

Reading the Transformation of Ottoman Sultan Complexes in Bursa in Urban and Architectural Scale Since 19th Century

By Selen Durak¹, Tulin Vural Arslan², İpek Fetullahoglu³, H. Ceren Sağlık⁴

Abstract

The first Sultan Complexes (kulliyes) of the Ottoman Empire, built in Bursa during the 14th and 15th centuries, played an important role in the formation of residential buildings around and in determining the main transportation axes in the development of the city. These five complexes, including social and religious buildings, left significant traces in cityscape until the 20th century, in addition to their spiritual values in urban history and became an integral part of urban identity. From the 20th century onwards, the developing dynamics of cities threatened the sustainability of monumental buildings and endangered their original identity. Bursa was included in UNESCO World Heritage Site list in 2014 with these complexes that preserved their authenticity and integrity in large despite these changes. However, high-rise buildings in the city began to dominate cityscape and the visibility of the complexes in the city skyline gradually disappeared. In this study, transformation of Sultan Complexes of Early Ottoman Period in Bursa has been analysed in terms of urban and architectural scales from the 19th century onwards. By comparing 1862 Suphi Bey map – the first city map including the most comprehensive information about the urban fabric of Bursa- and the actual city map, changes in urban fabric around the complexes have been identified. In addition, comparison of the 19th century city photographs and engravings with actual photographs helped to reveal the changes in city skyline and the transformations in architectural scale.

Keywords: Urban identity, Ottoman Sultan Complex (kulliye), Bursa

1. Introduction

Urban identity is the reflection of the physical, socio-economic, cultural and historical characteristics of a city. The buildings that make up our cultural heritage and reflect the historical urban pattern have a very important place in urban identity. The preservation and survival of these structures are also of primary importance. In ever changing and evolving urban fabric, historical elements carry the risk of being invisible or disappearing. The most important of these structures, which are important cultural heritages in Bursa, are the complexes built by the first Ottoman sultans (Orhan Gazi, Murad Hudavendigar, Yıldırım, Green (Yesil) and Muradiye Kulliyes successively), Grand Mosque, and the tombs of Osman Gazi and Orhan Gazi (Figure 1, Figure 2). Sultans' Complexes containing these structures, were accepted as the main elements of the original urbanization of the Early Ottoman Period and were included into the World

¹ Associate Professor, Uludag University, Faculty of Architecture, Department of Architecture, 16059, Nilufer, Bursa- Turkey

² Associate Professor, Uludag University, Faculty of Architecture, Department of Architecture, 16059, Nilufer, Bursa- Turkey

³ Graduate Student, Uludag University, Faculty of Architecture, Department of Architecture, 16059, Nilufer, Bursa- Turkey

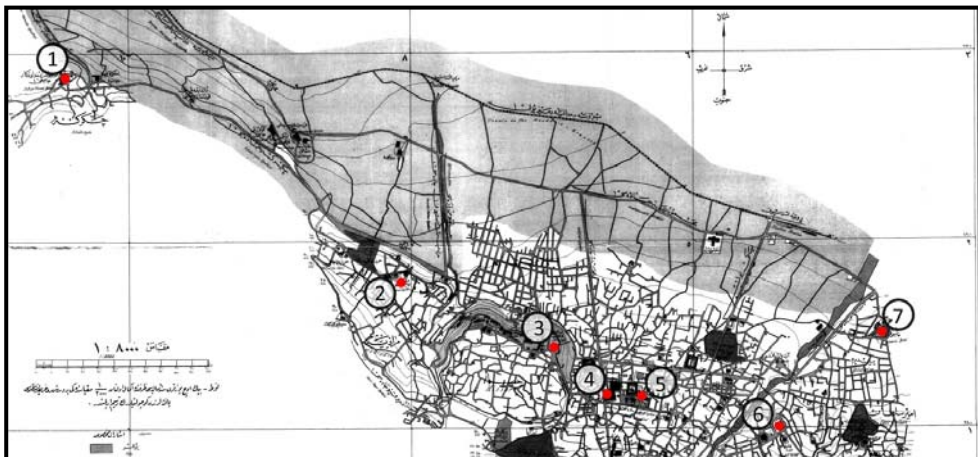
⁴ Research Assistant, Uludag University, Faculty of Architecture, Department of Architecture, 16059, Nilufer, Bursa- Turkey

Heritage List by UNESCO in 2014. During this process, a management plan has been prepared and approved by the local government in order to ensure the sustainability of heritage sites. In this context, maintenance and repairs of the complexes and their surroundings are put into practice within the framework of the approved management plan.



1.Hüdevendigar Kulliyeh and Mosque, 2. Muradiye Kulliyeh, Mosque, Madrasa and Tombs, 3.Osman Gazi and Orhan Gazi Tombs, 4. Grand Mosque, 5.Orhan Gazi Kulliyeh and Mosque, 6. Green (Yesil) Kulliyeh, Mosque and Tomb, 7. Yıldırım Bayezid Kulliyeh, Mosque and Tomb

Figure 1. Locations of the Sultan Complexes and Important Historic Buildings in Bursa Historic City Center (Adapted from Bursa City Map obtained from Google Maps Accessed on: 15.05.17)



1.Hüdevendigar Kulliyeh and Mosque, 2. Muradiye Kulliyeh, Mosque, Madrasa and Tombs, 3.Osman Gazi and Orhan Gazi Tombs, 4. Grand Mosque, 5.Orhan Gazi Kulliyeh and Mosque, 6. Green (Yesil) Kulliyeh, Mosque and Tomb, 7. Yıldırım Bayezid Kulliyeh, Mosque and Tomb

Figure 2. Locations of the Sultan Complexes and Important Historic Buildings in Bursa 1921 Map (Adapted from the 1921 Map obtained from Bursa Metropolitan Municipality Map Archive)

The Early Ottoman Period Bursa Sultan Complexes have been worn out in the historical process or completely destroyed, damaged by the disasters the city has experienced and

repaired afterwards. It is possible to provide information from the historical records of construction and restoration about the changes that the Sultan Complexes experienced in history. However, in order to understand their role in urban landscape and their relation with the surrounding environment, it is necessary to evaluate the visual recordings. In this context, the engravings prepared by travelers who came to Bursa are the most important visual sources. Early Bursa engravings that are available are dated to the beginning of the 18th century. Another important visual material is photographs. The first available photographs of Bursa were recorded in the late 19th century. These visual recordings are important materials in terms of understanding the urban landscape, lifestyle and spatial organization at that time.

The purpose of this study is to understand the changes in urban landscape, to evaluate their relations with the near environment, to analyze the interventions in the facades and interior spaces. In this context, the photographs of the sultan's complexes taken from the same or similar angles were compared with the images recorded in the past. However, due to irregular constructions and regulations during the course of nearly two hundred years, some of the photographs could have not been taken from the same angle with their originals. Within the scope of study, with the aim of understanding the transformations, establishment and development periods of sultan complexes, their architectural features, known damages and repairs have been mentioned. Later, an evaluation has been made in terms of urban and architectural scale comparatively through visual materials.

2. The Development of Sultan Complexes in Bursa

Bursa, located in the Marmara region in the west of Anatolia, was established on the outskirts of Uludag. The city developed in the east - west direction towards the plane located on the north. The rivers (Gökdere, Cilimboz) and the ascents (Uludağ) affected the settlement character of Bursa.

When Bursa was conquered by Orhan Gazi in 1326, it was a Byzantine city consisting of settlements within the Hisar. According to Pancaroglu (1995), the Ottomanization and adoption of the city took place by applying two different methods. One of these methods is based on practical other symbolic reasons. Practical justifications are the provision of the needs of citizens. These included the use of existing thermal waters, agricultural production in planes, provision of water in residential areas and establishment of other social facilities that would serve the public. While Pancaroglu (1995) suggested that the symbolic rationale is controversial, the most widespread view is that it is the adoption of the tradition of Byzantine construction for the acceptance of the Byzantine presence in the conquered lands. An example of this is the use of the dome construction technique in mosques.

After conquering Bursa in 1326, Orhan Gazi aimed to withdraw the development of the city, which had been trapped inside the fortress, to the outside of the fortress. For this purpose, he built the first Ottoman complex (Orhan Gazi Kulliyé) on the east side of the fortress. This social facility, which Orhan Gazi brought to the city, is the first Ottoman complex with practical and symbolic meanings indicated by Pancaroglu (1995). With its different functional units, it aimed to meet the needs of the public and contributed to the

development of the city. The building of Bey Khan made this area the core of the commercial center.

After Orhan Gazi, the other four sultans (Murat Hudavendigar, Yildirim Bayezid, Celebi Sultan Mehmet, Murad II), who ruled the Ottoman Empire successively, built complexes (kulliyes) in the city of Bursa. Through these facilities, where the waqf foundation system was used, the maximum benefit of the public was observed in practice. Symbolically, the power of the dynasty was manifested with the construction of these monumental buildings in selected precious lands.

Almost all of the sultans' complexes (except the Orhan Gazi complex) located in Bursa, are situated at a high place in the city, giving their back to the mountain without coming down to the Bursa plain. Hakky (1992) identified that topography, water resources, functional districts of the city, and relations with other complexes were influential in the selection of locations of these complexes. These locations generally dominated the city skyline. The mosques, with a central location within the complex, were constructed at the highest level of the complex (Hakky, 1992).

In Ottoman cities, the mosques formed the core of new neighborhoods. This tradition, which started with the construction of kulliye complexes continued as new settlements were added to the urban fabric. As can be understood from Figure 3, the mosques and minarets -that are perceived while approaching from the plane to the mountain- are evident in the skyline of the city in the 18th century due to their location at the highest points.



Figure 3. Engraving of view of Bursa from Ankara Road in 1717, Joseph Pitton de Tournefort (Aikaterini Laskaridis Foundation Library Collection, <http://tr.travelogues.gr/item.php?view=43579>, Accessed on: 05.02.17)

2.1 Orhan Gazi Kulliye, Osman Gazi and Orhan Gazi Tombs, Grand Mosque

Orhan Gazi Kulliye, the first Ottoman complex that was built in Bursa in 1339-1340 included a mosque, a madrasah, a public kitchen, a khan and a public bath. The madrasah and the public kitchen no longer exist. The complex was surrounded by a city wall. Orhan Mosque was the first mosque to be built with a zawiya-mosque plan type. In the axis of the mihrab, there are two consecutive domes covering the main prayer space.

There are two iwans on two sides and a portico entrance (narthex/place of last congregation) in front of the mosque. The main walls were built of rubble stone and brick. One or two windows were opened inside stone mouldings with two pointed arches on each facade (Yavas, 2007a). The mosque was repaired in 1417, 1619, 1629, 1732, 1773, 1782, 1794, 1808, 1863, 1905, 1963 successively (Dostoglu, 2011). Karamanoğlu Mehmet had burnt the mosque in 1413, but the walls were made of flint stone, so the mosque maintained its original condition. It was repaired by Çelebi Mehmet in 1417. After the earthquake of 1855, in 1864, the French architect Leon Parville repaired the mosque, but some places such as tie beams were destroyed (Ayverdi, 1976). In 1899, the minaret's lead-covered cone was reconstructed with porphyry stone. In the early 20th century, interventions aimed at sanitizing the structures caused effects that would disrupt the original structure to a certain extent; For example, in 1905, the window in the middle of the eastern wall was disrupted by the Governor Resit Mümtaz Paşa and a door was opened (Ayverdi, 1966).

Emir Khan, located on the northeast corner of the Grand Mosque, was built for income purposes (Yavas, 2007a). Osman Gazi and Orhan Gazi Tombs are located on the slopes of Tophane outside Orhan Kulliyeye. Osman Gazi and Orhan Gazi tombs were completely demolished in the earthquake of 1855. In 1863, Sultan Abdulaziz had these buildings reconstructed. The original floor mosaic pieces on the floor of the Orhan Gazi Tomb have been preserved until today (Dostoglu 2011, Yavas 2007b).

The Grand Mosque was built by Yıldırım Bayezid in 1399-1400. The mosque has a twenty-domed plan with a rectangular shape of 55 x 69 meters (Yavas, 2012). The mosque was repaired in 1494, 1503, 1551, 1563, 1567, 1572, 1583, 1670, 1732, 1737, 1740, 1742 and the most extensive repairs were made after the earthquake in 1855. The minaret cones, made of wood and lead, were reconstructed by stone after the 1958 fire (Dostoglu, 2011) (Ayverdi, 1976).

2.2 Hudavendigâr Kulliyeye

This complex was built by Murat I in Cekirge district outside the city between 1367-1385. The Kulliyeye consists of a mosque, a madrasah, a public kitchen, a tomb and a public bath. A primary school, whose exact location cannot be determined precisely, was also included in the programme of the külliye. However it is thought to be demolished during 1855 earthquake (Eyice, 1998).

Cut-stone and brick were used in alternating courses in the masonry construction of the mosque. As the sole example in Ottoman architecture, the mosque included a madrasah, where the ground floor with zawiya-plan type was used for religious purposes, and the first floor was used for education. On the upper floor, there are 12 student units around a U-type corridor (Eyice, 1998). The mosque was repaired successively in 1520, 1563, 1619, 1635, 1905, 1963, 1975-76, 1998 (Dostoglu, 2011). The mosque was damaged during 1855 earthquake and was repaired during the reign of Abdülhamit II. Four large windows on the lower floor and two side doors were later opened (Ayverdi, 1976). The minaret was not damaged during the 1855 earthquake and has been preserved in its original state until now (Eyice, 1998).

The tomb, with 17.60x17.60 m. dimensions, has a square-shaped plan. The dome and the vaults are covered with lead. There is a mihrab niche on the Qibla wall. there are window

openings on each facade. The columns enclosing the inner central part are Byzantine spolia elements (Eyice, 1998).

The public kitchen, the existing building today, was constructed in 1904. There is no precise information about the original building. Abdulhamit II had the building repaired in 1906. The other repairs were made in 1976-1978. The public bath has a square-shaped plan and is covered with a dome of 6 meters in diameter and with a lantern light on top (Eyice, 1998). The building was repaired in 1990 (Dostoglu, 2011).

2.3 Yıldırım Bayezid Kulliyesi

The Kulliyesi was built in the east of the city between the years 1391-1395. Located on a hill, the complex is composed of a mosque, a madrasah, a public kitchen, a public bath, a tomb and the first Ottoman hospital called darüşşifa, located at a remote place from the kulliyesi (Yavas, 2013a). Aqueducts, that carried water from the mountain Uludag, no longer exist. The kulliyesi was enclosed by walls. Today, only one of the doors is left behind the wall (Yavas, 2013a).

The mosque has a zawiya-type plan. Marble casings around windows and doors and the arch called Bursa arch were used for the first time in Ottoman architecture in this building (Yavas, 2013a). The mosque was repaired successively in 1563, 1575, 1635, 1640, 1649, 1669, 1825, 1847, 1863, 1963 (Dostoglu, 2011). The mosque, that was planned to have two minarets at the beginning, had its one minaret constructed. This minaret was collapsed during 1855 earthquake. Afterwards, two minarets was constructed (Ayverdi, 1976) (Yavas, 2013a).

The madrasah was settled on a plain at a lower level than the mosque. One row of cut-stone and three rows of brick were used in alternating courses in the masonry construction of the madrasah. Entrance was provided through a deep iwan (exedra) and a wide door. The madrasah was not affected so much by the earthquake in 1855, only the portico domes which covered the student units on the southern wall were destroyed. Today the building serves as a health institution (Yavas, 2013a).

The Darüşşifa is the first hospital building in Ottoman architecture. There are four rooms in the front, twenty rooms on the side wings, and three large rooms in the middle across the main entrance (portal), one of them was used as the main lecture room. The building was repaired in 1618, 1649, 1669, 1671 successively. Later, it was abandoned and neglected; it was used as a gunpowder factory and an arsenal. It was restored between 1997 and 2000. Today, it is used as an hospital for ophthalmology. There is a wall remain to the east of the mosque (Yavas, 2013a).

The tomb was built in 1406 by Bayezid's son, Sehzade Suleyman. It has a square plan, a dome with Turkish triangles and three-eyed porch. It is the first tomb with a portico in Ottoman architecture (Yavas, 2013a). It was repaired in 1618, 1640, 1649, 1780, and 1846 successively (Dostoglu,2011). There are a frigidarium, a calidarium, a tepidarium and two private alcoves in the public bath (Dostoglu,2011) (Yavas, 2013a).

2.4 Green (Yesil) Kulliyesi

The kulliyesi includes a mosque, a madrasah, a public kitchen, a tomb and a public bath. It was built during the reign of Sultan Mehmed I in 1419. The complex with its six inscriptions is the unique example in Ottoman architecture. It is located at a central

location and on a hill dominating the plain (Yavas, 2013b).

The main prayer hall of the Green Mosque is covered with a dome with 13 meters in diameter and 25 meters in height and supported on Turkish triangles. There is a fountain inside, under the dome. The mosque was constructed in zawiya-type plan (Yavas, 2013b). The mosque was repaired in 1552, 1573, 1617, 1623, 1635, 1645, 1684, 1783, 1863, 1881, 1893, 1940, 1950 and 2010 successively. The mosque, that was planned to have two minarets at the beginning, had its one minaret constructed. This minaret was damaged during 1855 earthquake, only its pedestals remained. The collapsed minaret was repaired and a second minaret was constructed in 1869. French architect Leon Parville negatively affected the originality of the mosque by painting the sides in yellow during repair (Dostoglu,2011) (Yavas, 2013b).

The madrasah is located on the west of the mosque. The dimensions of the building is 36 meters in width and 38.5 meters in length. There are a total of thirteen student units, three iwans, a courtyard with a portico and a fountain. The main walls were built of rubble stone and brick. The rooms were covered with vaults and top of the vaults were covered with tiles. All of the columns supporting the courtyard portico are spolia elements (Yavas, 2013b).

The public kitchen was located on the south-east of the mosque. There are two rooms with 10 x 23 meters and 10 × 16 meters in dimension. In one of them, food was prepared and distributed, and the other was the dining hall. The building has been repaired in recent years and continues to provide service today (Yavas, 2013b).

Green Tomb has an octagonal shape with walls of 8.20 meters height. The dome of the tomb, which is supported on a high drum having Turkish triangles is 25.5 meters high. The tomb is the highest of all Ottoman tombs. All facades and window tympanums have blue and white tiles. The tomb was repaired in 1617, 1622, 1645, 1671, 1680, 1741, 1762, 1765, 1775, 1776, 1818, 2005 and 2009 successively (Yavas, 2013b).

2.5 Muradiye Kulliye

The kulliye that was built during the reign of Sultan Murad II in 1425-1426, included a mosque, a madrasah, a public bath, a public kitchen, a fountain and the tomb of Sultan Murad II. Since many princes and members of the palace were buried there, the kulliye expanded with various additions over time (Yavas, 2006).

In the mosque, in the axis of the mihrab, there are two consecutive domes covering the main prayer space. There are two iwans and two small rooms on two sides and a five-eyed portico entrance (narthex/place of last congregation) in front of the mosque. Three rows of brick and one row of rubble stone were used in alternating courses in the masonry construction of the mosque. There are two minarets made of brick. The mosque and the minarets were damaged slightly during 1855 earthquake (Yavas, 2006).

The madrasah, with 16 student units, a portico courtyard with an octagonal-shaped fountain and a classroom iwan, is located on the west of the mosque. The walls are composed of rubble stone and brick. The entrance iwan has a dome supported on Turkish triangles and muqarnas tromps. The walls of the madrasah was damaged during the 1855 earthquake and repaired later (Yavas, 2006).

The public bath is located on the west of the kulliye. Three rows of rubble stone and three rows of brick were used in alternating courses in the masonry construction of the

bath. The dome of the frigidarium, which is supported on an octagonal drum with pointed tromp is 10 meters in diameter. The bath also includes two iwans, a rectangular calidarium and two private alcoves (Yavas, 2006).

The public bath, which was ruined in 1960s, was repaired in 1980 and continued its original function for a while. The building, which was destroyed over time, was restored by the municipality between 2008 and 2010 and started to provide service as Personal Development Center for the Handicapped (Anonymous, 2013).

The public kitchen is located 20 meters on the northeast of the mosque. The building has dimensions of 13x40 meters. Its roof is covered with gutter tile. It has been used for many years as a warehouse, being abandoned and neglected. It was restored in December 1996 (Yavas, 2006).

The tomb of Sultan Murad II was built in 1451. In order to conform to the will of the Sultan, the roof of the tomb left open in order to let the rain inside. There are galleries for the hafiz (person who memorizes Quran) to read the Qur'an. One row of cut-stone and two rows of brick were used in alternating courses in the masonry construction. The tomb has a wooden eave decorated with carving. There are no ornaments inside. Its dome was damaged during 1855 earthquake (Yavas, 2006).

3. Reading the Transformation of Sultan Complexes, Osman Gazi and Orhan Gazi Tombs and Grand Mosque From Engravings and Photographs

Bursa, the first capital of the Ottoman Empire, hosted numerous buildings belonging to the Early Ottoman Period. From the 14th century to the present day, there were earthquakes and fires that affected these structures. The earthquakes that left traces in and around Bursa from the early Ottoman period are 1417, 1674 earthquakes and 1855 earthquake which caused destruction of many monumental buildings and residential areas (Dostoglu 1999, Kaplanoglu 2008).

The fires that left traces in Bursa are fires that were set by Timur armies set in 1402 and by Karamanoglu in 1413. The fires that damaged monumental buildings in Bursa Covered Bazaar and Han District were experienced in 1491,1493, 1512, 1518,1519, 1521, 1544, 1584 and 1589. The fire in 1608 was set during the Jalali rebellion. The other fires occurred in 1729, 1743, 1755-1764, 1765, 1767 and 1771. The fire that occurred in 1772 damaged a whole residential district called Setbasi Neighborhood. There were also fires that occurred in 1773, 1801, 1855 that started after the earthquake and 1889. Finally the largest fire that damaged the Covered Bazaar occurred in 1958 causing a great economic loss (Ozcan, 1999).

Following these disasters, various improvement works had been carried out, that enabled the survival of the vast majority of monuments. However some of these interventions damaged the authenticity of these structures to some extent. With the development of urban fabric and the transformation of landscape elements, the monumental expression of these buildings in cityscape had been affected adversely.

3.1 Analysis of the Transformation of Monuments and Their Surrounding Environment in terms of Urban Scale Within the Light of Visual Documents



Figure 4. Grand Mosque and Its Surrounding photographed by Moustier in 1862 (Dostoglu,2001)



Figure 5. Grand Mosque and Its Surrounding today (Authors' archive, 2017)



Figure 6. Grand Mosque through the Citadel Gate photographed by G. Berggren around 1885 (Dostoglu, 2001)

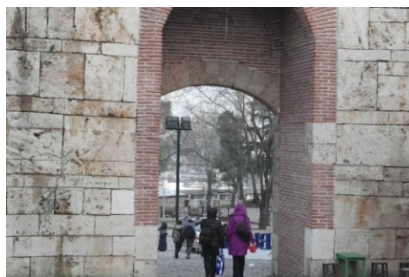


Figure 7. Citadel Gate today (Authors' archive, 2017)

While Ulucami is quite large and striking among the structures around it, today it has lost its old appearance with the multi-storey settlement around it (Figure 4, Figure 5). Ulucami, the first item in the old photograph that appears through the Citadel Gate, is almost unrecognizable from this distance today. As part of the restoration of the walls of Bursa, the Citadel Gate was also restored to its present shape (Figure 6, Figure 7).



Figure 8. Hudavendigar Mosque and Cekirge District taken by Ali Enis Oza in 1925, (Dostoglu, 2001)



Figure 9. Hudavendigar Mosque and Cekirge District today (Authors' archive, 2017)



Figure 10. Postcard of Hudavendigar Mosque and Surroundings (Dostoglu, 2001)



Figure 11. Hudavendigar Mosque and Cekirge District today (Authors' archive, 2017)

Despite the buildings in front, the majority of the Hudavendigâr Mosque could be perceived in the photograph taken in 1925 (Figure 8, Figure 9). However today, only the cone of the minaret is visible from far distance due to the structures surrounding it (Figure 10, Figure 11).



Figure 12. *Yıldırım Bayezid Mosque (on the right) and Emir Sultan Mosque (on the left) photographed by Sebah & Joaillier in 1894 (Dostoglu, 2001)*



Figure 13. *Yıldırım Bayezid Mosque and its Surroundings today (Authors' archive, 2017)*

Yıldırım Bayezid Mosque can still be perceived due to its high location, though it has remained among the intense construction of today's city (Figure 12, Figure 13).



Figure 14. *Green Mosque and Green Tomb photographed by Sebah & Joaillier around 1890 (Dostoglu, 2001)*

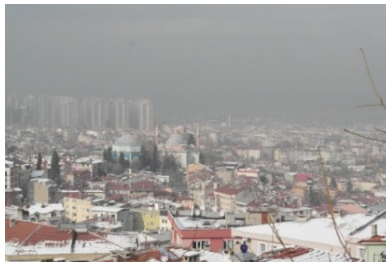


Figure 15. *Green Mosque and Green Tomb today (Authors' archive, 2017)*

Despite the irregular and dense structure around, Green Mosque and Green Tomb still maintain their visibility when viewed from the position where Military High School was located (Figure 14, Figure 15).



Figure 16. Muradiye Complex and its surroundings photographed by Sebah & Joaillier around 1894 (Dostoglu, 2001)



Figure 17. Muradiye Complex and its surroundings today (Authors' archive, 2017)

Located on a high hill, Muradiye Complex has preserved its authenticity until today with the urban landscape around. When compared to the other settlement areas of the city, low-rise housing fabric surrounding the Complex allows its visibility even today (Figure 16, Figure 17).

3.2 Analysis of the Transformation of Monuments and Their Surrounding Environment in terms of Architectural Scale Within the Light of Visual Documents

Orhan Mosque



Figure 18. Postcard of Orhan Mosque around 1900 (Dostoglu, 2001)



Figure 19. Orhan Mosque today (Authors' archive, 2017)

Comparing the photographs in Figures 18 and 19 showing the west facade of the Orhan Mosque, it is seen that the windows on the drum of the domes were closed later.

Osman Gazi and Orhan Gazi Tombs



Figure 20. Osman Gazi and Orhan Gazi Tombs photographed by G. Berggren around 1900 (Dostoglu, 2001)



Figure 21. Osman Gazi and Orhan Gazi Tombs today

It is seen that the ornamental pool seen in Figure 20 in front of Orhan Gazi tomb is not existing in the photograph in Figure 21. The pavings of the ground around the tombs have changed and seats have been placed around the trees.

Grand Mosque



Figure 22. Grand Mosque photographed by C. J. Fettel around 1885 (Dostoglu, 2001)



Figure 23. Grand Mosque today (Authors' archive, 2017)

The most notable repairs were carried out in 1567 and 1572 after severe southwester winds, in 1855 after a destructive earthquake and in 1889 after a fire. The entire facades of the mosque were covered with a thick plaster layer and painted with whitewash. It was during the extensive restoration works between 1951 and 1959 that the mosque attained its original cut-stone facade (Dostoğlu, 2001). In Figure 22, the photograph taken by Fettel shows Ulucami with its minarets before the fire of 1889. While original minaret cones were built of lead, stone was used during the reconstruction of the cones. With the high-rise buildings surrounding the monument, its visibility has weakened (Figure 23).



Figure 24. Postcard of Grand Mosque West Entrance (Özændes, 1999)



Figure 25. Grand Mosque West Entrance today (Authors' archive, 2017)

In Figure 24, it is seen that the walls of the Grand Mosque are painted with whitewash, the window frames and the decoration of the fountain are different from the photo in Figure 25 which shows the original cut-stone facade. The eaves of the west entrance, that can be observed in the old photograph, is not existing today. The tree, which appears to the left of both photographs, is preserved as a natural monument.



Figure 26. North Entrance of the Grand Mosque photographed by Sebah and Joaillier in 1890 (Özændes, 1999)



Figure 27. North Entrance of the Grand Mosque today (Authors' archive, 2017)

When the photographs in Figure 26 and 27 are compared, level differences and the changes in the pavings of the ground can be observed. Moreover, although the dimensions and the proportions during the reconstruction of the fountain are taken into account, some differences in terms of decoration can be distinguished.



Figure 28. Inner Fountain of Grand Mosque photographed by Sebah and Joaillier in 1890 (Özændes, 1999)



Figure 29. Inner Fountain of Grand Mosque (Authors' archive, 2017)



Figure 30. Engraving of Grand Mosque minbar by J.F.Lewis in 1838 (Özdemir, 2015)



Figure 31. Minbar of Grand Mosque today (Authors' archive, 2017)

When old photographs (Figure 28 and 30) are compared with recent photographs (Figure 29 and 31), it is obvious that sprinkler of the fountain, lighting equipments and furnishings inside have changed. The most exclusive samples of calligraphy art in the mosque are prominent in both photographs.

Hudavendigâr Mosque

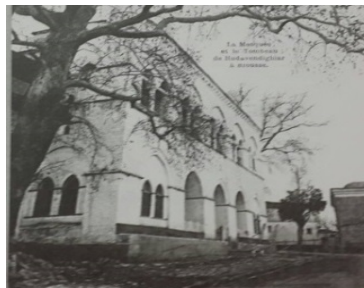


Figure 32. Postcard of Hudavendigâr Mosque around 1900 (Dostoglu, 2001)



Figure 33. Hudavendigâr Mosque today (Authors' archive, 2017)

In Hudavendigâr Mosque, Figure 32 shows a double-arched arrangement on side facades and in one of the alcoves of the front facade of the five-eyed portico entrance (narthex/place of last congregation). It is also seen that the facades of the building were covered with a plaster layer and painted with whitewash. This intervention concealed the original masonry construction of the walls that were composed of alternating courses of brick and stone. In its actual situation, in Figure 33, it is seen that the double-arched arrangement on the front facade has been removed and the facades have been restored in accordance with the original masonry construction.

Yıldırım Bayezid Tomb



Figure 34. Engraving of *Yıldırım Bayezid Tomb* by Mary Adelaide Walker in 1866 (Özdemir, 2015)



Figure 35. *Yıldırım Bayezid Tomb* today (Authors' archive, 2017)

The first Ottoman tomb with a portico, which was built on a natural slope, was located at a lower level than Yıldırım Mosque. In Figure 34, the engraving depicts the stairs that was linking the mosque to the tomb. When Figure 34 and 35 are compared, level differences and the changes in the pavings of the ground can be observed. Today the ground around the tomb is paved with cut-stone.

Yıldırım Bayezid Mosque



Figure 36. Engraving of *Yıldırım Bayezid Mosque* by Mary Adelaide Walker in 1866 (Özdemir, 2015)



Figure 37. Yuldırım Bayezîd Mosque today (Authors' archive, 2017)

The arrangements and the buildings around the mosque prevented to take a photograph from a similar angle with the engraving in Figure 36. In Figure 37, the photograph taken from the courtyard of the complex indicates that the mosque is located on a higher level than the rest of the buildings in the complex.

Green (Yesil) Mosque



Figure 38. Green Mosque photographed by Sebah & Joaillier around 1890 (Özendes, 1999)



Figure 39. Green Mosque today (Authors' archive, 2017)

Because of the broken window glasses in the drum and the lightwell of the dome and the cracks on the plaster of the facade, the building seems to be neglected in Figure 38. Today, the building is very well maintained after recent restorations. The courtyard of the mosque is separated from the road by a low wall from the southern facade, as seen in Figure 39.



Figure 40. Green Mosque Fountain photographed by G. Berggren around 1880 (Özgendes, 1999)



Figure 41. Green Mosque Fountain today (Authors' archive, 2017)

When the photographs in Figures 40 and 41 are compared, it is obvious that the form of the fountain has remained the same. However, the pavings of the ground around the fountain have changed.



Figure 42. Green Mosque Entrance photographed by Sebah & Joaillier in 1894 (Özgendes, 1999)



Figure 43. Green Mosque Entrance today (Authors' archive, 2017)



Figure 44. Engraving of the entrance door of Green Mosque published in the *Travelogue of Edmund Duteuple in 1883* (Özdemir, 2015)



Figure 45. Entrance door of Green Mosque today (Authors' archive, 2017)

In Figure 42 and Figure 44, it is seen that there is eaves over the main entrance and cantilevers carrying the eaves can be observed on two sides of the main entrance decorated with muqarnas. However Figure 43 and 45 reveal that eaves and cantilevers are not existing today. When the photographs in Figure 42 and 44 are compared with 43 and 45, the level differences and the changes in the pavings of the ground can be observed.



Figure 46. Interior view of Green Mosque illustrated by J. C. Carron sc. (Özdemir, 2015)



Figure 47. Interior of Green Mosque today (Authors' archive, 2017)

Figure 46 depicted the space with a dome supported on Turkish triangles between two iwans. In this engraving, an arched window was illustrated in the middle of Turkish triangles. However, in Figure 47, it is seen that this window was closed, probably during later restorations. It is also obvious that the fountain under the dome is different today than the original one.

Green (Yesil) Tomb



Figure 48. Green Mosque photographed by Sebah & Joaillier circa 1890 (Dostoglu, 2001)



Figure 49. Green Mosque today (Authors' archive, 2017)

Green Tomb cannot be seen clearly today as in Figure 49, from the same angle of the photograph in Figure 48.



Figure 50. Entrance of Green Tomb photographed by Sebah & Joaillier, circa 1890 (Özændes, 1999)



Figure 51. Entrance of Green Tomb today (Authors' archive, 2017)

The engraving in Figure 50 illustrated that the close environment of the tomb was a place where children play, a place in everyday life, the photograph in Figure 51 depicts that today it is a place where tourists that came to Bursa visit mostly. With that purpose, an information and a security took place in front of the tomb. When Figure 50 and Figure 51 is compared, it is seen that the eaves of the entrance door no longer exists, the landscape elements have also changed.



Figure 52. The sarcophagus of Celebi Mehmed photographed by M. Héron and illustrated by G. Garen (Özdemir, 2015)



Figure 53. The sarcophagus of Celebi Mehmed today (Authors' archive, 2017)

Figure 52 illustrates people sitting and praying around the sarcophagus. When Figure 52 and Figure 53 are compared, it is seen that the arched pediments above the windows had openings in the engraving, while today these pediments are decorated with motifs.

Muradiye Mosque



Figure 54. Muradiye Mosque photographed by G. Berggren in 1887 (Dostoglu, 2001)



Figure 55. Muradiye Mosque today (Authors' archive, 2017)

In the photo in Figure 54, the second minaret is seen as not yet added. The entrance to the courtyard, which appears between the portico entrance (nathex/place of the last congregation) and the fountain, is not existing today. When Figure 54 and Figure 55 are compared, it can be observed that the window over the door of the east facade that was located in an arched niche was closed during later interventions.



Figure 56. Front facade of Muradiye Mosque photographed by Pascal Sebah in 1870 (Dostoglu, 2001)



Figure 57. Front facade of Muradiye Mosque (Authors' archive, 2017)

When the photos in Figure 56 and Figure 57 are compared, it can be seen that the wall parapet in front of the mosque has been replaced with iron balustrades today. In addition, the pavings of the ground has also changed.



Figure 58. The courtyard of Muradiye Mosque and the fountain photographed circa 1900 (Dostoglu, 2001)



Figure 59. The courtyard of Muradiye Mosque and the fountain (Authors' archive, 2017)

The road where the horse cart stopped in Figure 58, is only open for pedestrian use today. In Figure 59 it is seen that the ground of the courtyard is paved.



Figure 60. Interior of Muradiye Mosque photographed by Sebah & Joaillier in 1894 (Dostoglu, 2001)



Figure 61. Interior of Muradiye Mosque today (Authors' archive, 2017)

Carvings on the drum of dome and on muqarnas, which were not existing in Figure 60, were uncovered during the last restoration in 2014 that can be observed in Figure 61.

Muradiye Tombs



Figure 62. Tourists visiting tombs of Muradiye complex photographed in 1900 (Özændes, 1999)



Figure 63. Sebzeade Mustafa Tomb (on the left), (ortada geride) Gülsab Hatun Tomb (in the middle at the back), Mükrimme Hatun Tomb (on the right) today (Authors' archive, 2017)

When Figure 62 and 63 are compared, it can be seen that the natural landscape has been partially preserved along with the trees despite the change in the pavings of the ground around the tomb.



Figure 64. *Gulruh Sultan and Sirin Hatun Tombs photographed by Sebah & Joaillier in 1894 (Dostoglu, 2001)*



Figure 65. *Gulruh Sultan and Sirin Hatun Tombs today (Authors' archive, 2017)*

The eaves of the entrance gates of Gulruh Sultan Tomb and Sirin Hatun Tomb have changed. The height of the fountain pool and the pavings around have also been altered (Figure 64 and Figure 65).



Figure 66. *Sebzade Mahmud Tomb illustrated by Mary Adelaide Walker (Özdemir, 2015)*



Figure 67. *Sebzade Mahmud Tomb today (Authors' archive, 2017)*

When the engraving in Figure 66 and the photograph in Figure 67 are compared, it can be concluded that parapet walls have been constructed between the arches of the portico in the front facade. The natural landscape with trees around the tomb has disappeared due to the change of the material of the ground around the tomb.

Muradiye Madrasah



Figure 68. *Muradiye Madrasah* photographed by *Auguste Leon* in 1913 (Dostoğlu, 2001)



Figure 69. *Muradiye Madrasah* today (Authors' archive, 2017)

When Figure 68 and Figure 69 are compared, it is seen that the existing urban pattern around the madrasah consisting traditional residential buildings were destroyed to a great extent by the construction of multi-storey buildings. It can also be observed that the house with yellow coat of paint has been preserved.



Figure 70. *Fountain of Muradiye Madrasah* photographed by *Auguste Leon* in 1913 (Dostoğlu, 2001)



Figure 71. *Fountain of Muradiye Madrasah* today (Authors' archive, 2017)

In the photograph in Figure 71, it is seen that multi-storey apartments have been built in the place of most of the traditional Ottoman houses that appear on the Street in Figure 70. Today only the the house with yellow coat of paint is still standing. The fountain on the corner of the roads crossing is existing on the sidewalk of the main street today.

4. Conclusion

In this study, transformation of Sultan Complexes of Early Ottoman Period in Bursa has been analysed from the 19th century onwards. In terms of urban scale, comparison of 1862 Suphi Bey map and the actual city map depicted that Sultan Complexes have preserved their centrality and identity although the urban area expanded through East-West and North direction. In addition, comparison of the 19th century city photographs and engravings with actual photographs helped to reveal the changes in city skyline and the transformations in terms of architectural scale.

At the time when they were built, Sultan Complexes determined the boundaries and the skyline of the city and lead its development. While the Complexes were in a higher and visible position compared to the surrounding buildings in the city skyline before, they have remained among multi-storey residential buildings and business centers around today and have lost their visibility in great measure.

Although the visual materials can guide researchers in order to distinguish the transformation of historic buildings and their immediate environments, it is important to reveal and differentiate the interventions that change their original identity. During the restoration of the buildings under examination within the content of this study, it can be observed that several interventions took place such as inclusion or removal of openings in the walls of the mosques, reconstruction of lead-covered minaret cones with stone, removal of entrance eaves, pavement of the ground around the buildings, and inclusion or removal of parapet walls that enclosed the courtyards. The natural landscape around these building have been partially preserved due to these changes.

As a result of this study, it can be concluded that the risks endangering the urban identity of historic areas and the buildings inside are the disappearance of the historic urban fabric among the high-rise buildings around and the loss of authenticity in case restoration works are not carried out in compliance with the originality of the buildings and the sites. In response to these risks, beyond the preservation of the authenticity of historic buildings and the sites, it is necessary to organize zoning regulations in order to keep the new buildings around at a certain height so as not to disturb the visibility through considering that the natural landscape elements are the important components of identity.

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