominance of hemispherical domes in general within the traditions of Iraqi architecture. At the same time, other treatises indicated that the roof of the sanctuary in the Mosque of Qamariyya in 1228 was also roofed with six small and low hemispherical domes and that spherical triangles appeared in the domes of prayer houses in Baghdad during the Abbasid era. These triangles are sometimes decorated with muqarnas (Salman, 1982, pp. 33-34).

Many renovations and restoration work that these mosques went through makes it difficult to determine the extent to which they have preserved their original characteristics and whether these domes are original or were built during the renovation works in the Ottoman periods that followed the construction of Al-Muradiyya (Salman, 1982, p. 235). The building materials used to construct the columns in Iraqi architecture before the Muradiyya ranged from stone, marble, and wood. In contrast, using bricks and plaster prevailed in constructing pillars, arches, vaults, and domes.

C- Comparison of the characteristics of the architectural elements of Al-Mouradia Mosque with the characteristics of the same elements of previous local mosques: The comparison shows that the characteristics of the columns in Al-Muradiyya are similar and continue with the characteristics of their ideals in the previous Iraqi buildings of Al-Muradiyya, whether dating back to the tenth or twelfth centuries or before. In those buildings, models of marble columns with cylindrical bodies and conical or inverted pyramidal capitals were found. Concerning the pattern of pointed quadrangular arches that appeared in the Al-Muradiyya Mosque, it also showed similarity and continuity with the pointed arches of all kinds, which abounded in the history of Iraqi architecture in general, and those that were used during those centuries above in Iraq. The earliest examples are the pointed arches in the sanctuaries of Al-Nouri Mosque and Mujahid Al-Din.

The same applies to the domes of the sanctuary and the front porch in al-Muradiyya, which continued with the traditions of Iraqi mosque architecture, especially with the domes of the new styles of mosques in the two centuries above, such as the mosques of al-Nuri and Mujahid al-Din. In addition to communication on the shape, location, and nature of use concerning vaults and domes, similarities and communication appeared at the level of building materials, which relied mainly on bricks and plaster. As for the transformations that can be considered developments and renovations and not fundamental changes that cause a change during communication about the structural elements that were used in the previous local architecture, they can be summarized as follows:

- The use of marble columns with pillars attached to the walls to carry the main dome instead of the previously separate and connected pillars, the first of which appeared in Iraq in the Mujahid al-Din and al-Nuri mosques.
- The use of small domes to roof the side naves and the front porch by dividing these spaces into smaller units using pointed arches that sit on columns or buttresses with the use of muqarnas triangles in the transition stages of the domes.
- The portico in the Al-Muradiyya Mosque overlooks the courtyard through a façade that includes entrances, eaves, and openings, which represents a new, innovative addition that had not previously existed in the architecture of Iraqi mosques that preceded Al-Muradiyya (Al-Qusayri, 1981).

Finally, it must be noted the emergence of a new addition at the level of roofing in Al-Mouradia Mosque that does not communicate with its local predecessors and represents a change during communication that resulted from the borrowing of architectural elements and the method of roofing of foreign origins, as we did not find local examples that preceded it. The roof of the forum represented it in the sanctuary with a dome in the middle supported by the side semi-domes.

D - Characteristics of the architectural elements in the Ottoman mosques in Anatolia:

Columns: The Ottoman mosques relied on huge columns to support the large dome of the sanctuary in addition to the main pillars, which may be built into the walls or independently. As for the columns in the outer galleries or under the inner balconies,

they were graceful. In general, the galleries were a single slab surrounding the courtyard, except for the front porch, which sometimes consisted of one porch or two porches (See Figure 4.12) (Zain El-Abidine, 2006, p. 48).



Figure 4.12. Columns of the front portico of Rustem Pasha Mosque (*Rüstem Pasha Mosque*, 2023).

Arches and domes: The pointed arch appeared as one of the most prominent patterns of arches in the buildings of Ottoman- Anatolian mosques and was used as arches bearing domes or framing door and window openings, as in the Sulaymaniyah Mosque 1550, Rustam Pasha 1561, Selimiye 1568, and others. Ottoman architecture also used semicircular arches (see Figure 4.13).

As for the dome, it was the main element in the architecture of Ottoman mosques. The domed baldaquin was seated on a square, hexagonal, or octagonal base. The Ottomans used types of elements to make the semicircular dome sit on square bases such as Pendentives, Squinches, and half or parts of the domes with the addition of supports and support towers on the outside. The main buttresses can either merge with the walls or remain separate. In the case of the dome on an octagonal base, the corner bends and the corner vaults were used in the corners. When these eight points are strengthened in the supporting walls by columns, it forms the octagonal canopy that Architect Sinan employed in the Rustem Pasha Mosque 1561 and others.

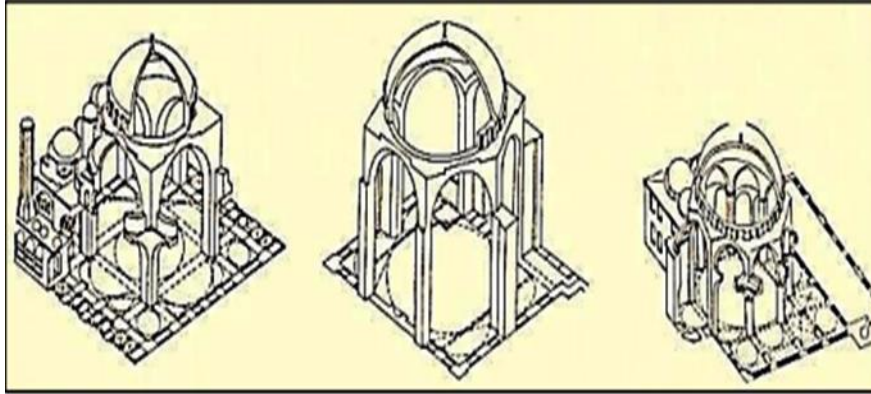


Figure 4.13. Vaulted Canopy Variations (Doğan, 2010).

The octagonal or circular neck above the square structure appeared on the outside, while the lighting windows appeared in the neck or the bottom of the dome's body (Güngör, 1987, pp. 156-167). In general, the Ottomans, especially the architect Sinan, used three types of structural systems to transfer the forces of the dome through different structural levels through supporting and other auxiliary elements to the ground, namely: the square, hexagonal, octagonal, and the last system used in the Rustem Pasha Mosque (see Figure 4.14) (Kuban, 1987, pp. 73-97).

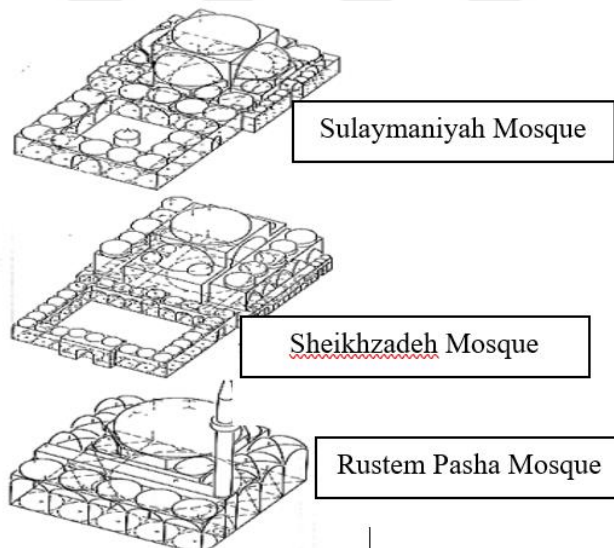


Figure 4.14. The dome and its distribution in Sinan mosques (Fahmi, 2018, p. 17).

E- Comparison of the characteristics of the architectural elements of Al-Mouradia Mosque with the characteristics of the same elements of the Ottoman mosques: The comparison shows the similarity of the characteristics of the architectural elements of the Muradiye Mosque with the characteristics of the same elements in the Ottoman

Anatolian mosques in general and those of Sinan. It represents the similarity at the level of each of the following:

- Concerning the columns and pillars attached to the walls in Al-Mouradia Mosque, the comparison showed that they were also employed in the Anatolian mosques. However, the latter was used for separate pillars attached to the walls and in various forms to support the large dome. While the dome appeared above the Muradia, sitting on separate columns and connected supports. The similarity was evident in the style and use of these elements to carry the large dome and the small domes.
- The similarity also appeared in the use of pointed, quadruple-centered arches in Al-Mouradia Mosque, whether those that sit on columns or pillars, cover the entrances and windows, or form the silent wall openings, as the same arch appeared with the same user in Anatolian mosques. The domes showed a clear similarity regarding the general shape, location, usage pattern, and construction method. This similarity appeared in the Muradiye Mosque and other Anatolian mosques, such as the Rustem Pasha Mosque in the large circular dome that sits on a neck that, in turn, sits on an octagonal structural system. This octagonal system arose by distributing the columns and supports on which the pointed arches sit in a way that transforms the central square space into an octagon, using spherical triangles to transform the polygonal base into a circular one.
- The same applies to the smaller domes in the ceilings of the side naves and the sanctuary's front porch, as spherical triangles were used in them.
- Similar examples have been found in the Anatolian buildings that precede Al-Mouradia Mosque. The Rustem Pasha Mosque was one of the examples that resembled Al-Mouradia Mosque in terms of the structural elements, especially the arches and domes in the manner of their forms and the pattern of their employment and construction.
- The obvious similarity appeared - despite the small scale in which it appeared in Al-Muradiyya - in the use of the dome system that was supported by small domes on both sides, which roofed the forum in Al-Muradiyya, as the origins of this system go back to the Byzantine architecture prior to the Ottoman

Empire in Anatolia, which was performed by the architect Sinan, many developments appeared in the buildings he built. As for the difference in the level of the architectural and structural elements in Al-Mouradia from the Ottoman mosques, it is represented by the following:

- The difference appeared at the level of the front porch, the method of its attribution, and its view of the courtyard, as it relied in Al-Mouradia Mosque on using a facade that includes entrances, eaves, and openings. In comparison, Ottoman-Anatolian architecture adopted portals overlooking the court through graceful columns supporting the roof of the front porch from the side of the court.
- A clear specificity emerged for the architecture of Al-Muradiyeh from the Anatolian mosques. The type of building material represented it, as brick and plaster were the most important materials used in Al-Muradiyeh. In contrast, Ottoman-Anatolian architecture relied on stone as a basic material. One of the reasons for this is the availability of building materials in the region and the entrenchment of building traditions in the region where the building is being built.
- Another important difference appeared in the employment of the iwans in the façade of the portico overlooking the court in Al-Mouradia. We did not find similar in the corridors overlooking the courtyard in the Ottoman Anatolian mosques. Similar examples were found in the Anatolian buildings that preceded the Al-Mouradia. However, they were usually added at the front of the main entrance to mosques or schools, with ceilings in the form of a cylindrical vault or a muqarnas dome from the inside, and not in the facades of the winter sanctuary, as in the Al-Mouradia.

4.2. THE RESULTS OF THE COMPARATIVE ANALYSIS OF THE CHARACTERISTICS OF THE PLANNING STYLE IN AL-MOURADIA MOSQUE

1. With the mosques that preceded it, the comparison shows that the layout of the Al-Muradiyya Mosque differs from the patterns of mosques that appeared from the third to the twelfth century in Iraq regarding the use of a single central dome system. The front porch is also divided into space units using arches that sit on pillars and cover each of them with a small dome, and this is not found in the Baghdad mosques that

preceded the Moradia Mosque. However, it does not differ from those mosques in terms of the basic layout of the prayer hall.

2. With the Ottoman mosques: The comparison shows a great similarity between Al-Mouradia Mosque and the Ottoman mosques in terms of the planning pattern at the level of the octagonal central hall covered with a central dome and the method of roofing the front porch by dividing it into space units covered with small domes, as well as the location of the minaret. The difference in the size of the hall, the dome, and the mosque in general, as the Muradiye Mosque is much smaller than the Ottoman mosques.

4.2.1. The Results of The Comparative Analysis of The Characteristics of The Basic Architectural Elements in the Minaret

1. With the mosques that preceded it: Comparative analysis shows that there was no fundamental change in the shape of the minaret of the Al-Muradiyya Mosque and its general plastic characteristics, building materials, and decoration when compared to the minarets of Iraqi mosques and mosques that preceded Al-Muradiyya. Thus, the minaret as an essential architectural element in Al-Mouradia Mosque showed clear continuity with the characteristics of minarets in previous Iraqi mosques and mosques.

2. With the Ottoman mosques: The comparison shows that the minaret of Al-Mouradia Mosque is not like the minarets in the Ottoman mosques. The similarity with the Ottoman minarets was linked only to the level of the minaret's location about the sanctuary, as Anatolian examples appeared that preceded it and are like it in the location of the minaret about the mosque and the place of entry.

4.2.2. Results of the Comparative Analysis of The Characteristics of The Architectural Elements of Al-Mouradia Mosque

1. With the previous mosques: The comparative analysis shows that the characteristics of the columns and pillars showed similarity in shape and size, and thus a connection with the characteristics of the same elements in the previous local mosques and mosques. There are differences in use and employment, as marble columns were used with pillars attached to the walls to carry the main dome instead of separate pillars. Also, using small domes for roofing the side naves and the front

porch by dividing these spaces into smaller units using pointed arches on pillars or pillars. Furthermore, this is with the use of muqarnas triangles in the transition stages of the domes, which appeared in a style that had not been seen in previous local mosques and mosques.

2. With the Ottoman mosques: The comparative analysis shows a similarity in the employment and use of columns and pillars attached to the walls in Al-Mouradia Mosque with the Ottoman mosques, where the dome appeared above Al-Mouradia sitting on separate columns and connected pillars. The similarity was also evident in the employment pattern and use of these elements to support the small domes. The use of quadrilateral pointed arches in Al-Mouradia Mosque, whether those that sit on pillars or pillars, cover the entrances and windows, or form blank wall openings, is like the use in Ottoman mosques.

The same shapes appeared with the same use in some mosques. At the level of the central dome, it showed a very clear similarity in terms of the general shape, location, style of use, and method of construction, as the dome appeared in Al-Mouradia Mosque similar - albeit on a smaller scale with the Rustem Pasha Mosque, where the construction was. The large circular dome that sits on a neck that, in turn, sits on an octagonal structural system appeared by distributing the columns and supports on which the pointed arches sit in a way that turns the central square space into an octagon, with the use of spherical triangles to transform the polygonal base into a circular one.

4.3. CONTEMPORARY MOSQUES IN BAGHDAD

Several mosques built in Baghdad during the last century can be studied. However, the choice fell between Umm Al-Tabul Mosque and Al-Nida Mosque, and therefore because of their unique design, they are located in the center of Baghdad, the first on the Karkh side and the second on the Rusafa side. It will be studied and analyzed by studying some architectural elements and aesthetic designs such as the dome, the minaret, columns, windows, the design of the prayer niche and the pulpit, in addition to the decorations used to decorate the walls and ceilings, with a comparison of these elements with their counterparts in Ottoman mosques and identifying points of similarity and difference, if any. To facilitate the study and analysis of the mosques

selected above, the elements will be identified and analyzed for both mosques, as well as comparing them with the same elements found in the Ottoman mosques. Before that, it should be mentioned more about both collectors through a historical overview of them, as follows:

1. Umm Al-Tabul Mosque

Umm al-Tabul Mosque is the most famous and largest mosque in Baghdad. It was designed and built by the Iraqi architect Adnan Yusuf al-Qudsi. It is now registered in the Awqaf Office under Umm al-Tabul Mosque. After 2003, Umm al-Tabul Mosque was called the Ibn Taymiyyah Mosque; it reverted to its original name. It was an arena for training army personnel in shooting. It was located outside Baghdad at the time. During training, drums were beaten at the beginning and end, hence the name. It is one of the most luxurious modern Baghdad mosques. It is located on the outskirts of the Yarmouk area towards the city of Bayaa at the highway's entrance leading to Baghdad International Airport.

Its area is about 15,000 square meters, accommodating about 1,500 worshipers. Its construction was completed in 1968. It is a large building surrounded by gardens, as the mosque is bordered on the direction of the qiblah by Baghdad International Airport Street, Al-Amel neighborhood, and Al-Bayaa neighborhood. From the east of Baghdad Street to Al-Hilla and Al-Qadisiyah neighborhoods, and from the west and north by the Al-Yarmouk neighborhood, the main door is in front of the Al-Qadisiyah neighborhood. At the entrance to the mosque, there is a water fountain surrounded by gardens, on the side of which the street is paved into the sanctuary (see Figure 4.15).

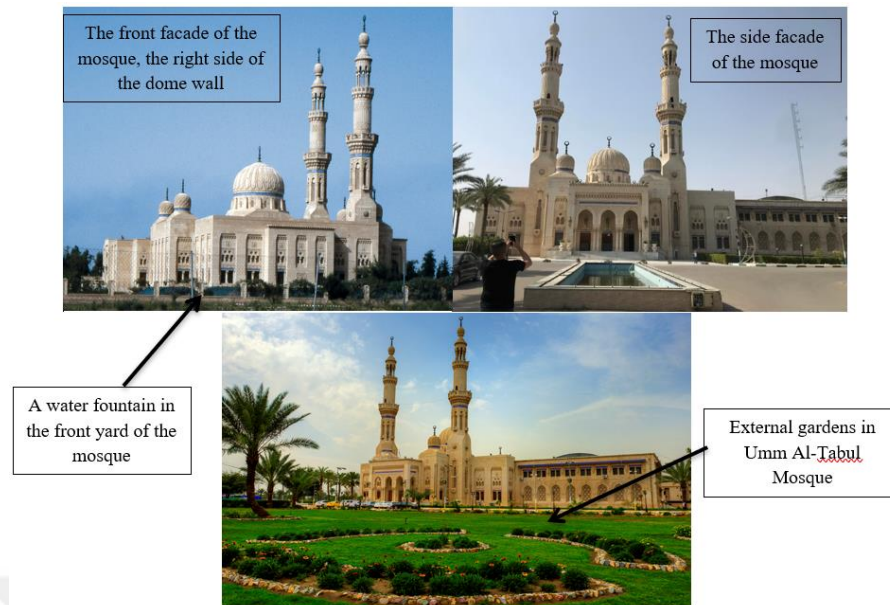


Figure 4.15. Umm Al-Tabul Mosque (Photograph taken by author)

The corners then evolved to become independent structures, each with a prayer hall or mosque, as well as accommodations and annexes. They served as residences for righteous elders who were renowned for their piety, where their disciples and followers would gather, often including the poor, travelers, and wayfarers. The sheikh of the corner was responsible for preaching and guiding those who frequented or resided in the corner. This can be found in Umm al-Tabul Mosque.

Some of the corners were used as mosques where the five daily prayers were offered, such as the Khadim Corner, which was originally a residence for the Abyssinian servants but was later converted into a mosque. There was also the Barashma Corner, located near the citadel, which had a similar transformation.

In Umm al-Tabul Mosque, it can be observed the presence of these spaces and corners, although they might not be associated with specific individuals. These areas are intended for the public, where anyone can pray individually. This architectural concept was influenced by Ottoman architecture, especially in the mosques of Cairo built during the Ottoman era (See Figure 4.16). While this style of architectural layout is commonly used in the design of standalone mosques or religious buildings like zawiyas and khanqahs, it is undeniably an addition introduced by Muslim architects. They not only adopted this layout but also developed and innovated new patterns within it that were not seen before.



Figure 4.14. Each column as a special corner for worshipers in Umm al-Tabul mosque (Photograph taken by author)

Additionally, there are architectural elements that resemble Ottoman mosques, such as the muqarnas. Muqarnas is a decorative and structural feature composed of arches formed from circles, with centers located both inside and outside the arches. This type of architectural detail became widespread in Islamic architecture and is considered one of its prominent characteristics.

Although the concept of muqarnas existed prior to the Islamic era, Muslim architects further developed and innovated various forms of it, which later influenced European architecture. This architectural feature was recognized in Egyptian architecture, as evidenced by the few remaining archaeological artifacts from the 3rd century AH. It was then extensively utilized during both the Fatimid and Ayyubid periods.

Muqarnas continued to spread during the Mamluk era, and its usage didn't cease with the end of that period. It was also widely used during the Ottoman era, underscoring the continuity of architectural traditions prevalent in Egyptian architecture before that time, particularly those traditions that were established during the Mamluk era (see Figure 4.17).



Figure 4.15. Pointed arches in Ottoman architecture found in Umm al-Tabul mosque in Baghdad (Photograph taken by author)

On the other hand, there is a type of muqarnas-like architectural element that can be observed in Umm al-Tabul mosque. This type of architectural element consists of three parts, with the upper part representing the head of the element and its crown, typically in the form of a pendant intricately decorated with a pointed pendant. The lower two parts consist of two side arches that support the legs of the pendant, and the design of this element follows a regular pattern, as is known in architectural terminology, with the central point from which its edges radiate in an organized fashion. This architectural feature became quite popular during the Ottoman era and was commonly used to crown entrances, eventually becoming a distinctive feature of these entrances. Additionally, this element was used as a transition zone in the construction of domes during that period. There are three models of this articulated architectural element, as described below:

The first model is a simple pendant, often lacking additional ornaments in the side arches. This model can be observed in several entrances, including the second entrance of Murad Pasha Mosque and the entrance of Yusuf Al-Hayy Mosque, as well as the three entrances leading to the sanctuary of Queen Safiyya Mosque and the entrance of Abidin Bey Mosque.

The second model features a pendant with spiral legs that create a distinctive design. This model can be seen in entrances such as those of the Mosque of Muhibb al-Din Abu al-Tayyib and Dawud Pasha Mosque. It was also used to crown the entrances of Mamluk-era buildings, such as the Sultan Barsbay Complex in the Mamluk Cemetery. These details can also be observed in Umm al-Tabul mosque.

The third model involves a pendant with ascending ornaments, often including hanging ornaments or panels between them. This model was used in some entrances, like the one at the Lady Zaynab Mosque and the Prince Abdul Rahman Passage. These entrances, built in the Ottoman architectural style, are like the design of Umm al-Tabul mosque. These elements are characterized by their intricate and decorative architectural details and played a significant role in the ornamentation and design of entrances and domes in Islamic architecture during the Ottoman period (see Figure 4.18).

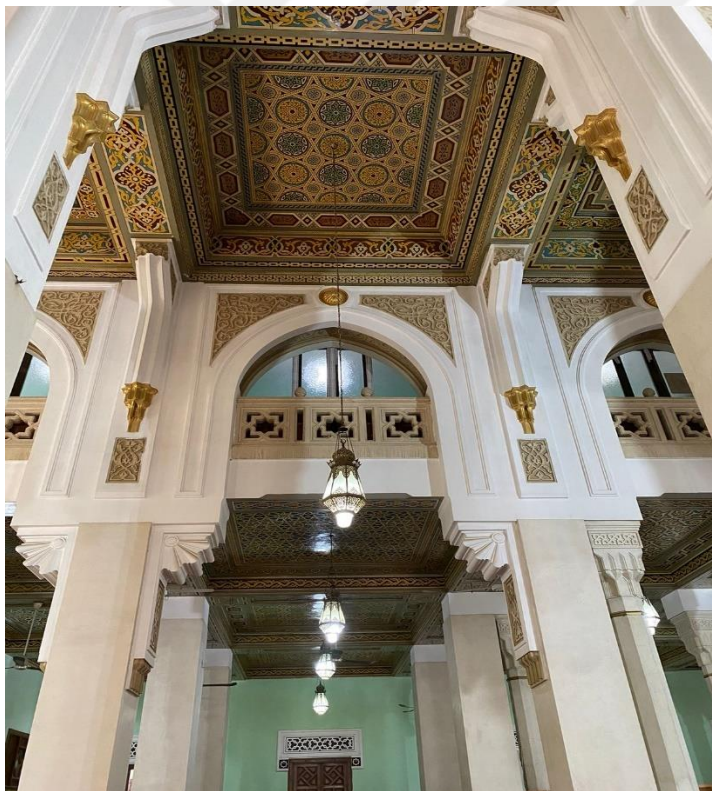


Figure 4.16. The detailed arches in Ottoman architecture found in Umm al-Tabul mosque in Baghdad (Photograph taken by author)

2. Al-Nida Mosque:

Al-Nida Mosque is one of the luxurious modern Baghdad mosques built during the reign of Saddam Hussein. It is in Al-Qahira neighborhood, in locality 322, administratively affiliated to Al-Adhamiya district, next to Al-Rusafa, northeast of Baghdad. The mosque was established in 1997 with funding from the former Ministry of Awqaf and Religious Affairs, and it was known at the time of its foundation as the Yom Al-Nada Mosque, relative to the date of the invasion of Kuwait by Saddam Hussein. After the American invasion of Iraq in 2003, its name was changed to the Call of Islam Mosque, but Baghdadi Street still knows it as the Call of Islam Mosque.

Its total area is 5000 square meters, and the campus area is 1500 square meters, accommodating about 3000 worshipers. It also contains a prayer room for women, a house for the imam and the preacher, another for the servant and the muezzin, several rooms for the guards, a library room, a hall for occasions, a storeroom, and a wash for the deceased (see Figure 4.19).



Figure 4.19. The front and side of Al-Nida Mosque (Photograph taken by author)

New patterns of column crowns and their muqarnas appeared in the Call Mosque, similar to those found in Ottoman mosques, especially in the gateway of the Sinan Pasha Mosque. Decorative elements using blue and green faience with botanical patterns and flowers spread, adorning the walls of bathhouses. A new type of decoration called "false ablaq" emerged. It relies on filling the engraved stone motifs with a contrasting-colored mortar substance, instead of using a different stone color, as was the case during the Mamluk period. It became common in decorating the facades and interior walls of large houses and palaces.

Wooden decoration with carving and inlay declined, giving way to Persian-style decoration, which relies on painting botanical patterns and arabesques in color and gilding them in gold on ceilings and interior walls. Contrary to some researchers' opinions about the disappearance of Islamic decoration, it is somewhat exaggerated. During this period, a considerable number of mosques, minarets, and buildings were constructed or renovated in the Ottoman architectural style, including contemporary mosques in Baghdad, such as Al-Nida Mosque (see Figures 4.20 & 4.21).

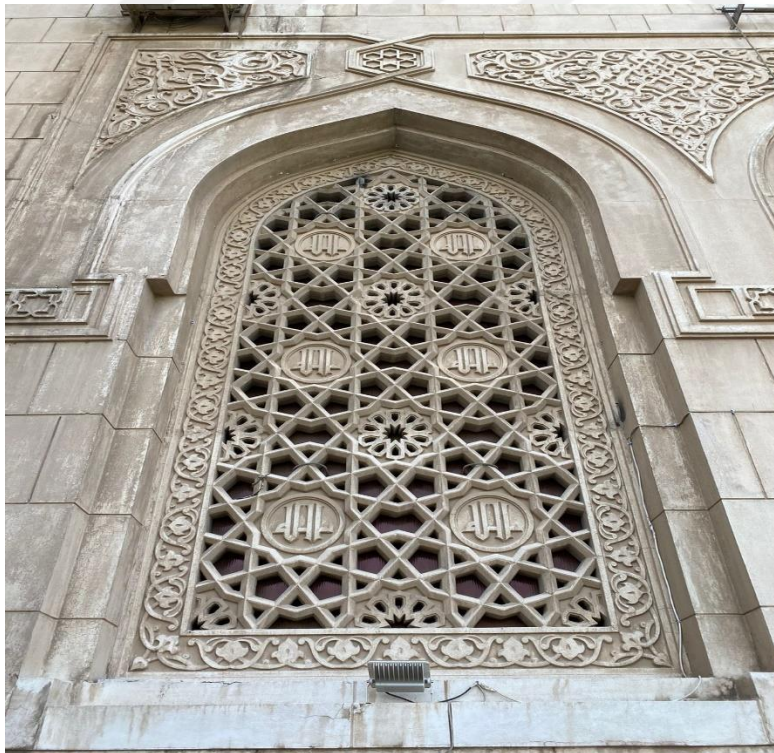


Figure 4.20. Floral and stone decorations in Ottoman architecture found in Al-Nida Mosque in Baghdad (Photograph taken by author)



Figure 4.21. Floral and stone decorations in Ottoman architecture found in Al-Nida Mosque in Baghdad (Photograph taken by author)

Vaulted domes of various types were quite common during the Ottoman era, and their usage diversified. Some were used to roof or cover branching corridors, while others were used to cover entrance gates. Crossing vaults were also employed to roof or cover certain chambers in the buildings attached to Ottoman-era mosques in Cairo, with Al-Nida Mosque being one of the prominent examples.

Crossing vaults played a significant role in covering or roofing essential parts like hallways and corridors in civil structures, especially homes, both in the Ottoman and preceding Mamluk eras. Al-Nida Mosque stands out with its use of crossing vaults to roof the side colonnades, with a total of four crossing vaults in each colonnade. In fact, the use of various types of vaults for roofing or covering different religious buildings, such as mosques, schools, or Khanqahs, was known in various parts of the Islamic world even before the Ottoman era.

4.3.1. Analyzing the Characteristics of the Planning Style of the Contemporary Mosques of Baghdad

Umm al-Tabul Mosque: The layout style of Umm al-Tabul Mosque consists of a rectangular sanctuary. The southern wall is the qibla wall, which contains the mihrab and the minbar, while the eastern wall contains the main gate of the sanctuary. The two minarets of the mosque flank it. The gate is preceded by a rectangular front portico containing two small domes at each end from the top, identical to two domes on the opposite wall. Attached to this portico is another, smaller, rectangular outer gallery containing four columns interconnected by pointed semi-circular arches.

The wall at the back of the sanctuary contains a side entrance that connects the sanctuary with the service rooms and corridors attached to the mosque. The central dome is raised on a neck that sits on a square base, and the dome rests on twelve square-section columns, four of which are in the corner of the square and are of three common columns. The remaining eight columns are free and interconnected by pointed semi-circular arches. In general, the layout of the sanctuary is based on the presence of a large rectangular central hall in the middle of the sanctuary covered by a large dome and four small domes (see Figure 4.22).

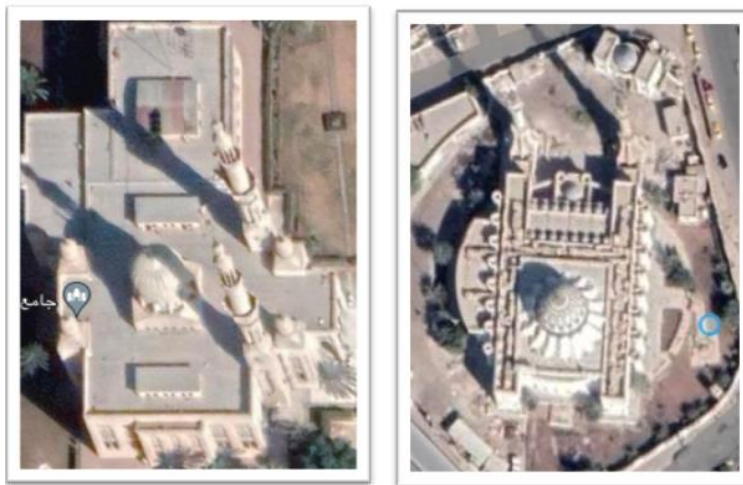


Figure 4.17. Al-Nida Mosque on the right and Umm Al-Tabul Mosque on the left (Photograph taken by author)

Al-Nida Mosque: The layout of Al-Nida Mosque consists of a sanctuary, which is a large rectangular hall. The southern wall is the qibla wall, which contains the mihrab and the minbar, which are not within the wall but protrude in front of the wall with a

unique design. On the opposite wall, the main entrance gate of the sanctuary mediates, which contains a dome and then two rows of small domes, each containing nine small domes. The two side walls contain many service rooms. The central dome is raised on a ribbed neck that sits on a circular base, and the dome rests on eight circular cross-section columns that are free and not connected (see Figure 4.23).

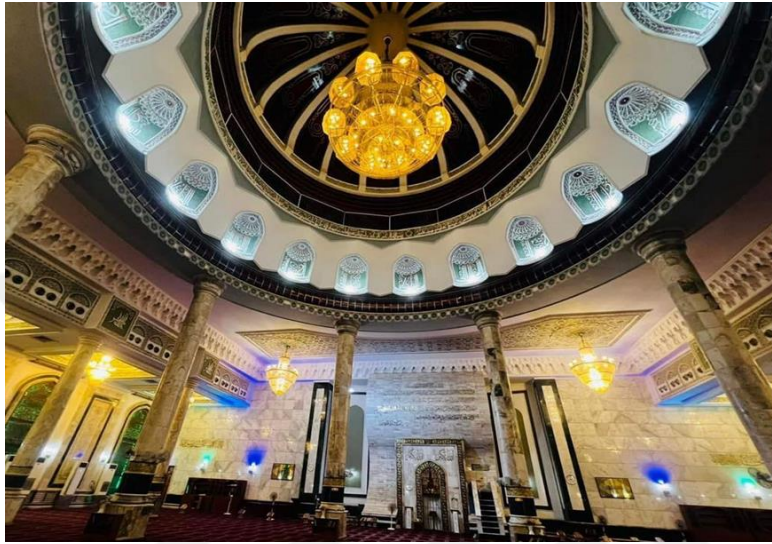


Figure 4.23. The sanctuary and the pillars bearing the dome of Al-Nida Mosque (The Photograph taken by author)

The comparison shows that there is a similarity between the layout pattern of Umm al-Tabul Mosque and Al-Nida Mosque, as they are contemporary mosques in Baghdad, with the Ottoman mosques in Turkey only in the use of the central planning system with one central dome in the middle of the sanctuary hall. The use of small domes in the arcades, as in the front arcade of Umm al-Tabul Mosque and the two side arcades of Al-Nida Mosque. In addition, there is also a similarity in the use of pointed arches that connect the columns in the outer portico, which can be seen in the Rustem Pasha Mosque. The central planning system with one central dome differs from the two-domed system found in the style of shrines and shrines of the Shiite endowment in Iraq.

4.3.2. Analysis of the Basic Symbolic Architectural Elements of the Minaret of Contemporary Baghdad Mosques

Umm Al-Tabul Mosque includes two minarets attached to the Haram Gate wall, located on the eastern side of the Qibla Wall. The height of each one is 40 meters, and it consists of a square base that rises slightly higher than the ceiling height of the

sanctuary roof, after which the body of the minaret turns into a polygon. The body consists of three parts and two balconies, the first part is octagonal from the base to the first balcony, and the second part is thinner than the first, cylindrical between the two balconies. The two balconies rest on four rows of muqarnas, while the third part of the body represents the neck and consists of 8 small columns containing distinctive capitals bearing a small dome on which a metal crescent rests.

Muqarnas and brick decorations dominate the body of the minaret, although it contains blue-colored Kashani slabs that contain Qur'anic verses. Concerning Al-Nida Mosque also contains two minarets at the front of the mosque, and it consists of a square base, which is twice as wide as the body, as it rises slightly to turn into the body, consisting of three parts and two balconies. The first part is an incomplete polygonal conical, starting from the top of the square base and ending at the level of the ceiling height of the sanctuary roof to reach the first balcony, where it was used to reduce the difference between the width of the base and the diameter of the hull.

The second part of the body is cylindrical and slender, extending from the first balcony to the second-the two-balcony rest on four rows of muqarnas. The third part of the body represents the neck, which bears a small dome decorated and completely covered with blue-colored Kashani panels, also used under the balconies (see Figure 4.24). The comparison shows that the minaret of Al-Nida Mosque and Umm Al-Tabul Mosque have characteristics that distinguish them from the Ottoman minarets and that the similarity with the Ottoman minarets was linked only to the level of the use of muqarnas, especially those under the balconies. In addition, two balconies were used for each minaret, which is unusual in local minarets, which are limited to one balcony. Likewise, the height of the minaret has become greater than usual for the local minarets; perhaps this is due to the influence of the styles alien to the art of Iraqi architecture, including the Ottoman style, which is famous for the height of the minarets.



Figure 4.24. On the right is the base of the minaret of Umm al-Tabul Mosque, on the left is the base of the minaret of Al-Nida Mosque (Photograph taken by author)

4.3.3. Analysis of Symbolic Architectural Elements - Structural

A. Columns:

In Umm al-Tabul mosque, many octagonal columns and square capitals are decorated with two rows of muqarnas and a row of floral motifs. Each column is connected to the adjacent column with pointed semicircular arches. As for Al-Nida Mosque, circular-section columns covered with alabaster were used, with a square base and simple circular capitals. Eight columns are centered in the center of the sanctuary to carry the central dome, while the rest are lined up on both sides of the sanctuary.

By comparison, it is possible to note the great convergence in the capitals of the columns, for example, between the capitals of the columns in Umm al-Tabul Mosque and the capitals of the external columns of the Rustem Pasha Mosque, where muqarnas were used in several rows and a square base. Likewise, the pointed arches connect the columns. Undoubtedly, the design of the columns in the architecture of contemporary Iraqi mosques was influenced by the Ottoman style in the design of the columns (see Figure 4.25).

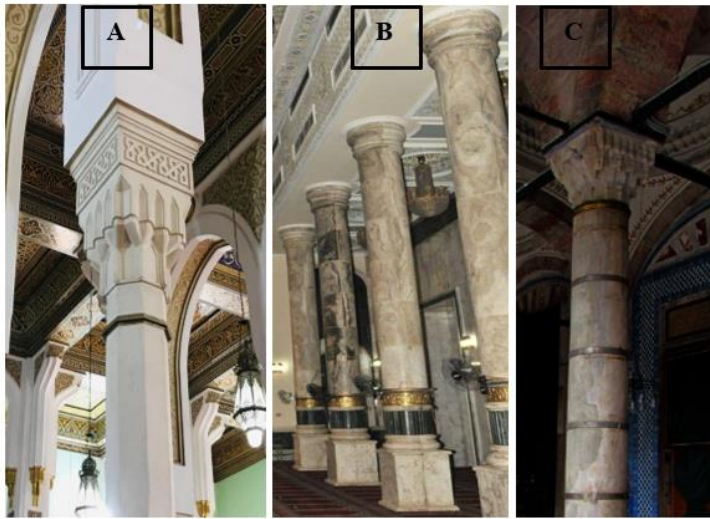


Figure 4.25. A. Columns in Umm Al-Tabul Mosque, B. Columns in Al-Nida Mosque, C. Column in the outer portico of Rustem Pasha Mosque (Photograph taken by author)

B. Central dome:

The dome in Umm al-Tabul Mosque rests on a cylindrical neck and a square base resting on 12 columns. The dome of Umm al-Tabul Mosque is distinguished by its unique shape from the outside and is decorated with carvings and floral and geometric motifs completely from the inside. These inscriptions are dominated by the golden color, the dominant color in all the sanctuary ceiling carvings. Also, the presence of a cylindrical neck between the square base and the dome enabled the use of openings for light to enter naturally, with the use of colored glass to close these openings, which helped to illuminate the inner part of it with sunlight and beautiful colors, which is reflected in the sanctuary hall.

On the outside, bricks were used in the work of the decorations, as the dome was decorated and the openings for natural lighting were framed. The blue glazed brick was also used in the border separating the dome from the cylindrical neck to give a beautiful view and is consistent with that used in the small domes and the body of the minaret to appear from afar in the form of a blue ring that beautifully decorates these architectural parts (see Figure 4.26).



Figure 4.26. Decoration and formation of the dome of Umm Al-Tabul Mosque from inside and outside (Photograph taken by author)

The dome of Al-Nida Mosque appears small from the outside because of the neck on which it rests, which is ribbed and larger than the dome itself, but from the inside, it appears larger. The wall of the neck from the inside is ribbed to a much lesser extent than the outside, and by using ornamentation and engravings, the neck appears from the inside as an extension of the dome and that it is a large dome that contains a row of large-sized muqarnas. These muqarnas appear as windows for natural lighting, using electric lighting hidden inside these muqarnas to appear in this beautiful way. The central part of the dome is divided using gypsum decorations into 16 areas and decorated with motifs in dark colors of dark red and black. Gold was also used to write some Quranic verses. This dome rests on eight central pillars in the middle of the sanctuary (see Figure 4.27).



Figure 4.27. The dome Al-Nida Mosque from the inside, where it is noticed that there are no openings for natural lighting, in addition to the distinctive decoration that includes 16 sections (Photograph taken by author)

The dome from the outside was decorated in white with blue and gold inscriptions and a blue ring using ceramic materials (see Figure 4.28). The small domes in front and the dome of the gate were blue with simple white carvings (see Figure 4.29).

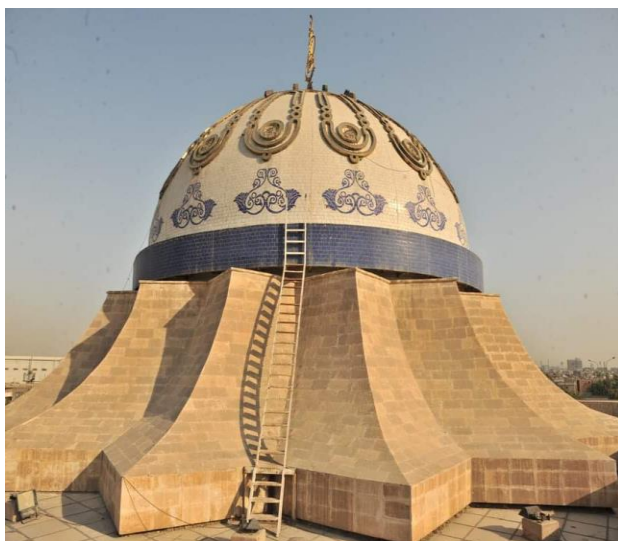


Figure 4.28. Plant motifs and polygonal shapes of the dome of the Nida Mosque from the outside (Photograph taken by author)



Figure 4.29. The secondary domes in the two front arcades, that noticed the difference in the ceiling level of Al-Nida Mosque from the outside (Photograph taken by author)

When comparing the central dome in the Ottoman mosques with the dome in the Iraqi mosques, it can be said that a wide difference in size and the use of half and quarters of the domes. However, there is a similarity in terms of functional use, as the use of the central dome contributed to increasing the space of the prayer hall, which gives a greater aesthetic to the prayer hall. Closed windows were also used for natural lighting in the dome of Umm al-Tabul Mosque and closed with colored glass, which can be seen in the dome of the Sultan Ahmed Mosque, for example. This shows the functional similarity of these windows and their use in the same location in the dome. As for the level of interior decoration and aesthetic inscriptions, it is possible to note the closeness between those in the Nida Mosque's dome and those in the Sultan Ahmed Mosque (See Figure 4.30). This indicates that the Iraqi designer tried, with the capabilities available to him, to copy some of the functional designs used in the Ottoman style, employing them and integrating them with the interior designs of Iraqi mosques.



Figure 4.30. The division of the 16th dome into a section and the use of motifs to decorate the dome of the Sultan Ahmed Mosque from the inside (Photograph taken by author)

C. The pulpit and the mihrab:

Umm Al-Tabul Mosque has a pulpit made entirely of wood, decorated with many beautiful geometric engravings and decorations that adorn the pulpit from all places. From the top, there is a group of rows of inscriptions in the form of wooden muqarnas, in addition to the geometric decorations that were excelled in their work by the most skilled craftsmen. The brown color of the pulpit mixed with black and light brown may seem inconsistent with the green back wall of the sanctuary, but by looking at the inscriptions and the consistency of colors in the dome and the sanctuary ceiling in general, a clear consistency of these colors can be noticed (See Figure 4.31). Concerning the prayer niche was created by making a gap in the qibla wall of the sanctuary, which contains Quranic verses from the top and is decorated with floral and geometric inscriptions in the rest of the parts. It looks more consistent with the qibla wall than the wooden minbar next to it (see Figure 4.32).



Figure 4.31. The use of muqarnas, geometric and floral motifs, and Arabic calligraphy in the mihrab of Umm al-Tabul Mosque (Photograph taken by author)



Figure 4.32. Covering the mihrab with alabaster, which is one piece, and limiting it to Arabic calligraphy and some Tibetan decorations in the mihrab Al-Nida Mosque (Photograph taken by author)

Al-Nida Mosque has a distinctive design for the minbar, as the mihrab is covered with white marble mixed with a little black. The pulpit, which is a ladder for the preacher to stand at the top, is integrated with the mihrab, and both are in front of the qibla wall, in contrast to the dominant one, which has a cavity inside the qibla wall, as this design is considered unconventional. At the top are Quranic verses written in

gold, as well as floral motifs framing the mihrab, in addition to the cavity of the mihrab. In general, the minbar and the mihrab appear to be in harmony in terms of colors with the qibla wall and the ceiling of the prayer hall.

When comparing the mihrab of Umm al-Tabul Mosque with the mihrab of Rustem Pasha Mosque, for example, we notice in terms of construction as both were created through a gap in the qibla wall and differ in design. The mihrab of Rustem Pasha Mosque contains five rows of muqarnas in the upper cavity of the mihrab. At the same time, the ceramics decorated with plant inscriptions cover the entire qibla wall and the mihrab, and the blue and white colors dominate both mihrabs.

In Umm Al-Tabul Mosque, the plant and geometric inscriptions were of various colors, and the mihrab was decorated with Quranic verses in golden color. It is also possible to notice the great similarity in the design of the minbar, despite the different materials used. It is also possible to see the coordination of the gray color of the minbar with the muqarnas in the mihrab. A different color was used for the pulpit than the mihrab and the qibla wall to direct the gaze on the imam or the preacher when using the pulpit in the Friday sermon, as it is used above the level of the worshipers, which is the real purpose of the pulpit so that the worshipers can see it and pay attention to it. The pulpit and mihrab of Al-Nida Mosque are not traditional, even for the local mosques in Baghdad, and are completely different from what is found in the Ottoman mosques (see Figure 4.33).



Figure 4.33. The great similarity in the use of muqarnas, decorations and Arabic calligraphy is the pulpit and mihrab of the Rustem Pasha Mosque (Photograph taken by author)

4.3.4. Analyzing the Aesthetic Decorations and Materials Used

In Umm al-Tabul mosque, the decoration on the ceiling can be seen in the central dome, in the small domes, the ceiling of the front porch, and in the triangular areas above the columns between the arches that connect two columns. For the central dome, geometric motifs were used in the center of the dome in the form of a flower, and then floral motifs that cover the entire area of the arched dome, successively and gradually in size in an exquisite manner.

As for the neck of the dome, there are natural lighting windows framed with geometric and floral motifs in the space between one window and another. The part that connects the square base with the cylindrical neck shows the triangles, where each triangle is framed with geometric motifs, and in the center are floral motifs, which show magnificence and artisanship. The space between the triangles is decorated with vegetal motifs, and there are geometric motifs in the middle, which appear as a flower centered between the vegetal motifs.

As for the square base, it contains a row of muqarnas. The artisans wanted more than the muqarnas; it was decorated with floral motifs. After the row of muqarnas, ventilation holes are framed with geometric motifs. At the bottom of the base is a blue band decorated with Arabic calligraphy with Quranic verses. It can also be

noted the use of plant motifs, geometric motifs, and then muqarnas and Arabic calligraphy to a lesser extent. Gradation and color consistency are excellent (see Figure 4.34).

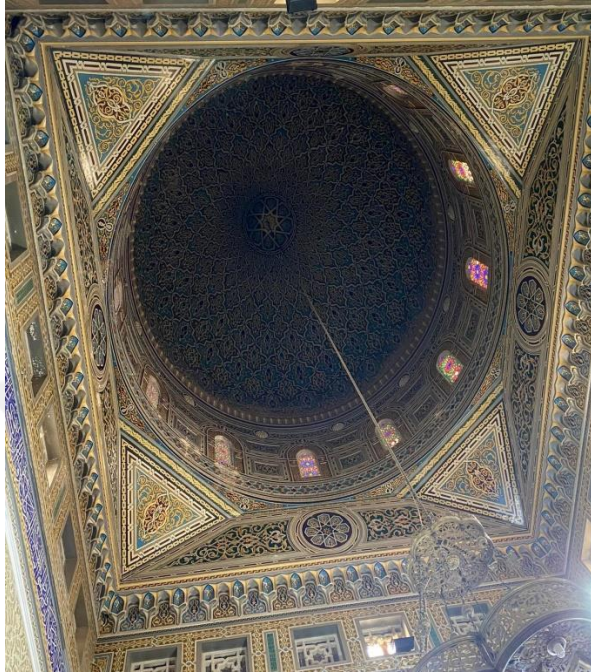


Figure 4.34. The decorative compositions of the dome, the neck, and the base inside Umm al-Tabul Mosque (Photograph taken by author)

The four small domes, two of which are in the front porch's ceiling. The style of using ornaments and color gradation is like what it is in the central dome. On the front porch, the ceiling was divided by arches into square spaces decorated with floral and geometric motifs. As for the space between one square and another, it was decorated with floral motifs, and there is a difference in the shape of the decorative composition in each square (see Figure 4.35). There are also many graceful polygonal columns of one color with a capital decorated with muqarnas, connecting each column to the last with a pointed arch in white, decorated with floral motifs in gold, and gypsum inscriptions that decorate the arches.



Figure 4.35. Plant motifs between the pointed arches inside Umm Al-Tabul Mosque (Photograph taken by author)

In the triangular areas and at the bottom of each arch - the ceiling of the arch - a beautiful symmetry appears with the hall's ceiling. The area of the brackets above the columns and under the ceiling is considered the color transition point between the number of gold decorations and between the gold and white in the brackets and then gray for the columns. In general, the ceiling was completely covered with decorations, and this consistency in colors gives a sense of comfort and a strong presence of the grandeur of the mosque. Plant and geometric motifs are used to a limited extent on windows and natural light openings framed by gypsum decorations. Gypsum decorations and inscriptions were the most widely used in the prayer hall, as we can see in the columns and arches that support the ceiling, in addition to their use in framing windows and lighting openings. There, too, gypsum decorations were used in the walls of the prayer hall, a meter high on all sides (see Figure 4.36).



Figure 4.36. Various combinations of plant and geometric motifs adorn the sections of the roof of the portico inside Umm al-Tabul Mosque (Photograph taken by author)

Wood was also used in the prayer hall in the pulpit, which is decorated with floral and geometric motifs, muqarnas, and Arabic calligraphy. Wood was also used in the large windows distributed regularly in the prayer hall and decorated with stained glass and geometric motifs (see Figure 4.37). Stained glass was used with floral decorative shapes, as in the lighting openings in the qibla wall, or with geometric decorative shapes, as in wooden windows. Blue, red, and green colors were used to simulate flowers with floral and geometric motifs in the colors of nature. There are single light windows, as shown above, the wooden windows, or in the form of a group, as in the qibla wall, each framed with gypsum decorations (see Figure 4.38). Tiles of blue-glazed ceramics and writing on them in Arabic calligraphy in golden color were used to a limited extent at the base of the central dome and small domes.

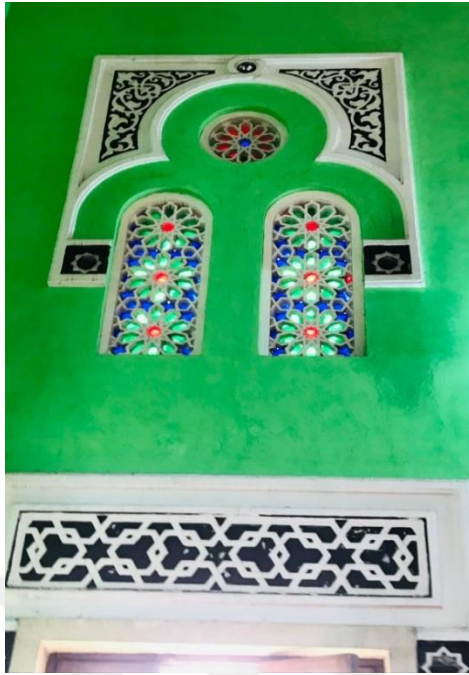


Figure 4.37. The gypsum decorations include floral and geometric motifs inside the hall of Umm Al-Tabul Mosque (Photograph taken by author)



Figure 4.38. Natural light openings, stained glass, decorations, and gypsum windows inside Umm Al-Tabul Mosque Hall (Photograph taken by author)

In the Nida Mosque, the prayer hall in the dome, which rests on eight marble columns stationed in the middle of the hall, and shorter columns are extending on both sides. The dark red color dominates the dome, and the white color of the gypsum decorations. The dome is divided into 16 triangles by white gypsum

inscriptions and decorations, and they meet at the center of the dome. These arched triangles are decorated with a combination of unique motifs in golden color while the rest of the space is in dark red and red.

As for the neck of the dome, it is divided into three rings. The first is decorated with dark red with some golden inscriptions, where three golden rings are inside the first ring of the neck. The second ring in the neck was divided into 16 rectangular spaces; each painted black and decorated with gold using Arabic calligraphy to decorate it with the names of God. The last ring of the neck was white and decorated with gold using Arabic calligraphy. The base of the polygonal dome is white with large muqarnas, or gaps designed to look like windows of natural lighting, where a dim white electric light was placed at the bottom of each gap from the inside. This muqarnas is decorated in light green with a combination of geometric and floral motifs in white and light red. Finally, a dark red ring is decorated with gold (see Figure 4.39).



Figure 4.39. A unique combination of plant and engineering decorations, where the dome was divided with gypsum decorations in the central dome in the prayer hall in Al-Nida Mosque (Photograph taken by author)

The eight columns holding the dome are large, surrounded by light brown alabaster, with a dark green ring and another golden color at the bottom of each column, forming the beginning above the square-shaped base. Brackets were not used between the columns, as gypsum decorations were used as a ring throughout the columns in green. Also, two rows of muqarnas surrounded the prayer hall and formed a framework for the ceiling. There are also some gypsum decorations adorning the

ceiling above the mihrab, and the opposite side of it was decorated with plant motifs in a light, gradual color, as well as the yellow color, to mimic nature by choosing colors and patterns (see Figure 4.40).



Figure 4.40. The main prayer hall in Al-Nida Mosque, where a light green ring and gypsum decorations were used instead of arches (Photograph taken by author)

The ceiling drops slightly from the sides and much from the side opposite the mihrab as columns surround the hall on three sides, shorter and smaller than the central columns. A front is formed between the two ceilings, which is decorated with some geometric motifs and inscriptions in light green to match the color of the muqarnas in the dome. The rows of columns on the opposite side of the mihrab on the entrance side of the hall are much smaller than the central columns and smaller than the side columns, as above those short columns, there are windows framed with brown alabaster. It is also pointed and framed by a rectangle of dark green alabaster so that there are two windows between every two columns from the top, and the extension of the short column appears between every two windows.

On this side also, opposite the mihrab, there are four wooden gates for the worshipers to enter the hall so that the entry is from the front porch with a low ceiling. Upon entering the hall, the ceiling rises to the top to give a sense of psychological comfort and the strong presence of the central dome with the central columns. The wall of the mihrab was completely covered with alabaster in the same color as the columns, with the use of dark green along the wall on both sides of the mihrab, as if it were two columns protruding from the wall, with the use of some gypsum decorations in light

green color surrounding the mihrab. The mihrab, as mentioned earlier, is completely covered with alabaster. Dark green alabaster, one meter high from the floor, was used in all the walls of the prayer hall (see Figure 4.41).



Figure 4.41. The gypsum decorations with plant motifs inside them for the ceiling, and the light and dark green colors appear in Al-Nida Mosque (Photograph taken by author)

As for the side walls, large windows rise along the wall and are pointed, where arches appear from the top, framed in dark green and surrounded by gypsum decorations in white. The windows are preceded by a row of columns of medium length compared to the central columns, and the columns on the opposite side of the mihrab form a side porch whose ceiling is divided into square spaces in front of each window-the materials used in the interior design of the prayer hall. We note the frequent use of alabaster in wrapping and decorating walls, columns, the mihrab, and the pulpit. Gypsum was also used extensively, as most of the decorations were made of gypsum, using colors or white only. As for wood, it was used only in the entry doors of the worshipers, as well as window glass and transparent ones (See Figure 4.42).



Figure 4.42. The qibla wall and the wall opposite it in Al-Nida Mosque, showing the short columns and the main entrance gates (Photograph taken by author)

As for the color coordination, a good consistency can be observed, where the light colors are generally with the use of the same colors in a darker degree in specific places, where the light color is used to a large extent in the decorations at the base of the dome, the ceiling, and the walls. At the same time, the dark green color can be seen at the bottom of the central columns, next to the mihrab in the qibla wall, and between the windows opposite the mihrab. The bright white color can be seen prevailing in the ceiling, the base of the dome, and the walls, with the use of light beige in the columns and light gray in the qibla wall and the mihrab, with dark red in the dome, floor carpets, and window frames of the wall opposite the mihrab.

Through a comparison between Umm Al-Tabul Mosque and Al-Nida Mosque on the one hand and the Ottoman mosques on the other, in terms of the interior designs of the central prayer hall, a clear difference can be noted in terms of the area of the hall, the height of the ceiling, and the size of the central dome in general. Regarding the techniques used by the designers, it is possible to identify some points of similarity, as vegetal and geometric motifs were used extensively in Umm Al-Tabul Mosque. Arabic calligraphy and a few muqarnas were used in specific places, which is somewhat like the Ottoman mosques and differs in materials and colors. Rectangular wooden windows were also used in Umm Al-Tabul Mosque, which can be considered taken from some Ottoman mosques, such as the windows in Sultan Ahmed Mosque (see Figure 4.43).

The ceiling was also completely decorated with motifs, and the use of arches between the columns, natural light openings, and colored glass can be found in Ottoman mosques. At the same time, the Iraqi engineer and designer kept his style in using, employing, and benefiting from them.



Figure 4.43. The use of rectangular wooden windows decorated with colored glass and crystal and framed with gypsum decorations in Sultan Ahmed Mosque (Photograph taken by author)

In the Nida Mosque, these elements can be found different from what they are in Umm Al-Tabul Mosque, even where it was designed in a different style despite the use of the central dome and large columns. It is also possible to note the use of gypsum and alabaster decorations to a greater extent than the use of plant, geometric, and muqarnas decorations. However, in the external decorations of the prayer hall, we find some limited use of blue-colored ceramics decorated with floral motifs, which are famous for Ottoman mosques such as Sultan Ahmed Mosque and Rustem Pasha Mosque (see Figure 4.44).



Figure 4.44. Glazed ceramics decorated with floral motifs are used to a limited extent in the exterior walls and are framed by the gypsum decorations of Nida Mosque (Photograph taken by author)

4.3.5. Results of the Comparative Analysis of the Characteristics of the Planning Style

Both the Mosque of Umm al-Tabul and the Mosque of al-Nida show similarities in terms of planning style with the Ottoman mosques, where a single central dome system was used for roofing the sanctuary with a rectangular shape, preceded by a rectangular arcade covered with small secondary domes. Also, both mosques have minarets that differ from the Ottoman minarets. There is a similarity only in using two balconies, like what is found in some Ottoman minarets. Muqarnas were used to decorate the bottom of those balconies, as the muqarnas are very similar in terms of the number of rows, shape, and location to those of the Ottoman minarets. Concerning the columns, there is a similarity between the columns of Umm al-Tabul Mosque and those in the Ottoman mosques in terms of the shape of the capitals and the use of muqarnas in it, as well as the use of pointed arches to connect the columns, but they are thinner and slenderer than the Ottoman columns. As for the columns of the Nida Mosque, they are like the Ottoman columns in terms of size.

The central dome in Umm Al-Tabul Mosque, despite its small size compared to its Ottoman counterparts, was designed with the same principles in terms of a square base and a cylindrical neck that holds the dome. The dome also contains outlets for natural lighting decorated with colored glass. As for the dome in Al-Nida Mosque, it

is larger, as it was used to increase the space of the hall space, and it was decorated with motifs like those found in the domes of Ottoman mosques. Concerning the mihrab and the minbar, the mihrab of Umm al-Tabul Mosque is structurally similar to what is found in the Ottoman mosques, as it was created through a gap in the wall. The minbar is separated from the mihrab and decorated using floral and geometric motifs like in Ottoman mosques but with a different material, as it was built of wood. The mihrab and the pulpit of Al-Nida Mosque differ completely from what is found in the Ottoman mosques.

In terms of aesthetics and designs, there is a similarity between Umm al-Tabul Mosque and the Ottoman mosques in terms of the employment and use of plant and geometric motifs in decorating the ceiling and the dome and around the windows of natural lighting, as well as in the use of stained glass in them. These elements were also used in decorating the arches, the mihrab, and the pulpit. As for colors and materials, there are great differences and limited similarities, as in wooden windows. In the Nida Mosque, plant and geometric decorations were used much less than in Umm Al-Tabul Mosque, where gypsum decorations and colors were used with alabaster and iron windows.

In conclusion, the Ottoman mosques mentioned in the previous chapters are still standing and intact, despite some damages that occurred due to the multiple wars in Iraq. They have been restored sequentially and remain in good condition to this day. As for contemporary mosques, they are well-preserved and still standing to this day.

CHAPTER FIVE

5. CONCLUSIONS

The selection of contemporary Iraqi mosques in Umm Al-Tabul Mosque (1968) and Al-Nida Mosque (1997), which are approximately 20 years apart, we notice many differences between the two mosques. It is clear evidence of the great diversity in Baghdad's engineering and aesthetic designs of mosque architecture. On the other hand, this shows the overlap in the architecture of Iraqi mosques due to the influence of external styles such as the Ottoman style, where we find that the two mosques have their design and are not considered miniature copies of the Ottoman mosques.

On the other hand, there are features of the Ottoman style that are clear in the designs of these mosques, and this is evidence of the continuation of the influence of the Ottoman style in Baghdad through the mosques established during the Ottoman rule of Baghdad. Al-Mouradia Mosque (1570) was studied, and it is one of the first mosques in Baghdad that used the single central dome system in its construction, as it differed from the mosques that preceded it in Baghdad. This indicates that the Iraqi designers tried, in their designs, with the capabilities available to them, to copy some of the practical uses of the basic and symbolic elements of mosque architecture of the Ottoman style, employing them and merging them with the interior designs of Iraqi mosques. This led to a hybrid architectural style that adheres to the original, with some additions borrowed from external styles. One of these styles that influenced the architecture of Iraqi mosques is the Ottoman style.

Studying and analyzing the Iraqi mosques was done by selecting a mosque built during the Ottoman era in the fifteenth century and two mosques from the contemporary Baghdadi mosques. The influence of the Ottoman style was identified, and the continuity of this influence was traced in the art of modern mosque architecture, and the following was concluded:

1. It has been proven that the Ottoman style has influenced the Baghdadi style in the construction of mosques since the construction of Al-Mouradia Mosque, at least in the fifteenth era. Through research and study, it has been proven that the single central dome system was used for the first time in Al-Muradiyya Mosque, as well as the use of secondary domes in roofing and dividing the space of the front porch,

which is unique to the Ottoman style and has no analog in the mosques built in Baghdad before Al-Muradiyya Mosque.

2. The influence of the Ottoman style continued even after the end of Ottoman rule in Baghdad, where it was possible to observe and diagnose the Ottoman style in contemporary mosques and mosques in Baghdad, such as Al-Nida Mosque and Umm Al-Tabul. We find Umm al-Tabul Mosque, built in the nineteenth century. It contains a structural system based on a rectangular hall centered in the middle of a central dome, as well as small secondary domes that roof and divide the front porch into several spaces, and this is one of the features of the Ottoman style. The existence of this structural system is based on one central dome in Al-Nida Mosque, one of the mosques considered modern in Baghdad. It was built at the end of the last century, evidence of Ottoman influence in more than one contemporary mosque in Baghdad.

3. There are also some signs of the influence of the Ottoman style on the interior designs of Baghdadi mosques that may not come from the architecture of Al-Mouradia Mosque. This is due simply to the fact that it was not used or existed and has disappeared, or it may have been used in Ottoman mosques in Mosul or other ancient cities. Among these signs is the use of two balconies instead of one in the minaret and the use of muqarnas to decorate the bottom of these balconies. This may mean that the height of the minaret has increased. Despite this, the height of the minarets in Baghdadi mosques did not reach the height of the Ottoman minarets. Likewise, when noting the decorations in the pulpit of Umm Al-Tabul Mosque, although it is made of wood, it is very similar to the pulpit of the Rustem Pasha Mosque.

4. The similarity of the use of plant and geometric motifs in decorating the dome from the inside and framing windows for natural lighting and arches is another evidence that the Iraqi designer was influenced by the Ottoman style in the interior design of the prayer hall and employed it like that used in Ottoman mosques. Therefore, it can be said that the influence of the Ottoman style has been present in the architecture of Iraqi mosques since the fifteenth century, and this influence is still continuous and continuous and has become an integral part of the architecture of contemporary Iraqi mosques.

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