

TOP COVERING DEVELOPMENT OF KONYA MOSQUES IN ANATOLIAN SELJUK AND OTTOMAN PERIOD

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ABSTRACT

Konya, which is located in Central Anatolia, is an important settlement area where the first architectural traces are found, many civilizations lived in this region, also had been the capital of the Anatolian Seljuk Empire. Konya mosques have been one of the pioneering and original examples of Seljuk and Ottoman mosque architecture. When the Konya mosques are examined with their architectural features and construction techniques, their development can be seen over the centuries. In particular, the covering system of mosques differs from the 12th century to the 19th century. The cover system that commonly applied in mosques was a dome structure and the bricklaying had been used in the dome and transition element construction in the mosque of Konya in all periods. With this feature, it has shaped the architecture after it. Within the scope of the study, the development of the covering systems of Konya Mosques built between the 12th and 19th centuries was examined and a typology was drawn.

In the early periods of Anatolian Seljuks, there is a simple dome covering the square plan. In this period, the transition from the body walls to the dome was provided by the tromps. In the later periods, the transition to the dome was provided by a planar and prismatic triangle. At the end of the Anatolian Seljuk period, transition solutions from a rectangular plan to a dome are seen. Large mosques started to be built with the Ottoman period. With the increase in the diameter of the main dome, the transition to the dome turned into a pendentive, however during this period the arrangement of the dome tambour appeared on the facade. In the early Ottoman period, while the mosques with a single dome and a central plan were built as in the Seljuk period; mosques in complex form were built as time progressed, with each section covered with differently.

Keywords: Konya, mosques, covering system, dome.

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1. HISTORY OF KONYA

Konya has the remains of the first settled life dated to prehistoric periods. Boncuklu Höyük (Hittite Settlement) dating to B.C. 8000; Çatalhöyük (Phrygian and Kimmer Settlements) dated to B.C. 7000 is located in Konya (Orak, 2016, p. 12-13). Founded by the Assyrian Trade Colonies, the King's Road, which was later used during the Hittite and Lydian periods, used as a military and trade route during the Byzantine period and in the Middle Ages called as Silk Road. Konya was an important center on Silk Road (Baykara, 2002; Konyalı, 2007).

It is thought that the inner City Walls surrounding the area of Konya (Alaeddin) Hill in the historical city center of Konya was built by the Romans and reinforced by the Byzantines (Konyalı, 2007). The city became the capital in the 11th century with the advance of Seljuk Empire in Central Anatolia and taking Konya from Byzantium (Baykara, 2002). The inner City Walls were repaired during the Seljuk period and the palace was built in this area by I. Kılıçarslan (Konyalı, 2007; Redford, 1991, p.54). Today, neither the inner City Walls nor the outer City Walls have survived. There is only the ruins where the II.Kılıçarslan Mansion is located (Karpuz, 2002). When the city grew in the 12th and 13th centuries, the outer City Walls was built. The city was identified with Mevlana in the second half of the 13th century (Baykara, 2002). Until the 14th century, the city was the capital of the Empire and important architectural works were done.

At the beginning of the 14th century, Konya came under the domination of the Karamanoglu Principality and the second half of this century also came under Ottoman's. During the conflicts between the Ottoman Empire and Karamanogullari in the 16th century, the population decreased, the Silk Road lost its importance and consequently the architectural activities decreased (Tanyeli, 2001, p. 177).

In the late 15th and early 16th centuries, the lack of significant construction activities in Konya shows that there is no rapid change (Tanyeli, 2001, p. 177). In the 16th century, Sultan Selim built a mosque with his name. In this century an important part of the buildings built in the Mevlana Complex. Besides, it is noteworthy that no caravanserai were built in the city during this period. So, it can be assumed that the city was not active in inland commerce during this period. It is seen that no madrasah was made in the city in the 16th century and only 2 were built in the 17th century. (Tanyeli, 2001, p. 178-181). The city starts to show its modern architectural effect with the 19th century.

2. TOP COVERING SYSTEMS OF SELJUK AND OTTOMAN BUILDINGS IN ANATOLIA

2.1. Top Covering and Transition Elements in Anatolian Seljuk Period Structures

The construction activities in Anatolia were influenced by Roman and Byzantine construction techniques. The structures built during these periods were covered with vaults or domes and no transition elements were used. The corners of the square or rectangular plan are rounded to form curved surfaces (Kolay, 2017, p. 52). The Anatolian architecture of the 11th-14th centuries is the period of formation. The tomb, mosques, madrasah and caravanserais were influenced from the east. However, it can be said that the Middle Ages Anatolian architecture had developed a style that differs from all Islamic countries (Kuban, 2006, p. 83, p. 93).

During the Great Seljuk period, the oldest mosques in Anatolia were built as multi-legged and vaulted (Aslanapa, 2007, p. 2-5). During this period, the transition elements detailed triangles, planar triangles with stalactite and curved triangles were used belong to Iranian architecture. In the Anatolian Seljuk architecture, the transition element consisting of plane triangular elements appeared in the 13th century and for the first time it had been seen in Konya Alaaddin Mosque and Sivas Gök Medrese Masjid (Ögel, 1972, p. 23). It was started to be applied as a Turkish triangle consisting of plane triangles with the 14th century (Kolay, 2017, p. 54).

In the Anatolian Seljuk structures, the dome is generally of a semicircular cross section and starts from a wall or a low pulley (Gabriel, 1931). The domes of this period, which have radiant lined stones and bricks, have a simple braiding system under the influence of local construction technique (Kuban, 1965, p.92). The brick is used as a continuation of the Byzantine tradition in the West (Kuban, 1982, p. 67-68). In Eastern and Southeastern Anatolia, the stones used in the cover and stalactite ornaments were formed. The brick used in the dome structure was decorated with a tile application and brick course which origin is a type of ornament seen in Iran (Kolay, 2017).

2.2. Covering and Transition Elements in Mosque Structures of Ottoman Period

The mosques, which have been built since the first years of the Ottoman period, have a single-domed cubic plan, the most common form of mosque that emerged during the Seljuk period (Arık, 1999, p. 103). In the classical period of the Ottoman Empire, vault coverings were gradually abandoned and the dome

was used as the cover of all sizes (Kuban, 2007, p. 168). After the Ottomans tried the dome in small buildings, it spread to the middle space and iwan sections, and then applied to all the units forming the structure and became an inseparable part of the architectural system (Yetkin, 1955). The central space is gathered under a single dome with Edirne Üç Şerefeli Mosque in the second quarter of the 15th century and Şehzade Mosque in the 16th century (Kuran, 1986, p. 12). Two small domes on both sides of the main dome in the Uc Serefeli Mosque are programmed to be smaller and lower than the middle dome. Thus, a gradual rise occurred in the center and a new architecture emerged in the Ottoman mosques (Aslanapa, 2004). In the monumental mosques built since this century, the number of half-domes was changed and diversity was created and the central dome was emphasized (Kuban, 1958, p. 22-24).

In the early periods of Ottoman architecture, the planar triangle or prismatic triangular belt continued to be used as the transition element to the dome in the harim space (Kuban, 2007, p. 126). As of the Fatih period, its use decreased. This system, which is the application examples of the I. Beyazid period, was completely abandoned in the Classical period (Şimşek, 2010, 159).

The brick dome is a common technique for the entire Islamic world as well as for the Byzantines. However, it is unique to the Ottoman period that used as a single covering large areas and was placed on the walls by means of the tromp and the Turkish triangle (Kuban, 2007, p. 164). When the diameter of the dome grows, the height of the transition belts increases and the space rises, so pendentive was used as the transition element in the larger diameter domes, which were more common in Ottoman architecture (Tükel Yavuz, 2005, p. 136).

3. METHODOLOGY

Top cover systems vary in terms of construction technique and material usage according to periods. The top cover is an important element in the architecture of a mosque that determines the identity of the building. Konya had been the capital of the Anatolian Seljuks for so long, therefore the number of mosques that have survived to the present day is higher than the other cities. For these reasons, mosques in the historical city center were chosen as the subject of study in order to examine the development of covering systems. Throughout history, the settlement area has been Alaaddin Hill and its surroundings. From the 12th century, mosques and masjids belonging to the Seljuk and Ottoman periods were built within the outer City Walls. For this reason, the mosques in the outer City Wall area were chosen as a study area (Figure 1).

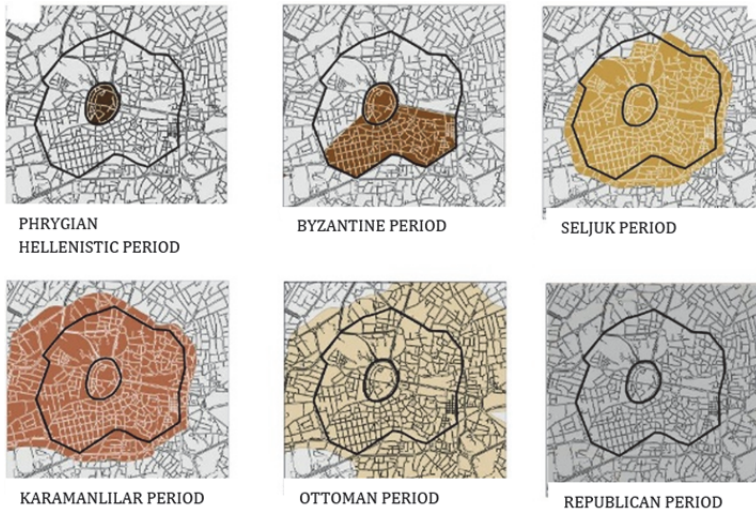


Figure 1. Development of Konya historical city center according to periods

This study includes the evaluation of the development of covering systems of mosques built between the 12th and 19th centuries in the historical center of Konya in terms of construction techniques, material usage and decoration elements. In this context, 14 Seljuk period and 17 Ottoman period mosques were grouped according to their construction dates (Table 1). The determined structures by field work;

- On-site detection: Measurement and photogrammetry studies were performed on the original material size.
- Evaluating existing building survey drawings: Building surveys and restoration works of the examined buildings were reached by utilizing the archives of the Regional Directorate of Foundations.
- Typology: Covering technique, material and dimensions, transition elements and decoration characteristics of mosques which have single domed, multi supported and multi domed cover system have been classified as typological.

4. COVERING SYSTEM IN KONYA MOSQUES

Although the most characteristic structure of the Islamic city is the mosque, the original mosque typology had developed in the capitals of the Anatolian-Turkish states in the Seljuk period (Tekinalp, 2015, p. 45; Kuban, 2006, p. 86). The single-domed masjids built during this period have been prototypes of the main mosque type built throughout the Ottoman (Öney, 1989, p. 8; Kuban, 2006, p. 93).





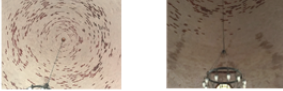





4.1. Top Covering System of Anatolian Seljuk Period Mosques in Konya

4.1.1. Construction System

The first mosque built by the Seljuks in Konya is the Alaeddin Mosque, which is the grand mosque and was completed in 1220 (Karpuz, 2002). Alaeddin Mosque consists of three different parts. It consists of a multi-legged and wooden covered section in the east, a domed place in front of the mihrab and 5 nave sections in the west (Karamağarlı, 1982; Asistay 2006, p. 119). The eastern part of the mosque has flat ceiling with wooden beams on brick arche on the east - west axis arranged parallel to the mihrab over the spolia columns. The eastern part was also covered with with pointed brick arches and wooden beamed slabs over stone pillars and marble pillars. The middle part is surrounded by corridors in front of the mihrab which are square planned and covered with dome and separated by arches on three sides. In this study, the domed structure in the middle was investigated in order to compare with the single - domed mosques built in the 13th century. The dome in front of the mihrab niche of the mosque was supported by massive pillars on the mihrab wall and brick lanchet arches rising on the individual massive pillars separating the side corridors. The planar triangular belt was used as the transition element from the square to the dome. It is programmed according to the corner points of the triangular belt area. According to the main triangle at the corners, the triangular units on the right and left are carried out first by being wide and then narrow. Two symmetrical orthogonal triangles were programmed back to back in the dome tangent sections corresponding to the midpoint of the walls. Bricks were used in the triangles of transition to the dome as in the arches. Above the triangular belt, the dome with 8 meters in diameter starts. The thickness of the dome has 1.5 rows of bricks (35–38 cm). The dome was plastered because the tiles were poured while the pulley was completely covered with tiles as in the transition element (Table 1). The dome cover is not perceived from the outside due to the sections in the east and west and the iwan in front.

İplikçi Mosque is the only mosque built in the city center in the 13th century. İplikçi Mosque was built with multiple legs and transverse naves. The pillars on the main walls and the wall pillars with single face stone braces were connected to each other by brick pointed arches to form three sections parallel to the mihrab. The cover system rising on the arches is a cross vault. Located in the main entrance gate and the mihrab axis, the main section consists of two sections with elliptical domes; the larger and square section in front of the mihrab is covered with a dome. This axis is planned to be higher than the side sections covered with vaults. Main walls and covering system are brick. Curved triangles were used as transition elements to the dome. The elliptical dome axis is higher and the vaulted section on the two sides was covered with a hipped roof.

Table 1: Covering system of the Konya mosques (drawing: re-organized from the archives of Konya General Directorate of Foundations)

CENTURY	THE NAME OF THE MOSQUE	TRANSITION ELEMENT			COVERING SYSTEM		
		Transition Element	Construction Technique and Ornament	Material and size	Covering and Dimension (Diameter/Thickness)	Construction Technique and Ornament	Material and size
12th century	Akadim Mosque	Triangle	Horizontal glazed tile	Brick 12-14x4-4 cm	Dome 800/35 cm	Horizontal brickwork in its original glazed tile today hand-drawn ornamented	19x4/20x4 cm.
							
13th century	Iplikçi Mosque	Convilinear triangle	Plastered not decorated	Brick 15-16x3/4 cm.	Cross vault, elliptic dome and dome	Plastered not decorated	Brick 20/21x2/4 cm.
	Selamîrî Mosque Erdemîrî Mosque Tercüman Mosque Abdülâzîz Mosque Hoca Hasan Mosque	Triang Triple triang	Plain, horizontal not decorated	Brick 15x4 /20x3-4 cm.	Dome 750-650/35 cm.	Plain, horizontal not decorated	20/21/25 x 4/5 cm.
	Kadı İzzettin Mosque Şems Tebrîzî Mosque				Timber construction and hip roof	Wooden flat ceiling	
	Tahir and Zühre Mosque Bulğur Tekke Mosque Beyhekim Mosque	Prismatic triangular two rows triangular	Plain ornamented with triangular	Brick 12/15 x 3/4 cm.	Dome 680-750/35-40 cm.	Vertical and horizontal brickwork like a star tile tile board in the center	15/19x3/4 cm.
14th century	Tahir Papa Mosque	Triple triang	Plain and ornamented in the center with a triple triang	Brick 12/15 x 3/4 cm.	Dome 700/35 cm.	Plain, horizontal not decorated	20/30 x 4/5 cm
							
15th century	Kadı Mürsel Mosque Hacı Hasan Mosque	Yemşaklar			Timber construction and hip roof	Wooden flat ceiling	
16th century	Nasuh Bey Mosque	Pendestive	Plain, horizontal not decorated	Brick 15/30x4 cm.	Dome 7/45 cm.	Plain, horizontal not decorated	15/30 x 4/5 cm.
	Piri Mehmet Papa Mosque	Triang	Plain, horizontal hand drawn ornamented	Brick	Dome 11,40 m./40 cm.	Plain, horizontal hand drawn ornamented	15/30 x 4/5 cm.
	Sultan Selim Mosque	Muharrem Triang Pendestive	Plain, horizontal hand drawn ornamented	Brick	Dome and half dome main dome 14,20 m./40 cm.	Plain, horizontal hand drawn ornamented	~15/25 x 4/5 cm.
17th century	Şerafettin Mosque	Pendestive, triang, Turkish triangle	Plain, horizontal hand drawn ornamented	Brick	Dome, half dome, wall main dome 11,6/0 m./70 cm.	Hand drawn ornamented	~18x35 x 4/5 cm.
							
18th century	Hacı Fetrah Mosque Nakıboğlu Mosque Ortaoğlu Mosque Salihi Papa Mosque	Yemşaklar			Timber construction and hip roof	Wooden flat ceiling	
19th century	Kapu Mosque	Timber pendestive	Timber hand drawn ornamented	Timber	Wooden dome and flat ceiling	Eight-sided dome hand drawn ornamented	
	Çaybaşı Burhan Dede Mosque Sarıyakub Mosque		Flat ceiling		Wooden dome in a flat ceiling	Eight-sided dome not ornamented	
	Azîziye Mosque	Pendestive	Hand drawn and gilded ornamented with Ilkcarri style	Brick	Dome 12,30 m./60 cm.	Hand drawn eight-sided ornamented with Ilkcarri style	
	Saatçi Mosque İhtiyarîtin Mescidi Sükran Mescidi Polatlı Hançerli Mosque Bağcıbaşı Mescidi	Yemşaklar			Timber construction and hip roof	Wooden flat ceiling	

İplikçi Mosque looks like a castle with monumental dimensions and high main walls. The local masjids are 800 x 800, 650 x 700 cm and generally have a square plan.

The transition element to the dome of Şekerfuruş, Erdemşah, Tercüman Abdülaziz and Hoca Hasan Masjids, which was built at the beginning of the 13th century, is a distinctive tromp (Table 1). An octagonal plan was formed, the dome begins with tromps. Between the tromps, the window openings were arranged in the rising portion with the main wall (Figure 4b). The cover is made of bricks from the center to the skirt of the dome, without decoration and plastering. The dimensions of the bricks used in tromp and dome are 18-25 cm. in length, 4-5 cm in height, and their colors are red and light red. There are small tromps in symmetrical order on both sides of the tromps of the Tercüman and Hoca Hasan Masjids. On the skirt of the dome with these small tromps consists of a dodecanese plan.

Kadı İzzettin Mosque and Şems Tabrizi Masjids, which were built in the middle of the 13th century, were designed with a hipped roof and flat ceilings. Konya Sahip Ata Mosque, which was built in 1258, is the oldest wooden pole mosque of the Anatolian Seljuks, but the original structure has not survived since it underwent a fire (Aslanapa, 2007, p. 69). Kadı İzzettin Mosque has been repaired and has survived, the rectangular plan and the flat wooden ceiling carried by the wooden pillars are covered with a hipped roof. Şems Tebrizi Mosque has a rectangular plan and includes a tomb. The harim part of the mosque is divided into two parts with a wide pointed arch made of cut stone, starting from the lower level of the main walls parallel to the mihrab. The main walls and the wooden beams placed on the belt were covered with a hipped roof. The interior were covered with wooden slat ceiling. These vernacular structures divide the development of the mosque plan in two centuries.

The mosque, which was built in the second half of the century, has a different construction technique and ornament than the first century. The Bulgur Tekke Masjid was built as a part of a Islamic lodge and has a different architecture with its monumental mihrab and thick columns on the last congregation wall, but it is difficult to comment on the original form (Altun, 1971, p. 50-51; Konyalı, 2007, p. 118-119). The mescid part of the structure is covered with a brick dome with a diameter of approximately 700 m in the form of a semicircle. The adjacent part of the mosque belongs to the lodge and has a barrel vault. The transition element of the masjid was applied as a plane triangle instead of the tromps in the first half of the century. As in the Alaaddin Mosque, the triangular belt must be programmed from the corner of the space. At the corners of the wall, the first triangular array is placed with the pointed end below the base of the dome, and its symmetrical equilateral triangles are carried out on both sides and take a prismatic form. The

middle parts of the wall where the dome is tangential to the body walls are not continued straight, but the belt plane in the transition element is moved outward as a triangle and completely circulates the skirt of the dome. The dome construction technique also differs during this period. The brick wall of the dome was programmed as if a small star motif was opened in the center towards the skirt, but the upper parts of the dome were repaired and plastered. In order to apply this brickwork, the bricks in the star form are vertical and the bricks between the motif are parallel to the dome skirt. At the center of the dome is a circular tile panel with floral motifs. The dimensions of the brick used in the dome and transition element mesh are 12-15 x 3-4 cm. In Tahir and Zuhre Mosque, the transition element to the dome is the Turkish triangle consisting of plane triangles. This triangular belt is arranged like as Bulgur Tekke Mosque (Table 1). The dome cover is similar. There is a circular panel with tile ornament in the middle of the star motif starting from the center towards the skirt (Figure 2).



Figure 2: The dome braiding at Tahir and Zuhre Mosque and the tile panel at the center of the dome

Although Beyhekim Mosque is similar to Bulgur Tekke and Tahir and Zühre Masjid with its cover material and ornament, it is a different example where the transition from rectangular plan to dome cover is applied. In the masjid section whose plan scheme is not straight rectangular and the mihrab wall is angled, the transition element to the dome triangular belt is of different dimensions in each corner. However, it has been solved flawlessly with the interior organization and this difference in structure is not understood. Since it is necessary to regulate the vertical distance of the transition element according to the horizontal distance that the transition element will pass in order to move from 6.80x9.20 m length to the dome with a diameter of 6.80 m, two rows of prismatic triangles are applied

as transition element to facilitate the transition to the dome. Although a high pulley is formed in the interior, the façade wall continues on the outer façade and the pulley is not noticed. However, the walling continues as bricks from the beginning of the pulley. The triangular elements are arranged so that the backline of the prismatic triangles is at the corner points. The dome was built with bricks of 10-12 cm in length, forming the star motif towards the skirt of the dome, as in mosques built in the same period. In this structure, it is seen that a window opening was opened within the dome cover for the first time. In the middle of the dome there is a tile monogram, as in Tahir and Zuhre Mosque. İc Kara Arslan Masjid, which was built in this period, is an interesting example with its double-storeyed trompet passages and mihrab, and Hacı Ferruh Masjid with its monumental entrance (Kuban, 2006, p. 83, p. 93).

Tahir Pasha Mosque, which has survived in the city center from the 14th century, has a covering similar to the single-domed masjids seen at the beginning of the 13th century. The brick dome is parallel and lined up to the skirt of the dome starting from the center. It passes from an uneven rectangular cover to the dome as in Beyhekim Mosque. Large brick braided tromps were used as transition elements. The inner lattice of the tromps is half-domed but arranged in three parts. The corners of these fragments formed another tromp just above the body wall. There are small tromps on both sides of the main tromp.

Kadı Mursel and Hacı Hasan Mosque, one of the mosques built in the city in the fifteenth century, have been repaired and built with a vernacular feature and a wooden breaking roof. The cover of the Kadı Mürsel Mosque is a hipped roof that rises above the wooden beams resting on the walls of the body, and the interior has a wooden slat ceiling. Hacı Hasan Mosque was built with wooden support. The structure is divided into three areas with flat arched scarves resting on wooden posts and is covered with a wooden breaking roof.

The single-domed mosques and masjids dating to the Anatolian Seljuk period in Konya are not perceived in the facade. While the interior is covered with tromp and triangular belts, the main outer wall on the facade continues up to the dome skirt. Thus, the building facade is emphasized as higher. In some buildings, the windows located between the tromps are perceived as a mahfil Starting from the level where the dome skirt starts, the cornice line is formed on the façade and the dome cover starts. floor window depending on the high wall appearance of the facade (Figure 3).

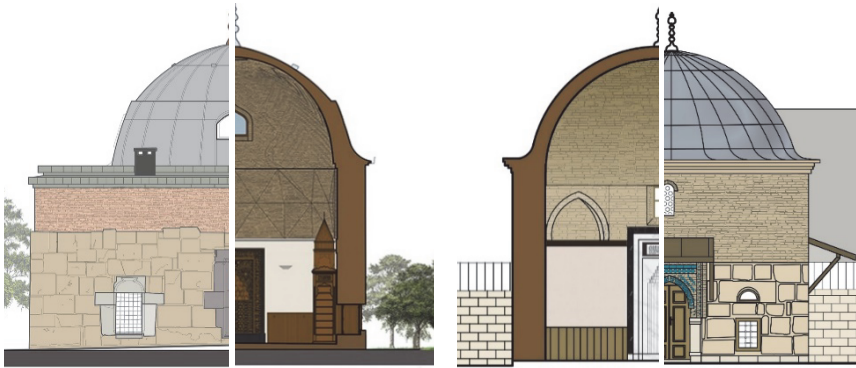


Figure 3a: Beyhekim Mosque

**Figure 3b: Şekerfuruş Mosque view and
cross section (re-organized from the archives of Konya General
Directorate of Foundations)**

4.1.2. Material

Covering and transition elements of the structures constructed in Konya during the Seljuk period were made with bricks. The dimensions of the brick used in the covers and transition elements of the buildings in the 13th century are 18x4 cm, 21x5 cm, 20x4 cm. In the second half of the 13th century, a single-domed masjid was decorated with a brick-covering technique. The bricks are built perpendicular to the center and the bricks between the motif are built horizontally to form a star motif that follows one another from the center of the dome and opens towards the skirt of the dome (Figure 5). It is seen that 10x4, 12x4 cm bricks are used to create the ornament. In addition, similar size bricks were used in the transition elements of the Turkish triangle in this period to give the triangle form. The bricks are red and light red, and the joint gaps vary between 3-4 cm. In the mosques built with vernacular features, wooden material was used as a cover material in the bearing pillars, ceiling covering and roof structure in the interior. Today, it is seen that the covers of all the structures examined are covered with lead.

4.1.3. Ornament

The Alaaddin Mosque, built in the 12th century, has wooden transverse sections on the east and west. The triangular belt in the transition to the cover of the domed section in front of the mihrab in the middle, each triangle is covered with tiles of different composition. On the edge of the triangles there is a border with a rumi motif in a black band, and in the border there is a decoration program with different star compositions created with geometric forms. In its original state, the tile-covered dome tiles have been cast and are now plastered. The only

mosque built in the city center in the 13th century is Iplikci Mosque, the covering system is completely plastered and does not contain any decoration. At the beginning of the century, the cover system was left plain and plastered in the mosque structures. In the the second half of the century, brick was used both as a structural material and as a decoration material in the domed mosques. The opening from the center of the dome towards the skirt and the bricks are perpendicular to each other and decorated with star motifs. In the center of the dome, however, tile-covered circular panels were applied. The dome of Tahir and Zuhre Mosque is surrounded by tile-decorated kufic scripts consisting of broken lines forming 5-pointed stars in blue tones. In Beyhekim Mosque, there is a geometric decoration with kufic inscriptions in the dark interlocking rumi decoration (Figure 4). Bulgur Tekke Mosque has a floral motif in blue and navy blue colors.



Figure 4: The dome of the Beyhekim Mosque

4.2. Top Covering System of Ottoman Period Mosques in Konya

The first important monument built in the Ottoman period is the Piri Mehmet Pasha Mosque. In the classical period, Selimiye and Şerafettin Mosques were built in the city, and in the 18th century, lean mosques, lodges and madrasahs were built in vernacular architecture; however, it was lost (Tanyeli, 2001, p.178, 181). While the relations with the East were strong in Anatolian Turkish architecture, construction techniques of Eastern origin were used. these effects are also seen in the covering system. Pendentives were used as a transition element to the dome in the Ottoman period. Thus, we can say that pendentive originates from Anatolia (Kuban, 1982, p. 69)

4.2.1. Construction Practice

Nasuh Bey Mosque, whose construction date is not known exactly, is thought to have been built in the late 15th century (Konyalı, 2007, p. 171-172). The mosque has the characteristics of an early Ottoman mosque architecture. The mosque consists of a single-domed harim area, and a three-parted mosque with a portico, each covered by a dome. The dome of the harim room was built with brick in order and from the center towards the dome skirt, the diameter of the dome is 11 m. Since the size of the building is larger than that of the Seljuk period, pendentives were used as the transition element to the dome. The pendentive looks like a sail vault since it starts from the bottom alignments of the wall corners and rises towards the dome skirt. Brick arches with a height of 1.5 rows rise on the walls from the two long sides of the pendants. Thus, the heavy appearance of the dome is lightened. The dome skirt windows that emerged with the Beyhekim Mosque in the Anatolian Seljuk period are seen in Nasuh Bey Mosque in circle form and as eight. In addition, there is a row of brick cornices carried outside on the dome skirt like the mosques in the Anatolian Seljuk period. It is the dome tambour that suggests that the building belongs to the Ottoman period and is not seen in the mosques of the Anatolian Seljuk period. In the interior, the brick cornice on the dome skirt and the facade cornice are on the same level and the pulley wall begins. While the tambour ends with a cut stone braid and a stone cornice on the dome windows, the dome cover is perceived as a flat dome on the exterior.

Lack of important construction activities in Konya in the late 15th and early 16th centuries indicates that there is no rapid change. Piri Mehmet Pasha is a single-domed lean building built in 1523-24 (Tanyeli, 2001, p. 177-178). It is similar to the Nasuh Bey Mosque, consists of three small domes covered porticoes and a single dome harim area. While the transition element to the portico domes is pendentive, transition to the dome is provided with sectional tromps in the harim. The brick dome and transition elements are completely plastered and include three-piece cornices with a hand-drawn decoration. The cut stone main outer walls on the facade, like in the Nasuh Bey Mosque, ended in the transition to the dome with a cornice and the octagonal pulley wall was raised behind the facade as cut stone braided.

Selimiye Mosque, built in this century, is the most important Classical Period building of the city. Each section of the seven-piece portico is covered with a dome and is supported by pointed arches. the transition element is pendentive. The plan scheme of the main space consists of two central sections with central domes and three sections. The building was enlarged with a half-domed area in front of the mihrab. Each section on the side naves is covered with a dome. The

covering elements of the main dome with a diameter of 14 m and the domes on the side walls are pendentive. The half-dome in front of the mihrab was provided with stalactite at the corners of the wall and a hemispherical trump above it. The dome cover is plastered, but the dome should be brick braided. The window sequence begins just above the dome skirt. The staging feature in the facade and cover in the classical period is not perceived in the facade and interior of the Sultan Selim Mosque. The domes covering the porticoes and side naves are almost half of the main dome level; Behind the portico domes, the façade wall rises flat and hard. The inner main walls rise towards the main dome in the interior, and are supported by arch scarves on the mihrab and entrance wall. The dome cornice of the building, which is designed in a large size, remains weak (35 cm in height). The transition element to the main dome is pendentive and there are 16 windows with a semicircular arch on the dome skirt. A tambour was not formed on the exterior façade, the windows were supported with light protruding pendentives, and the lead was covered with the dome. The façade rises straight up to the dome skirt as in the Seljuk period buildings. The height of the building is emphasized, but it is perceived that the covering system is gradual on the mihrab façade.

The Şerafettin Mosque, built in the 17th century, has a different plan scheme compared to the Selimiye Mosque, and the covering system is also different. It is noteworthy that with the covering system, the building is elevated. The covering of the mahfil floor and the side naves planned parallel to the main entrance door of the building are at the same level. Unlike the Sultan Selim Mosque, it is covered with cross vaults. In the mihrab niche covered with a half dome at the same level as these areas, a plane triangular belt was applied as a transition element to the cover. The narrow shade in front of the mihrab is covered with a pointed dome from the mihrab cover, and the dome is covered with trumpets. The dome cover of the main nave begins from the top of this half dome. The transition element of the main dome with a diameter of 11 m is pendentive. The whole covering system is plastered and decorated with hand-drawn. The window space is left between the narrow section in front of the mihrab and the trump transition to the dome. An intermediate pulley was formed by crowning it with a cornice on the exterior. Between the narrow section in front of the mihrab and the trump transition to the dome, a window space is left. An intermediate pulley was formed by crowning it with a cornice on the exterior. There is a large dome cornice adorned with concave and convex profiles on the skirt of the dome, and a window array is located over the cornice. The window line is seen as a curved pulley supported by struts at the lead-covered corners of the facade. Cover system is perceived with the main dome on the exterior. The feature in

which the height of the building was emphasized in pyramidal form by stepping with the covering system in the classical period can only be seen on the mihrab. A decorative dome is placed in the corners of the harim section so that the side and front facade do not look heavy like in the Sultan Selim Mosque (Table 1).

In the 18th century, Hacı Fettah, Nakipoğlu, Ovalioğlu and Salihpaşa Mosques are unpretentious structures in the vernacular architectural tradition. Since the number of old mosques in the city is sufficient, newly built mosques are limited (Tanyeli, 2001, p. 181). These structures are small-sized structures with flat roof and hipped roof (Table 1). Kapu Mosque and Aziziye Mosque are two of the most important structures built in the city in the 19th century. Both buildings were rebuilt in this century, instead of those destroyed by the big Konya fire. Kapu Mosque consists of five naves and twenty-five sections, similar to the mosque burned, in vernacular type, wooden multi-pillar, parallel to the altar. There are nine large sections in the center and narrow sections on the sides. Large areas in the center are covered with elliptical form, with a baghdadi dome, and the dome is passed with pendentives on wooden columns. Since it has an intense hand-drawn program, the cover is perceived as a masonry system. Narrow parts on the four sides of the harim are decorated with flat wooden ceilings. Since the dome covers are flat and located in the middle part of the mosque, they are not perceived from the front. The Çaybaşı Burhan Dede Mosque, which was built in this period, has two domes and the Yellow Yakup Mosque with a single baghdadi dome and is covered with a hipped roof. In these structures, the transition element to the dome is not applied, the dome rises through the wooden ceiling and the covering system is plastered. Saatci, İhtiyarettin, Polatlar Hatip Mosque and Sukran and Bagevliya Masjids built at the end of the 19th century are covered with a wooden structure with a hipped roof and flat roof. Aziziye Mosque is the most remarkable example built in this century. While maintaining the classical mosque typology with its central domed square plan, it is decorated with Baroque, Rococo and Empiric styles (Figure 5). The portico of the building consists of elliptic domes and five sections covered with cross vaults. In the main space, the corners of the building were covered with half domes and they created pointed arched scarves in the parts facing the main space. The arches that sit on the wall pillars form an octagonal plan on the dome skirt. The dome with a diameter of 18 m is accessed by pendentives between the arches. There is an 80 cm wide cornice at the dome skirt and the dome rises behind the cornice. While there is a window array on the cornice, this part is highlighted on the facade with an octagonal tambour wall. There are weight towers of the same weave type at the corners of the pulley, which is made of cut stone. The eaves of cornice over the dome windows also circulate around the towers. From the

cornice there is the main dome cover and the curved and pointed cover of the weight towers in the Baroque style.

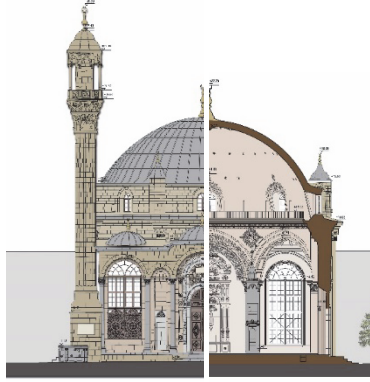


Figure 5: Aziziye Mosque view and cross section (re-organized from the archives of Konya General Directorate of Foundations)

4.2.2. Material

The covering material of the domed structures with masonry system built in the classical period is brick and they are generally 25-30 cm x 3-4 cm, 15x30 x 3-4 cm in size. The dome weave was made with about 1.5-2 rows of bricks. While the tambour walls started on the exterior with the dome skirt from the 15th century, the tambour walls were formed on the exterior of the dome skirt level in the 16th century. The tambours are the same as the facade material and are usually built with cut stone. The covering material of the mosques, which were built in the 18th and 19th centuries, with hipped roofs and flat ceilings, is wooden. The cover of Aziziye Mosque, built in the 19th century, is a brick dome. There is a cut stone braided tambour on the exterior from the dome skirt.

4.2.3. Ornament

In the mosques belonging to the Ottoman period, the covers are plastered and decorated with hand-drawn. In decoration, vegetal motif, sulus script, rumi motifs and geometric patterns were used. In the Aziziye Mosque, the Rococo style attracts attention with gold leaf, gilding and rich hand-drawn decorations. The dome cornice decorated with folds "C" and "S" on the dome skirt adds elegance to the structure as well as strengthening the structure as a structure. Mosques covered with wood have a slatted ceiling and plastered. The wooden baghdadi domes and flat ceilings of the Kapu Mosque are decorated with hand-drawn decorations.

5. CONCLUSION

Konya, which had been placed many civilizations in history, became the capital of the Anatolian Seljuk's in the 12th century. During this period and the Ottoman period, the city developed within the outer fortress line. As in Islamic cities, the mosque is the most characteristic building type in Konya. In mosques, the covering system is important that it has both a structural element and a symbolic meaning. The mosque construction had been continued with timber and curb roof since the ulucamii of the city.

The majority of the single-domed masjids built between the 13th and 14th centuries were located in Konya and are important for the Anatolian Seljuk architecture. Since this period, the covering material of the mosques with masonry domes was brick, which is widely used in the West. In the first mosque buildings, a type-specific to Anatolia had appeared by blending Eastern construction techniques. The domes of the mosques built during the Anatolian Seljuk period were without plaster. The mosques, which were built in the early periods, had simple, non-decorated domes and the transition elements to the dome were the tromps seen in Eastern architecture. In the transition to the dome with the second half of the 13th century, triangles began to be used as different types of Turkish triangle and prismatic triangles. While the dome was a structural element that covered a square plan in the 12th century, the bricks used in the construction technique on the dome were arranged at different angles to ornament the dome and on the center of the dome Eastern glazed tiles used in circular panels in the 13th century. At the end of the Anatolian Seljuk period, the dome and transition elements were developed and with the formation of new transition belts, the dome could also covered the rectangular planned spaces. During the period of Karamanoğulları, the construction of the building was low; Tahir Pasha Mosque is the only mosque belonging to this time in the outer fortress line that has survived to this day. It was covered with a dome with a simple and tromped transition element seen in the early periods of Anatolian Seljuks.

The first mosques of the Ottoman period were built with a single dome like the masjids of the Anatolian Seljuk period but at a larger size. The dome window seen in the last period of the Anatolian Seljuk was widely used in this period and the cut stone tambour wall appeared on the exterior, had been supported with buttresses recently. With the increase of the dome diameter, the transition to the dome element became a pendant, unique to Anatolia. In Sultan Selim and Şerafettin Mosques dated to the Classical Ottoman period, half domes used in the covering system with the main dome were new. On the transition to the dome, the pendants were used with tromp, Turkish triangle, muqarnas from local architectural tradition. During the Ottoman period, the dome was completely

plastered and ornamented with hand-drawn. It is seen that the facade wall was continued up to the dome skirt during the Anatolian Seljuk period and the building was elevated. In the Ottoman period, this feature was sustained partly on the front and side facades of the mosques, the mihrab facade rises with dome covers. In Anatolia, mosque cover systems with different features had been developed in each period by combining the construction techniques and the use of materials originating from the East and the West with local traditions.

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