

A TURNING POINT IN THE HISTORY OF OTTOMAN ARCHITECTURE: FOSSATI BROTHERS

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Abstract: *The Ottoman architectural change, which occurred between the Tulip Era and the Tanzimat period (1718–1839) and was shaped by both conventional and novel styles attempting to follow Western influence, reflects the country's shifting political and cultural landscape. The change in the Ottomans' perception of social and intellectual taste caused the architectural understanding to move away from the classical building styles. Although the Ottomans tried to train their own architects to implement the new building styles, attempts to meet the current need were made by foreign architects who received architectural education in Europe. The main figures of the new process, in which other foreign architects also took part, are the Fossati brothers. For the first time in the Ottoman Empire, after the Tanzimat, a team of foreign architects had the opportunity to undertake uninterrupted and successful works, leading to the subsequent employment of other foreign architects. This tradition, which started with the Fossati brothers in the Ottoman Empire, continued for about a century until the 1930s. In the study, an explanation of both the contributions of the Fossati brothers to the history of Ottoman architecture and the reason why they were the first representatives of a new era is proposed. In this regard, the history of the Ottoman architecture, deviating from the classical understanding and turning to a Western style, will be briefly mentioned. In addition, the buildings they constructed in Istanbul will be surveyed and their contribution to the architectural face of the city will be expressed.*

Keywords: *Ottoman Architecture, History of Science, Fossati brothers, Western style, Tanzimat Era.*

Rezumat: *Un punct de cotitură în istoria arhitecturii otomane: frații Fossati*

Transformarea arhitecturală, realizată în perioada dintre Epoca Lalelelor și perioada Tanzimatului (1718-1839), modelată atât de stilurile tradiționale cât și de noile stiluri apărute sub influența Occidentului, simbolizează o schimbare a peisajului politic și cultural al țării. Schimbarea percepției otomanilor asupra „gustului” social și intelectual a făcut ca arhitectura țării să se îndepărteze de stilurile arhitecturale clasice, consacrate. Deși a existat un efort de formare a propriilor arhitecți pentru implementarea noilor stiluri arhitecturale ale Imperiului Otoman, nevoile curente presante au făcut necesară aducerea de arhitecți străini, cu educație de specialitate obținută în Europa. Personajele principale ale noului proces, la care au participat și alți arhitecți străini, sunt frații Fossati. Pentru prima dată în Imperiul Otoman, după Tanzimat, o echipă de arhitecți străini a avut ocazia să întreprindă lucrări neîntrerupte și de succes, fapt ce a condus la angajarea ulterioară a altor arhitecți străini. Această tradiție, care a început cu frații Fossati, a continuat aproximativ un secol în Imperiul Otoman, până în anii '30 ai secolului trecut. Studiul evidențiază contribuțiile fraților Fossati la istoria arhitecturii otomane și rațiunea pentru care aceștia sunt considerați primii reprezentanți ai noii ere arhitecturale. Pentru o abordare cronologică a situației, va fi rezumată succint istoria aceluia capitol al arhitecturii otomane care, înaintea fraților Fossati, se abătuse deja de la canoanele sale clasice și se îndreptase către stilurile occidentale. În studiu vor fi incluse clădirile pe care frații Fossati le-au proiectat în Istanbul și, totodată, va fi cuantificată contribuția lor la creionarea siluetei arhitectonice a acestui oraș.

INTRODUCTION

From the Tulip Era to the Tanzimat period (1718–1839), the transformation in Ottoman architecture, created by traditional architecture, as well as new styles following Western influence, is a manifestation of the changing political and cultural life. With the proclamation of the Tanzimat, the perception of the West as a role model gained momentum. Although there was an effort to train local architects to implement the new building styles of the Ottoman Empire, attempts to meet the current need were made by foreign architects, who received architectural education in Europe. The main figures of this movement, in which other foreign architects also took part, are the Fossati brothers. For the first time in the Ottoman Empire, after the Tanzimat, a team of foreign architects had the opportunity to undertake uninterrupted and successful works, leading to the subsequent employment of other foreign architects. This tradition, which started with the Fossati brothers in the Ottoman Empire, continued for about a century until the 1930s. The Fossati brothers formed the first stage of an important period in the history of Ottoman architecture by virtue of the building techniques they used and the new functional structures they built in neo-classical and neo-

Ottoman styles. It is known that there were many foreign architects in the Ottoman Empire and these architects had taken part in projects individually before them. Moreover, neo-classical works had been built on these lands long before the Fossati brothers. In order to answer the question of what makes them different from other foreign architects, it is firstly necessary to approach the developments experienced in Ottoman architecture in the 18th and 19th centuries and the foreign architects who worked here.

THE CONTRIBUTIONS OF 19TH CENTURY TO OTTOMAN ARCHITECTURE

Until the first half of the 19th century, the institution responsible for the execution of all kinds of buildings, construction, and repair works within the borders of the Ottoman Empire was the Hassa Architects' Association. It is estimated that Hassa Architects' Association was established after the conquest of Istanbul. This organization, the long-time chief architect of which was Architect Sinan (1490–1588), was the official centre of the architectural activities of the Ottoman Empire. This situation is shown as the most important reason why architecture was far from an autonomous and civil structure in the Ottoman Empire.¹ In Hassa Architects' Association, where the Ottoman architectural tradition is passed down from generation to generation and applied training is given in a master-apprentice relationship, basic geometry and mechanics were taught in the training of architects. The best-known example in this regard is the geometry lessons that Sedefkar Mehmed Ağa (d. 1617) took from Architect Sinan in person.²

The fact that geometry is at the centre of the relationship between theoretical and applied knowledge in architecture gives the latter a scientifically valuable position. It is not a coincidence that, in the Ottoman Empire, mathematics, especially geometry, was encountered more in the education of architects, the secretaries involved in constructions activities, and occupational groups that needed knowledge of geometry in practice, such as the army's

¹ Göksun Akyürek, *Tanzimat Döneminde Mimarlığın Değişen Bilgisi: Fenn-i Mimari, Gazeteler ve Diğerleri* [Changing Knowledge of Architecture in the Tanzimat Era: Fenn-i Mimari, Newspapers and Others], in "Türkiye Araştırmaları Literatür Dergisi", Vol. 2009, No. 13, p. 97.

² Ali Naci Özyalvaç, *El-Kâşî'nin "Miftâh El-Hisâb" Adlı Eseri ve 16. Yüzyıl Osmanlı Yapılarında Kemer Biçimlenişleri Üzerine Bir İnceleme* ["A Study on El-Kâşî's "Miftâh El-Hisâb" and Arch Formation in 16th Century Ottoman Buildings, in *II. Türkiye Lisansüstü Çalışmaları Kongresi - Bildiriler Kitabı V*, 2013, p. 1223.

fortifications and sewers, rather than madrasas.³ Therefore, the history of architecture should not be ignored in Ottoman mathematics history research.

Moreover, Hassa Architects' Association is a large and official institution, at the head of which a chief architect executes his duty in a structure that is organized for him. As stated above, thanks to this organization, the construction activities that took place in all regions of the Ottoman Empire were carried out through a single centre. This practice was employed especially in the construction of public institutions, through the Academies, which were managed by the ruling class in the Renaissance and later in Europe, as well.⁴ Whoever was the chief architect of the Hassa Architects' Association in the formation of the Ottoman classical architectural understanding was the one to leave his mark on that period. Although the local features are felt from time to time in different regions of the state, the general practice was carried out in the form of imitation and reproduction of the works of the chief architect. While architects and masters in the Ottoman Empire probably did not even include their names in the works they made because of their humility, original architectural works in Europe were the way the architects made themselves visible. As it can be understood from the statements of foreigners who came to the Ottoman Empire, the role of Turkish architects in construction activities gradually decreased in the 18th century and more non-Muslims came to the fore. For example, the architect of Nuru Osmaniye Mosque was Master Simeon. Likewise, it is seen that Master Blind Yani worked in the construction of Fatih Mosque (1767–1771) and Master Kirkor worked in the construction of Nusretiye Mosque.⁵ However, the supervision and construction permit of the buildings belonged to Muslim architects with the title Hassa.

These years coincide with the period when military engineering offices were opened to train engineers who took part in providing the necessary mechanical knowledge in the military field. Engineering teachers were aware that the architectural knowledge used in the military field, which is one of the application areas of mathematics, changed in the 19th century. In order to close this gap for the students who would be the architects of the future, it was decided

³ Osman Nuri Ergin, *Türk Maarif Tarihi* [Turkish Education History], Vol. 1-2, İstanbul, Kültür Yayınları, 1977, p. 153.

⁴ Uğur Tuztaşı, İlgi Yüce Aşkun, *Klasik Dönemden Batılılaşmaya Osmanlı Mimarlığında İdealleştirme Olgusu ve Batı Mimarlığıyla Olan Mukayesesi* [The Concept of Idealization in Ottoman Architecture from Classical Period to Westernization and Its Comparison with Western Architecture], in "Osmanlı Araştırmaları", Vol. 38, 2011, p. 216.

⁵ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten Mimarların Yapıları ve Koruma Sorunları* [Buildings and Conservation Problems of 19th Century Western and Levantine Architects in İstanbul], PhD Thesis, Yıldız Technical University, 1993, p. 52.

that the architects affiliated with this organization should take courses in Hendesehâne “theoretically” since 1801, although the Hassa Architects’ Association was not closed yet.⁶ This attempt ended in failure as the architects in question did not favour the theoretical courses. It is clear that Ottoman architects needed a new structuring and systematic education in this process, where it was understood that they did not have the knowledge of the age. In addition to the military and political fields, where the feeling of inadequacy began to dominate in the Ottoman Empire, the same understanding began to show its effect in architecture. It is natural that the West, which is in demand as a source of accurate and reliable information, should also be seen as a source of architectural knowledge. The transfer of knowledge from the West, which the Ottomans tried to implement in the field of science and technology, was carried out by bringing foreign experts to the Ottoman Empire to give lectures and sending students to Europe. In this process, the practical and theoretical knowledge of the past was neglected. Instead, it was tried to obtain information from textbooks written in a foreign language, but full adaptation could not be achieved by this method. Unfortunately, the transfer of knowledge and technology could not be achieved at the desired level in many areas. However, it can be said that partial success was achieved in the history of Ottoman architecture.

The social change experienced in the Ottoman Empire also led to differentiation in places. As mentioned above, the observations, criticisms, and suggestions of the ambassadors and state officials sent to Europe for the first time in the 18th century had an impact on Ottoman architecture in the later periods. These people, particularly bureaucrats working in the Ministry of Foreign Affairs, expressed their opinions in the travelogue and embassy texts, as well as in the letters they wrote. The common opinion expressed by this aforementioned community is, astonishingly, their admiration for European cities, what they think is behind these cities, higher and transcendent knowledge. Sultan Mahmud II (1808–1839), the traditional state model of the Ottoman Empire, which took its source from the Islamic culture, was abandoned and a new state organization was started. Among the changes made both in the army and in other fields, there was also the abolition of the Hassa Architects’ Association in 1831. With the closure of Hassa Architects’ Association, it can be said that the break with the classical Islamic architectural tradition became official. Ebniye-i Hassa Manager was established instead of the Hassa Architects’ Association and the last chief

⁶ Göksun Akyürek, *Tanzimat Döneminde Mimarlığın Değişen Bilgisi ...*, p. 100.

architect, Abdülhâlim Efendi, was appointed as the head of this new institution.⁷ An architect in the Ottoman Empire was responsible for many things, from the design to the building materials during the construction process. Not only the one who decided on the location of a building in the city but also the one who repaired the sidewalks was called an architect. The most notable distinction of the new period in terms of architectural history is the emergence of the idea that the class of architects and that of engineers should no longer be separated from each other. With the closure of the Hassa Architects' Association, it is seen that the centralist and statist structure of the Ottoman architectural system was abandoned, and a mixed system was formed, in which both the civil and the state existed together. This situation is the manifestation of the changes the 19th century, when specialization inevitably emerged because of the increasing knowledge in science and technology, brought about in the field of architecture in the Ottoman Empire.

The most influential factor in the formation of the Ottoman architectural understanding during the Tanzimat period is the thought of Ottomanism. The reforms effected by the Tanzimat especially concerned the acquisition of new legal rights by non-Muslim subjects. While Ottomanism had been the expression of the dominance of Muslims before the Tanzimat, it was then reinterpreted and turned into a new understanding based on the concept of international equality.⁸ Especially for Turkish Muslim citizens, activities that municipalities are currently responsible for, such as roads, water channels, and large structures providing common benefits, were carried out by foundations or individuals at the time. The 19th century is the century of a dualist form in which the old and the new sometimes come together in a reconciliatory approach. Alternatively, we can say that zoning activities were left to the individuals in the pre-Tanzimat period instead of being carried out by the state itself.⁹ Therefore, considering the increasing population of the cities, it could be understood that they had serious deficiencies in planning. It was obvious that zoning in the Ottoman Empire needed new regulations in terms of law and institutions like a municipal organization in terms of implementation. Among the first attempts to overcome these deficiencies were the planning and mapping studies of Helmuth Von Moltke (1800–1891) and Von Vincke, who were German-army officers assigned to the Ottoman Empire. The

⁷ Şerafeddin Turan, *Osmanlı Teşkilâtında Hassa Mimarları* [Hassa Architects in the Ottoman Organization], in "Tarih Araştırmaları Dergisi", Vol. 1, 1963, No. 1, p. 178.

⁸ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten ...*, p. 52.

⁹ Osman Nuri Ergin, *Şehirciliğin Tarihi İnkışâfı* [Historical Development of Urbanism], İstanbul, İstanbul Üniversitesi Hukuk Fakültesi İktisat ve İçtimaiyat Enstitüsü Neşriyatı, 1936, p. 5-8.

plan prepared by Von Moltke in 1836 was designed to be implemented in Istanbul and formed the basis of the Tanzimat Edict dated 25 June 1839.¹⁰ With the proclamation of the Tanzimat Edict in 1839 and the Islahat Edict in 1856, the sociocultural framework of the concept of neighbourhood, which was the daily lifestyle of the Ottoman society, was destroyed. It is seen that the traditional elements of the neighbourhoods are replaced by a polycentric urban life.¹¹ In this period, when new building types emerged in Ottoman cultural life, architectural structures also changed as a reflection of thought and culture. By making a transition from wood to masonry in construction techniques, new styles were included in newly constructed buildings as the symbol of Tanzimat thought. The style applied in the Tanzimat period is the neo-classical style that had been used in the Ottoman Empire since 1740 and was also popular in Europe at the time.¹²

Non-Muslims, who mainly carried out commercial activities in the Ottoman Empire, became even richer with the commercial rights granted by the Islahat Edict, and a new bourgeois class emerged. The enrichment of this class, who resided especially in Beyoğlu and Galata districts, enabled the region to become a lively centre with new buildings, such as business centre, arcade, bank, hotel, theatre, and cabaret. Although the construction of mosques, inns, baths, and fountains, which feature in the classical architectural program of Istanbul, continues, the construction of buildings with new functions has come to the fore.

FOREIGN ARCHITECTS IN THE 19th CENTURY IN THE OTTOMAN EMPIRE

During the Tanzimat period in the Ottoman Empire, it is seen that large-scale construction projects were given to the people who received a Western-style architectural education. While it was striking that the architects in question were foreigners or Levantines at first, it is understood that non-Muslim architects who were Ottoman subjects and received their architectural education in Europe, were

¹⁰ Koray Özcan, *Tanzimat'ın Reformları: Türk İmar Sisteminin Kuruluş Sürecinde Erken Planlama Deneyimleri (1839-1908)* [Reforms of the Tanzimat: Early Planning Experiences in the Establishment of the Turkish Zoning System (1839-1908)], in "Osmanlı Bilimi Araştırmaları", Vol. 7, 2006, No. 2, p. 156-157.

¹¹ Kıymet Giray, *Osmanlı'da Batılılaşma Döneminin Dinamikleri* [Dynamics of the Westernization Period in the Ottoman Empire], in *Arkeoloji ve Sanat Tarihi Osmanlı'da Batılılaşma Döneminin Dinamikleri Tarihsel Çerçeve. Toplum ve Kültür*, Ankara, Kültür ve Turizm Bakanlığı Yayınları, 2009, p. 1.

¹² Alidost Ertuğrul, *XIX. Yüzyılda Osmanlı'da Ortaya Çıkan Farklı Yapı Tipleri* [Different Building Types Emerging in the Ottoman Empire in the 19th Century], in "Türkiye Araştırmaları Literatür Dergisi", Vol. 7, 2009, No. 13, p. 297.

also included in this group in the following periods. In Istanbul, where embassies of many countries were opened in this period, it is seen that the Ottomans' cultural, artistic, and architectural contact with foreigners increased. Many architects, especially from countries such as France and Germany, were given the opportunity to work on the construction of new buildings and the restoration of old buildings by the state. Alternatively, there are Turkish students who were sent from the Ottoman Empire to countries such as France and Germany to receive architectural education. Our architects, such as Hayrettin, Vedat and Kemâleddin Bey, who grew up in this way, applied the new building styles in the Ottoman Empire as the architects who received Western education. It can be said that especially Hayrettin Bey applied the architectural style called neo-Ottoman through the public buildings he erected for Ottoman architecture.¹³

Mustafa Reşit Pasha (1800–1858), who served as the London ambassador, had a great impact on the history of Ottoman architecture in this period, when the buildings constructed by foreign architects who had grown up in Europe were visible. In the letter he wrote to Sultan Mahmut II in 1836, he mentions that masonry structures made of stone and brick in Europe took the place of the wooden structures in Istanbul, which suffered a lot due to the fires. He emphasized that, as a solution, new neighbourhoods to be established in Istanbul should be planned and built with masonry structures instead of wood. He also suggested the use of European architects and builders in the design and implementation of buildings to be erected with new construction materials.¹⁴ Again, in his letter of 1836, the German Marshal von Moltke, mentioned above, supported Reşit Pasha, and explained how the building materials and neighbourhood plans of the houses in Istanbul enabled the spread of fires.¹⁵ These developments herald the coming of a new era in Ottoman architecture in line with the Tanzimat thought through foreign architects. The decision to westernize the capital of the Ottoman Empire with the rescript of Hümâyûn of the Gülhane, which was announced in 1839, also paved the way for foreign architects officially. The Fossati brothers, who are also at the centre of our work, came to the Ottoman Empire in such an environment and started to carry out their architectural activities. After the brief overview of the developments in the Ottoman

¹³ John Freely, *A History of Ottoman Architecture*, Boston, Wit Press., 2011, p. 393.

¹⁴ Salih Salbacak, 19. *Yüzyılda Pera Bölgesinin Mimari Gelişimi ve Alman Sarayı* [Architectural Development of the Pera Region and the German Palace in the 19th Century], in "İJSHS", Vol. 1, 2017, No. 1, p. 114.

¹⁵ Helmuth von Moltke, *Moltke'nin Türk Mektupları* [Moltke's Turkish Letters], İstanbul, Yükselen Matbaası, 1969, p. 77-79.

architectural history in the 18th and 19th centuries, we can move on to Fossati brothers' life stories and contributions to the Ottoman architectural history to better understand their significant role in Ottoman architectural history.

THE FOSSATI BROTHERS' LIFE AND THE STORIES OF THEIR ARRIVAL TO ISTANBUL

Gaspare Trajano Fossati, Giuseppe Fossati, and their third sibling, engineer Virgilio Fossati, less involved than the other two, are the Architect brothers, members of the Fossati family, who carried out the most important construction activities of the 19th century in Istanbul and changed the face of the capital. The Fossatis belong to a family who has produced numerous painters and architects over the course of nearly five centuries. Their grandfather Carlo Giuseppe (1737–1805) and their uncle Pier Angelo Aloiso (1762–1827) are among these architects.¹⁶ It is seen that Gaspare Fossati took part in more than fifty major projects in the twenty-one years (1837–1858) he spent in Istanbul as the head of a team including his brother Giuseppe. The Fossati brothers caused a significant change in the general appearance of Istanbul by the works they created. For the first time in the Ottoman Empire, after the Tanzimat, a team of foreign architects had the opportunity to undertake such uninterrupted and successful works, leading to the subsequent employment of other foreign architects.¹⁷ The tradition of employing educated foreign architects, which started with the Fossati brothers in the Ottoman Empire, continued for about a century until the 1930s.

Gaspare Trajano Fossati was born on October 7, 1809, in Morcote, a town in Ticino, Switzerland. He left Morcote, a region heavily populated by Italians, in 1822 to study architecture at Milan's Brera Academy (Accademia di Belle Arti di Brera). During the years when Fossati was being educated, the influence of the neo-classical movement was dominant in the academy.¹⁸ After studying at the academy until 1827, he had the opportunity to examine historical buildings in Venice and Rome for 3 years. In 1830, he participated in the Capua and Pesto excavations with Bianchi. He also took part in the Ercolano and Pompeii excavations.¹⁹ The experience gained by Gaspare Fossati during these archaeological excavations enriched his future works.

¹⁶ Semavi Eyice, *Giuseppe Fossati*, in *İstanbul Ansiklopedisi*, Vol. 2, No. 161, 1971, p. 5823.

¹⁷ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten ...*, p. 168.

¹⁸ *Ibid.*, p. 93.

¹⁹ *Ibid.*, p. 97.

Afterwards, he went to Russia, where the neo-Renaissance style was famous, thinking that it would be a good opportunity to improve himself. His uncle, Giugliemo Fossati (1770–1843), who worked there, had a great influence on this decision. While he was teaching at the Academy of Fine Arts in St. Petersburg, he was also involved in the construction of palaces, churches, and houses, obtaining the title of palace architect.²⁰ During this period, Gaspare, who was understood to have a good reputation in Russia, was also experiencing good developments in his private life. In 1837, he married the granddaughter of another famous architect, Luigi Rusca, who worked in Russia. He applied the Russian Imperial style in the churches and residences he built in the four years he spent in Russia. The Russian experience, which was a successful period in Gaspare's life, ended with his acceptance of the Russian embassy building project to be constructed in Istanbul, which he presented to the Tsar.²¹ In line with this decision, Gaspare Fossati came to Istanbul on 20 May 1837 by way of Odessa and the Black Sea.²² Before the construction works of the embassy building was scheduled to start in the summer of 1838, Fossati delivered the church projects he prepared for his clients in Odessa, St. Petersburg, and Italy.

For the construction of the Russian embassy building, Gaspare Fossati asked for help from his brother Giuseppe, who was also an architect like himself. Born on July 5, 1822, in Morcote, Giuseppe was thirteen years younger than his brother. Before coming to Istanbul, Giuseppe studied architecture for two years in Milan, like his older brother.²³ Together with his older brother, Giuseppe, who came to Istanbul in 1839, had the opportunity to work in the construction of many important projects in Istanbul for about twenty years. He married Alessandrina Stiepevich in 1854 and two of his five children were born in Istanbul.²⁴ Giuseppe took part in various architectural projects in Istanbul, where he came to assist in the construction of the Russian embassy building. The most well-known among them are that he managed the construction of the Saint Esprit Church, took part in the repair of Hagia Sophia, and designed housing projects to be built in Beyoğlu and the Bosphorus 1848–59. In addition, he built the Spanish embassy building in 1854, a mansion for Samos Bey Vogorides in 1855 and Ömer Pasha in 1856.²⁵ It

²⁰ Semavi Eyice, *Gaspare Fossati Trajano*, in *İslam Ansiklopedisi (DİA)*, Vol. 13, p. 170.

²¹ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten ...*, p. 99-101.

²² *Ibid.*, p. 104.

²³ Nilay Özlü, *Fossati Biraderler* [Fossati Brothers], in *Türk Mimarisinde İz Bırakanlar*, Ankara, Afşar Matbaacılık, 2015, p. 62.

²⁴ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten ...*, p. 177.

²⁵ Semavi Eyice, *Giuseppe Fossati*, p. 5823.

can be said that Giuseppe remained in the shadow of his brother in the architectural profession and was not very successful because Gaspare Fossati took a much more active role in almost all the significant projects we have mentioned above.

The younger brother of the Fossatis, Virgilio, who was born in 1830, worked for a short time with his older brothers in Istanbul, and then took part in the construction of railways in his home country between 1861 and 1873.²⁶ Virgilio has contributed to a railway project planned to be built between Pangaltı and Büyükdere by the Fossatis for the Ottoman Empire in 1856.²⁷

The Gaspare and Giuseppe brothers undersigned major projects as licensed architects in Istanbul until the death of their benefactor, Reşit Pasha, in 1858. They also built a tomb for Reşit Pasha in Beyazıt.²⁸ After the death of Mustafa Reşit Pasha, who was their biggest supporter in the Ottoman court, the Fossati brothers returned to their country inasmuch as the great projects were not given to them. In 1862 Gaspare Fossati moved to Milan. After the seaside palace of Sultan Abdulaziz burned down in 1863, he was offered a new palace project, but he did not give a positive response. The Fossati brothers acquired Italian citizenship in 1869. Gaspare Fossati died at his home in Morcote in 1883.²⁹ Giuseppe, who attempted to prepare a book consisting of the pictures he had drawn about Istanbul, could not fulfil his wish. In 1890, Giuseppe succeeded in publishing a catalogue of the projects he and his older brother realized in Turin, entitled "Rilievi Storico-artistici sull' Architettura Bizantina, Milan 1890".³⁰ He died on March 1, 1891, shortly after this event.

GREAT PROJECTS CARRIED OUT BY FOSSATIS IN ISTANBUL

In this period, when new building types began to appear in the Ottoman cultural life, architectural structures changed as a reflection of thought and culture. Classical Ottoman structures such as mosques, fountains, and baths were influenced by the Western architectural understanding. In addition to this, new structures built in line with the needs of the period such as hotels, theatres,

²⁶ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten ...*, p. 180.

²⁷ Nurcan Yazıcı, *Osmanlılarda Mimarlık Kurumunun Evrimi ve Tanzimat Dönemi Mimarlık Ortamı* [The Evolution of the Architectural Institution in the Ottomans and the Architectural Environment of the Tanzimat Period], PhD Thesis, Mimar Sinan Fine Arts University, 2007, p. 216.

²⁸ *Ibid.*, p. 216.

²⁹ Semavi Eyice, *Gaspare Fossati Trajano*, p. 172.

³⁰ Nurcan Yazıcı, *op. cit.*, p. 220.

embassy buildings, post offices, and train stations emerged. Non-Muslims, who mainly carried out commercial activities in the Ottoman Empire, became even richer owing to the commercial rights granted by the Islahat Edict, and a new bourgeois class emerged. The enrichment of this class, especially residing in Beyoğlu and Galata districts, enabled the region to become a lively centre with new buildings such as business centre, arcade, bank, hotel, theatre, and cabaret. Although the construction of mosques, inns, baths, and fountains, which feature in the classical architectural program of Istanbul, continued, the construction of buildings with new functions began to be given more importance.

Six categories can be used to group together the enormous buildings constructed by the Fossati brothers, who are among the most significant architects in Istanbul's evolving architectural landscape.

1. Official state buildings. These are intended by the state for their existing institutions for the needs of reform or newly opened institutions.

2. Private residences. These are built in line with the luxury housing demands of the emerging elite.

3. Military structures and structures built for the benefit of the public. Military structures are planned in line with the needs of the army. Additionally, buildings meant for the benefit of the public comprise schools and hospitals.

4. Religious buildings and restorations of existing buildings. These are places of worship, including very old and large buildings such as Hagia Sophia Mosque.

5. Embassy Buildings: Russian Embassy Building (1838–1845), restoration of Palazzo Venezia (1853), Dutch Embassy Building (1854), Spanish Embassy Building (1854), Iranian Palace-Embassy Building (1856), Casa D'italia, Project to expand Palazzo Venezia (1869).

6. Other Structures: Palace Theater (1846), Naum Theater (1846), Theater Project, Hunkar Assembly, Kasr-ı Humayun, Hunkar Entrance (1847–1849), Hagia Sophia Timetable (1847–1849), restoration of Aynalıkavak Pavilion, Sultan's Cascade Rococo Pavilion in Kagithane, Resit Pasha Tomb (1858), Sultan Ahmet arrangement-protection plan (1848), Caffe Oriente (1850), Bursa Public City Baths Project (1850), Maritime Agency (1855), Pera-Buyukdere Railway Project (1855), Tanzimat Monument, Sarayburnu monumental pier project, Drawing of archaeological artifacts excavated in Troy and Bursa.³¹

Through the medium of their buildings, the Fossaties ensured the spread of the neo-classical style in Ottoman architecture. Furthermore, according to the intended use of the building, they applied the native and Western forms sometimes

³¹ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten ...*, p. 112-114.

together and sometimes separately. They reflected Italian style in Naum and Palace theatres; Western style in foreign embassy buildings; traditional Ottoman style when they were trying domes in the construction of Seraskerlik Hospital, and they reflected the Byzantine architecture in the mahfili they added to the Byzantine Monument they restored. Some of the monuments mentioned above are:

5.1. Russian Embassy Building Project

Beyoğlu district, like other districts of Istanbul, has seen big fires with the disadvantage of wooden architecture. It is a large wooden structure rising in the area between the Russian embassy building, Galata Mevlevihanesi and the Swedish embassy next to it and Galata Palace in the early 19th century. The embassy building became unusable, possibly as a result of the fire that took place in Beyoğlu on 3 August 1831. The embassy building project, which was started in 1838, targeted the representation of the power and prestige of the Russians in Istanbul. The construction of the Russian embassy in a neo-Renaissance style, which lasted from 1838 to 1845, is such an ostentatious and magnificent building that it was seen as a part of the future plans of the Russian Tsardom concerning the Ottoman Empire. Moreover, among the foreigners residing in Beyoğlu, rumours even spread that it was built as a palace for the Russian Tsar to stay when he defeated the Ottomans and captured the shores of the Bosphorus.³²

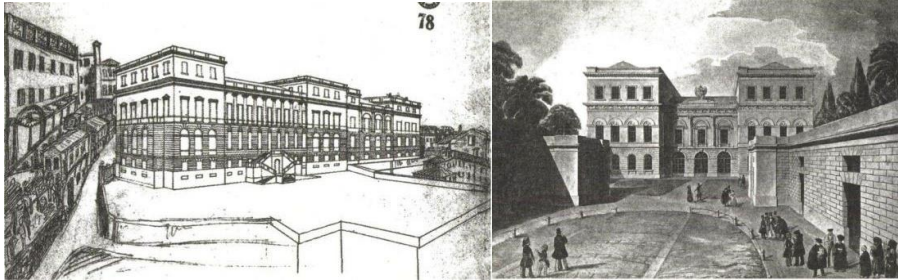


Fig. No. 1 and 2, Russian Embassy Building ³³

One of the orders taken by the Fossati brothers in Istanbul during the construction of the Russian embassy building was the reconstruction of the San Pietro Church between 1841 and 1843. The admiration of the Russian embassy led the Fossati brothers to have their signatures in the construction of many buildings that would change the face of Istanbul.

³² Semavi Eyice, *Gaspere Fossati Trajano*, p. 171.

³³ Isabella Palumbo, *19. Yüzyıl Türkiye'sinden bir Kozmopolit Gaspere Fossati, İki Dünya Arasında bir "Kılavuz" (1837-1858)* [Gaspere Fossati, a Cosmopolitan in 19th Century Turkey, A "Guideline" Between Two Worlds (1837-1858)], in "Harp ve Sulh Avrupa ve Osmanlılar" [War and Peace Europe and the Ottomans], <https://books.openedition.org/ifeagd/1658>, p. 337.

After the completion of the Russian embassy in 1845, Gaspare Fossati intended to return to his hometown. It is stated in the archive document dated January 6, 1846, that he had a desire to be awarded an order, showing that he was working for the Ottoman State before he left.³⁴ As the Russian ambassador Tellinof and Mustafa Reşid Pasha became intermediaries, Gaspare succeeded in getting an order from the Sultan. Then, the construction of the Darulfunun Building, which will be a monument in the sense of the change of civilian knowledge, apart from the transformation of military knowledge, in which the Tanzimat thought was made visible, was also given to the Fossati brothers.³⁵ This project, which Mustafa Reşit Pasha was the father of, started to be implemented in 1846, and the construction of the project continued until 1863.

5.2. Archive Building

In a will dated 8 November 1846, Gaspare Fossati was given the task of constructing an Archive building in the vicinity of Bâb-ı Âlî in order to preserve the official state archive. As stated in the archive document, the Ottoman Empire needed a large archive building for the preservation of important documents belonging to the state.³⁶ It was desired that the building, which was thought to be in the form of a regular library, be built in the new architectural style (*tarz-ı cedid*) from the newly invented brick (*nev-icâd*) by Architect Fossati (Gaspare), who was also the architect of the Darulfunun building. The Archive building, which was planned to be built of masonry, would thus be protected from the damp and it would be easier to search and find the desired documents. Gaspare Fossati, who had prepared an archive building project as his graduation thesis in 1827, was able to accomplish his project of the Archive Building, which became one of the important examples of the neo-Renaissance style in Istanbul.

5.3. Hagia Sophia Restoration

The Fossati brothers rose to a very prestigious position among Ottoman architects owing to the buildings they built in Istanbul. Thanks to such a reputation, they had the opportunity to renovate Hagia Sophia. Everyone knows how important Hagia Sophia is. While Hagia Sophia was the largest church of Byzantium, it became the Grand Mosque of the Ottoman Empire after the conquest of Istanbul. Many foreign travellers and ambassadors who visited Istanbul

³⁴ BOA. İ.HR. [Başbakanlık Osmanlı Arşivi İrade Hariciyye / Prime Ministry Ottoman Archive Order Foreign Affairs], 33/1481

³⁵ BOA HR.TO. [Başbakanlık Osmanlı Arşivi Hariciye Nezareti / Prime Ministry Ottoman Archives Foreign Ministry Translation Chamber Documents], 407/9.

³⁶ BOA. İ.MSM. [Başbakanlık Osmanlı Arşivi İrade Mesail-i Mühimme / Prime Ministry Ottoman Archive Important Order Documents], 25/658.

mentioned the architecturally magnificent Hagia Sophia in their memoirs with praise and admiration. One of them is the ambassador Busbecq, who came to Istanbul in 1554 to represent Hungary. Busbecq expresses his ideas about Hagia Sophia as follows: "Hagia Sophia is a fascinating building, which is worth seeing. The building, which has a high dome in the middle, receives light only from a gap at the top. Almost all Turkish mosques were built according to the model of Hagia Sophia. It is said that Hagia Sophia used to be larger, and the additional buildings were spread over a large area. But they no longer exist, only the central dome of the church is present."³⁷

Plan, mass, and plastic elements applied in Byzantine architectural structures have a standard style. Hagia Sophia, on the other hand, is a structure that is tried for the first time outside of the classical Byzantine architectural style.³⁸ It is the place where people came together and where the most important official and religious ceremonies of the state were held during the Byzantine period. It was in the centre of life; therefore, it received the most significant damage from riots, fires, and earthquakes. For this reason, it has only managed to survive by the repairs and reinforcements it has undergone over time. Hagia Sophia, the architectural structure of which was tried for the first time and the dome of which was the source of pride for the Byzantines, also had an impact on Ottoman architecture. Many additions were made by the Ottomans to the structure, which continued to be an important centre where feast prayers were held together with state officials and mass ceremonies were held in the Ottoman Empire. These include maintenance-repair and the construction of new additions by Mimar Sinan.

At that time, surpassing the size of Hagia Sophia turned into a race among Ottoman architects. The culmination of these efforts is represented by the Selimiye Mosque, erected by Mimar Sinan for Selim II (1566–74). With the completion of Selimiye in 1571, its rivalry with Hagia Sophia began. Mimar Sinan was also involved in the discussion, stating that the Selimiye Mosque in *Tezkiret'ül Bünyan* had a dome that exceeded that of Hagia Sophia.³⁹ The need for maintenance and repair of the Hagia Sophia Mosque, which was captured with the conquest of Istanbul, was meticulously fulfilled by the Ottoman Empire. Until the 19th century, Hagia Sophia underwent many repairs. By 1846, a problematic situation that required major repairs such as the cracks in the dome of Hagia

³⁷ Busbecq, *Türk Mektupları*, p.39.

³⁸ Selçuk Mülayim, *Sinan ve Çağı* [Sinan and His Age], İstanbul, Marmara Üniversitesi Yayınları, 1989, p. 71.

³⁹ Selen B. Morkoç, *A Study of Ottoman Narratives on Architecture: Text, Context and Hermeneutics*, Bethesda, Dublin and Palo Alto, Academia Press, 2010, p. 280.

Sophia and the bending of the columns emerged. Therefore, the renovation works of Hagia Sophia Mosque were started by the Sultan. In 1846, it was decided to repair and renovate Hagia Sophia. In April 1847, the scope of the project was expanded and, with the approval of Sultan Abdülmecid (1839–61), the project was given to the Fossati brothers. This is an indication that the Fossatis had gained the Sultan's trust. It is expected that such a project would be given to the Balyan family, who was the leader of the period and had its signature on many architectural projects in Istanbul.⁴⁰

It is obvious that the Fossati brothers attracted Abdülmecid's attention with the Russian embassy building and other works they had carried out. For the Fossati brothers, it was a great privilege to conduct the repair of a building of great historical and religious importance, such as Hagia Sophia.

Hagia Sophia, a very important building for the Ottoman Empire and the Christian world, had been repaired and renovated many times before the Fossati brothers. It is quite normal for such an old building to need constant maintenance and repair work. One of the most important repairs made on Hagia Sophia is the touch of Mimar Sinan, who made great contributions to the development of Ottoman architecture. During his appointment as chief architect, Sinan carried out structural strengthening works and repaired the outer buttresses so that Hagia Sophia could survive longer. On the grounds that it damaged the walls and vaults, he had a new minaret constructed farther from the wall and ordered the demolition of the Fatih Sultan Mehmet-built minaret on the weight tower at the southwest corner of the mosque.⁴¹

According to Sema Doğan, who is known for her writings on the history of architecture and Hagia Sophia, the Fossati brothers' renovation and repair works in Hagia Sophia can be summarized by eight items. The first of them is the static consolidation works, and the first thing that was done was to repair the 12 columns in the back of the structure. Later, hoops were used to repair the cracks in the dome and the lead roofs were renewed. The second is the renewal of the decorations, and the third is the repair of the exterior façades. While the exteriors were being renovated, they were painted in yellow and green stripes, respectively. In addition, in Istanbul, a city where fires were common, wooden buildings in the

⁴⁰ Semavi Eyice, *Ayasofya'da Abdülmecid'in Mozaik Tuğrası* [Abdülmecid's Mosaic Tugra in Hagia Sophia], in *Ayasofya Yıllığı* [Hagia Sophia Yearbook], 2014, p. 49.

⁴¹ Sema Doğan, *Sultan Abdülmecid Döneminde İstanbul-Ayasofya Camii'ndeki Onarımlar ve Çalışmaları Aktaran Belgeler* [Documents Describing the Repairs and Works in the Istanbul-Hagia Sophia Mosque during the Sultan Abdülmecid Era], in "Bilig", No. 49, 2009, p. 8.

immediate vicinity were demolished in order to protect the structure against fire. The fourth is to make architectural additions that did not exist before, and the fifth is to add new decorations. The sixth is the new equipment, the seventh is their work on mosaics, and the eighth is the arrangements around Hagia Sophia.

In this renovation work, in which approximately eight hundred workers took part, the walls of the hall were first renovated and then decorated with newly made paintings. For example, the walls of the hall, which is located between a large corridor from the entrance hall and the Sultan's mahfil, were decorated with Mecca and Medina drawings by the Italian artist Antonio Fonari. While the Fossati brothers were working in Hagia Sophia, they witnessed the emergence of different mosaics from the Byzantine period after the whitewashing of the arch and vault parts of the building. The mosaics of the building, which was built as a church by Byzantium, are extremely important in terms of Christianity and art history. It can be said that Sultan Abdülmecid was closely interested in these precious mosaics. When the Fossatis informed the Sultan about the emergence of the first mosaic, Abdülmecid, who personally followed the situation, demanded that all mosaics be revealed. Upon this, a great cleaning was carried out and all the mosaics were unearthed. Gaspare Fossati, who did not want to leave Abdülmecid's interest and tolerance unrequited, had a tughra made for Sultan Abdülmecid from mosaic pieces poured out. He had the tughra made by Italian artist N. Lanzoni, whom he had brought to Istanbul in those days to help him. This tughra is 57 cm in diameter and is the first sultan's tughra made of mosaic, which is a technique unique to Byzantium.⁴²



Fig. No. 3, Sultan Abdülmecid's Tughra⁴³

The artist embroidered Abdülmecid's monogram with colourful mosaics on a round floor paved with gold square mosaics. In addition, it is said that

⁴² Eyice, *Ayasofya'da Abdülmecid'in Mozaik Tuğrası*, p. 49-51.

⁴³ *Ibid.*, p. 56.

Abdülmeçid did not volunteer to cover the mosaics. However, since this place was used for worship, he gave the order to cover them.

After the conquest of Istanbul, during the conversion of Hagia Sophia into a mosque, it was only covered with whitewash without damaging the mosaics inside. While the Fossati brothers were only responsible for the architectural repair of the Hagia Sophia Mosque, they realized that the mosaics that appeared after the spilled whitewash also needed maintenance, and they removed these plasters with the permission of Sultan Abdülmeçid. After the depictions on the mosaics were repaired by the Fossati brothers, they were documented with pencil drawing and watercolour. The depictions of the mosaics unearthed were requested to be published by Gaspare Fossati. Fossati asked the Russian Tsar, with whom he was close, for 6000 rubles, in order to be able to publish a large and colourful album containing the depictions of the mosaics. Since the answer was only one ring instead of 6000 rubles, he gave up on this request.⁴⁴ Instead of mosaics, this time with the support of Sultan Abdülmeçid, a book showing the interior and exterior of Hagia Sophia and its surroundings was published in London in 1852.

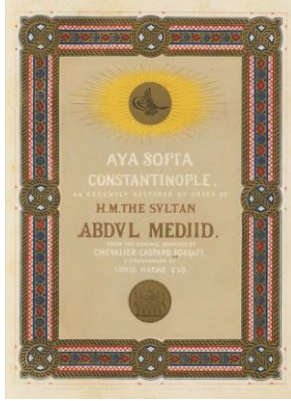


Fig. No. 4, Cover page of Gaspare Fossati's book published in London in 1852

W. Salzenberg, a Prussian architect, examined and drew the pictures of the mosaics unearthed by the Fossaties, in January-May 1848, while the restoration of the Hagia Sophia Mosque was underway. He published an album of mosaics of Hagia Sophia in 1854.⁴⁵ Gaspare Fossati, one of the Fossati brothers, whose architectural achievements were not ignored by Sultan Abdülmeçid, and Nisân-ı Âlî and his brother Giuseppe Fossati were awarded the Mecidiye Order of the

⁴⁴ Edhem Eldem, *Ayasofya: Kilise, Cami, Abide, Müze, Simge* [Hagia Sophia: Church, Mosque, Monument, Museum, Icon], in "Toplumsal Tarih", No. 254, 2015, p. 80.

⁴⁵ Eyice, *Gaspare Fossati Trajano*, p. 172.

fourth degree.⁴⁶ We owe almost all the Hagia Sophia mosaics that have survived to the present day to the renovation and repair works of the Fossaties.

5.4. Darulfunun Building

In 1845, it was planned to make a series of reforms in the field of education with the initiatives of Mustafa Reşit Pasha. The third stage of these reforms was the opening of a higher education institution apart from the existing military schools and madrasahs.⁴⁷ Darulfunun, which is designed to teach courses in many fields together, is the first university of the Ottoman Empire in the modern sense. The construction of the Darulfunun building was given to the Fossati brothers. The Darulfunun building, which is the most important building that the Fossaties built in the neo-classical style in Istanbul, is located between Hagia Sophia and the Blue Mosque.

The fact that the construction of the building took many years (1846–1863), and therefore the cost was much higher than expected, led to criticism of the Fossaties. Although physics lessons were given for the first time for two years by Derviş Emin Pasha in 1863, courses could not start completely. In 1864, it was first used by the Ministry of Finance, then the Courthouse and Evkaf Ministries. In 1876, it started to be used as a parliament.⁴⁸ The building, which was badly damaged because of a fire in 1933, unfortunately could not reach the present day.

CONCLUSIONS

From the beginning of the 18th century, Ottoman intellectuals believed there was no lack of theoretical knowledge about sciences in the Ottoman Empire, which was a continuation of Islamic civilization. Alternatively, deficiencies in practical knowledge began to be recognized. Even though the reforms and the contacts made attempted to overcome this shortcoming, it is obvious that much success was not achieved. We can say that over a century, from the Tulip Era to 1837, the date when the Fossati brothers came to the Ottoman Empire, the tradition of architecture had been abandoned in the Ottoman Empire, and a change and transformation had taken place in the Western sense. Architecture, which was one of the areas where modernization efforts were made most visible in the Ottoman Empire with the Tanzimat, was somehow the flesh and bone of the changing minds.

⁴⁶ BOA İ.HR. [Başbakanlık Osmanlı Arşivi Tercüme Odası Evrakı / Prime Ministry Ottoman Archive Order Foreign Affairs], 188/10475.

⁴⁷ Ekmeleddin İhsanoğlu, *Osmanlı Bilim Mirası*, Vol.1, İstanbul, YKY, 2017, p. 144.

⁴⁸ Cengiz Can, *İstanbul'da 19. Yüzyıl Batılı ve Levanten ...*, p. 146.

There are three main reasons why the Ottomans gave many important projects to two Swiss brothers instead of local architects in the 19th century. The first is the presence of bureaucrats, such as Mustafa Reşit Pasha, who approached the subject with admiration for the West and who were in the decision-making mechanism with the understanding that the source of correct information and the best of everything would be done by the Westerners. The second is the abandonment of the old understanding in architectural education with the closure of Hassa Architects' Association and the lack of domestic architects with adequate education and equipment in the current system implemented. Undoubtedly, another factor that should not be disregarded is the fact that the Fossati brothers were able to complete many projects in the Ottoman Empire due to their expertise and knowledge in a wide range of fields, including furniture, decorations, architectural construction methods, and material knowledge. The Fossati brothers spent more than twenty years in the Ottoman Empire, where they had been invited to work on the Russian embassy building. By their religious, official, and private housing projects, they contributed significantly to the understanding of neo-classical architecture in the Ottoman Empire. The Fossati brothers, especially Gaspare, contributed greatly to the change of the city's appearance thanks to the large projects they took in Istanbul. Among the more than fifty projects mentioned above, the most significant application of the neo-classical style is the Darulfunun building, which unfortunately burned down in 1933 and could not reach the present day.

The Fossati brothers came to the Ottoman Empire during the Tanzimat period, when a great intellectual and mental change was experienced, and they also met almost everything expected from them in a very self-sacrificing way during this period, when Ottoman architecture was experiencing problems. Through their close relations with Reşit Pasha, the influential bureaucrat of the period, the Fossatis brought other artists and architects from Italy for the big projects they received from the palace and provided employment to many foreign artists and craftsmen. As a result, it can be said that the most important point that distinguishes the Fossati brothers from other foreign architects who participated in construction works in the Ottoman Empire is that they were the first foreign architects with their own trained teams to carry out the big projects of the Ottoman Empire.

REFERENCES:

1. Akyürek Göksun, *Tanzimat Döneminde Mimarlığın Değişen Bilgisi: Fenn-i Mimari, Gazeteler ve Diğerleri* [Changing Knowledge of Architecture in the Tanzimat Era: Fenn-i Mimari, Newspapers and Others], in "Türkiye Araştırmaları Literatür Dergisi", Vol. 2009, No. 13, pp. 93-120.
2. Can Cengiz, *İstanbul'da 19. Yüzyıl Batılı ve Levanten Mimarların Yapıları ve Koruma Sorunları* [Buildings and Conservation Problems of 19th Century Western and Levantine Architects in Istanbul], PhD Thesis, Yıldız Technical University, 1993.
3. Doğan Sema, *Sultan Abdülmecid Döneminde İstanbul-Ayasofya Camii'ndeki Onarımlar ve Çalışmaları Aktaran Belgeler* [Documents Describing the Repairs and Works in the Istanbul-Hagia Sophia Mosque during the Sultan Abdulmecid Era], in "Bilig", No. 49, 2009, pp. 1-34.
4. Eldem Edhem, *Ayasofya: Kilise, Cami, Abide, Müze, Simge* [Hagia Sophia: Church, Mosque, Monument, Museum, Icon], in "Toplumsal Tarih", No. 254, 2015, pp. 76-85.
5. Ergin Osman Nuri *Türk Maarif Tarihi* [Turkish Education History], Vol. 1-2, İstanbul, Kültür Yayınları, 1977.
6. Ergin Osman Nuri, *Şehirciliğin Tarihi İnkışâfı* [Historical Development of Urbanism], İstanbul, İstanbul Üniversitesi Hukuk Fakültesi İktisat ve İçtimaiyat Enstitüsü Neşriyatı, 1936.
7. Ertuğrul Alidost, *XIX. Yüzyılda Osmanlı'da Ortaya Çıkan Farklı Yapı Tipleri* [Different Building Types Emerging in the Ottoman Empire in the 19th Century], in "Türkiye Araştırmaları Literatür Dergisi", Vol. 7, 2009, No. 13, pp. 293-312.
8. Eyice Semavi, *Ayasofya'da Abdülmecid'in Mozaik Tuğrası* [Abdulmecid's Mosaic Tugra in Hagia Sophia], in *Ayasofya Yıllığı* [Hagia Sophia Yearbook], 2014, pp. 49-56.
9. Eyice Semavi, *Gaspare Fossati Trajano*, in *İslam Ansiklopedisi*, Vol. 13, 1996, pp. 170-173.
10. Eyice Semavi, *Giuseppe Fossati*, in *İstanbul Ansiklopedisi*, Vol. 2, No. 161, 1971, p. 5823.
11. Freely John, *A History of Ottoman Architecture*, Boston, Wit Press., 2011.
12. Giray Kıymet, *Osmanlı'da Batılılaşma Döneminin Dinamikleri* [Dynamics of the Westernization Period in the Ottoman Empire], in *Arkeoloji ve Sanat Tarihi Osmanlı'da Batılılaşma Döneminin Dinamikleri Tarihsel Çerçeve. Toplum ve Kültür*, Ankara, Kültür ve Turizm Bakanlığı Yayınları, 2009.

13. İhsanoğlu Ekmeleddin, *Osmanlı Bilim Mirası*, Vol. 1, İstanbul, YKY, 2017.
14. Moltke von Helmuth, *Moltke'nin Türk Mektupları* [Moltke's Turkish Letters], İstanbul, Yükselen Matbaası, 1969.
15. Morkoç Selen B., *A Study of Ottoman Narratives on Architecture: Text, Context and Hermeneutics*, Bethesda, Dublin and Palo Alto, Academia Press, 2010.
16. Mülayim Selçuk, *Sinan ve Çağı* [Sinan and His Age], İstanbul, Marmara Üniversitesi Yayınları, 1989.
17. Özcan Koray, *Tanzimat'ın Reformları: Türk İmar Sisteminin Kuruluş Sürecinde Erken Planlama Deneyimleri (1839-1908)* [Reforms of the Tanzimat: Early Planning Experiences in the Establishment of the Turkish Zoning System (1839-1908)], in "Osmanlı Bilimi Araştırmaları", Vol. 7, 2006, No. 2, pp. 149-180.
18. Özlü Nilay, *Fossati Biraderler* [Fossati Brothers], in *Türk Mimarisinde İz Bırakanlar*, Ankara, Afşar Matbaacılık, 2015, pp. 61-75.
19. Özyalvaç Ali Naci, *El-Kâşî'nin "Miftâh El-Hisâb" Adlı Eseri ve 16. Yüzyıl Osmanlı Yapılarında Kemer Biçimlenişleri Üzerine Bir İnceleme* [A Study on El-Kâşî's "Miftâh El-Hisâb" and Arch Formation in 16th Century Ottoman Buildings], in *II. Türkiye Lisansüstü Çalışmaları Kongresi - Bildiriler Kitabı V*, 2013, pp. 1221-1237.
20. Palumbo Isabella, *19. Yüzyıl Türkiye'sinden bir Kozmopolit Gaspare Fossati, İki Dünya Arasında bir "Kılavuz" (1837-1858)* [Gaspare Fossati, a Cosmopolitan from 19th Century Turkey, A "Guideline" Between Two Worlds (1837-1858)], in "Harp ve Sulh Avrupa ve Osmanlılar" [War and Peace Europe and the Ottomans], <https://books.openedition.org/ifeagd/1658>
21. Salbacak Salih, *19. Yüzyılda Pera Bölgesinin Mimari Gelişimi ve Alman Sarayı* [Architectural Development of the Pera Region and the German Palace in the 19th Century], in "IJSHS", Vol. 1, 2017, No. 1, pp. 111-120.
22. Turan Şerafeddin, *Osmanlı Teşkilâtında Hassa Mimarları* [Hassa Architects in the Ottoman Organization], in "Tarih Araştırmaları Dergisi", Vol. 1, 1963, No. 1, pp. 159-200.
23. Tuzaşı Uğur & Aşkun İlgi Yüce, *Klasik Dönemden Batılılaşmaya Osmanlı Mimarlığında İdealleştirme Olgusu ve Batı Mimarlığıyla Olan Mukayesesi* [The Concept of Idealization in Ottoman Architecture from Classical Period to Westernization and Its Comparison with Western Architecture], in "Osmanlı Araştırmaları", Vol. 38, 2011, pp. 213-235.
24. Yazıcı Nurcan, *Osmanlılarda Mimarlık Kurumunun Evrimi ve Tanzimat Dönemi Mimarlık Ortamı* [The Evolution of the Architectural Institution in the Ottomans and the Architectural Environment of the Tanzimat Period], PhD Thesis, Mimar Sinan Fine Arts University, 2007.