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Muslim Architecture under Ottoman Patronage (1326-1924)

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MUSLIM ARCHITECTURE UNDER OTTOMAN PATRONAGE (1326-1924)

Introduction

By the end of the 12th century, the Islamic world had lost most of its power, prestige and prosperity through internal fighting and had fragmented into small states. These conditions encouraged its enemies to attack it from various fronts. The invasion of the Tartars from the east resulted in widespread destruction. Like locusts they did not leave any building standing, any green leaf alive and any book of knowledge without setting fire to it. The saga of the destruction of Mutassim's Baghdad is a clear evidence of the evil violence of these invaders. The Christians, under the Spanish banner, attacked Islam from the West and progressed slowly into Andalusia until they reached the famous Gibraltar then crossed into Morocco and Western Algeria. They could have infiltrated inwards towards the rest of the Muslim World if it was not for the Ottoman army, the only and new emerging Muslim power then. Their intervention to defend North Africa paved the way for the annexation of most of the Muslim land into their young Caliphate[1]. The unification of Muslims under the Ottoman caliphate, extending in Eastern Europe, Greece, Hungary and the Balkans, was a great incentive for artistic and architectural revival. A clear evidence of this is the rich Ottoman heritage which still makes up a great proportion of Muslim and Eastern European cultural and artistic patrimony. The paper discusses various circumstances which affected the evolution of Ottoman architecture, concentrating on key buildings.

The development of Ottoman architecture followed a process similar to that of earlier Muslim periods. In early years when the Ottoman Caliphate was in its infancy, between the 14th and 15th centuries, the architectural and artistic vestige of the Suljuks, their predecessors, continued to be the main source of inspiration. As the Caliphate reached its apogee, from the 16th century onwards, an independent style developed. The main factor behind this development was the great progress achieved in the economic and political life of the Caliphate. This period was reigned by decisive and victorious leaders such as Muhammed Al-Fatih (1451-1581), the conqueror of Constantinople (1453), Selim I (1512-1566) and Suleyman, the magnificent (1520-1566). This is the period when the Ottoman Caliphate reached its maximum expansion incorporating lands, with various cultures, skills and economic fortunes, from all continents of the old world. Such wealth generated a considerable building dynamism that resulted in the spread of hundreds of monuments and complexes all over the Ottoman domain, especially in Turkey and its capital Istanbul. The richness of Ottoman architecture is perceived in the variety of its building typology as well as in its design and in the formal aspects of various structures. The discussion of the Ottoman contribution cannot be given justice in one single paper, and so concentration is made here on investigating key buildings to draw conclusions of the general features and developments made by the Ottomans.

Kulliye

The Ottomans inherited from the Seljuks a variety of public functional buildings (see **Main - Seljuk Architecture1.pdf**). The first of these is the Hana, a building complex consisting of the mosque, a madrassa (primary school) and a mausoleum. In the case of Ulu cami (Divrighi, 1228-29) a hospital was added. This complex emerged as a cultural product assembling religious, educational and welfare needs of the society (population) in one location for greater management and control. The Ottomans applied the name *Kulleye* to this complex with a little change. The *Kulleyes* were usually founded, maintained and run by religious institution known as Wakf (*vakfiye*) or Habous (in North Africa). This institution is a charity

that receives donations in the form of money, subsidies and land and building endowment. Through these donations the Wakf paid wages of clerics (imams) of mosques and schools' teachers and provided free meals for the poor. To recover these costs, the Wakf erected other buildings for commercial use which it ran directly or rented for other users. Buildings such as a public bath (*hammam*), offices (*hana*), shops and bazaars were added to the *Kulleye* for this purpose. Later, a mausoleum (*turbe*) was added to accommodate the relics of the highly respected founder of the *kulleye* or the Sultan himself.

The first *kulleye* was built by Sultan Orhan Gazi in 1334 in Iznik[2] consisting of a mosque, a public bath and a public kitchen (*imaret*). Sultan Orhan also built another *kulleye* complex in Bursa involving a mosque, a bath (known as Bey Hamami), an *imaret,* a madrassa and a han (known as Bey Hani). Unfortunately nothing remains from the Iznik complex and only the mosque and bath remain from Bursa *kulleye* today. One of the earliest *kulleye* that is noteworthy is the Fatih complex, named after its founder Sultan Muhammed Al-Fatih (1451-1481). The complex, which consists of a mosque, sixteen madrassas (added in the fifteenth century), a *turbe* of the Fatih himself, a library, a hospice (*tabhane*) and *imaret*, was designed and built by Atik Sinan (not the famous Koga Sinan) in 1471. It was the first major building to be commissioned by the conqueror of Constantinople. The choice of the site on one of the seven hills surrounding Istanbul was both symbolic and expressive of the desire of the Sultan to over see the Hagia Sofia. Historic sources report that Atik Sinan who was a Greek architect[3] failed to make the dome of the mosque bigger and higher than Hagia Sofia which disappointed and angered Al-Fatih that he amputated the hand of the architect. Sinan complained to the city judge (*Kadhi*) who summoned the sultan to his court and judged that the architect should cut the hand of the sultan. Seeing the sultan obeying the orders of the judge handing his hand to be amputated, the Greek architect was astonished with the Muslim justice, pardoning the sultan and converting to Islam. The story adds that at the end Al-Fatih drew his sword to the judge saying: "I would have killed you if you did not judge justly". The judge in his turn drew his sword saying: I would have killed you if you refused to obey Allah's justice". Sources also indicate that the sultan rewarded Sinan with an ownership of a whole street of the town for his pardon and conversion to Islam, and this gift was recognised by Ahmed III three centuries later[4].

Since then Kulleye became a building tradition that every sultan engaged in constructing, often after successful war campaigns, as a token of appreciation to God (Allah) for victory. Bayzid II (1481-1512), for example, built his kulleye in 1506 in Istanbul, Suleyman I (the Magnificent) (1520-1566) built Suleymanye in 1557 also in Istanbul, and Selim II (1566-1574) built his Selimye in 1574 in Edirne. Through the Kulleye and other buildings the wakf has long played a dynamic role in the development of the Muslim city in general and the Ottoman city in particular. The kulleye also brought a distinctive identity feature adding to the Islamic culture and faith of the Ottoman/Turkish populations.

The Ottoman Mosque

Under the Ottomans the mosque continued to play central role in the religious, cultural and political life of the Muslim society. It was not surprising that it was given the central location in the külliye, emphasising its centrality in the order of the Muslim space, a concept which did not loose its importance until recent times. The Ottoman mosque evolved through a complex process of metamorphosis introduced throughout the life span of the Ottoman reign. Below are the general evolution processes behind the morphological and architectural developments in the Ottoman architecture, based principally on the architecture of the mosque.

Early Mosques

The Ottoman mosque evolved from the traditional hypostyle plan used widely in most parts of the Muslim world. Early mosques consisted of rectangular structures with flat roofs raised by arcades and joined by a courtyard with an ablution fountain. The Medrassas were very similar to those seen in the Seljuk period organised in iwans with vaulted roofs and courtyards. By mid fourteenth century, a diversion from these features began to evolve. This horizontal scheme was abandoned in favour of a vertical structure rising into the sky, into the infinity. This was achieved firstly by giving the pillars greater height, which added to the space an unprecedented grandeur. Secondly, the adoption of a domed roof, sometimes arranged in a number of small domes rising progressively like steps towards the main dome of the central aisle (nave), produced the unique sanctified atmosphere.

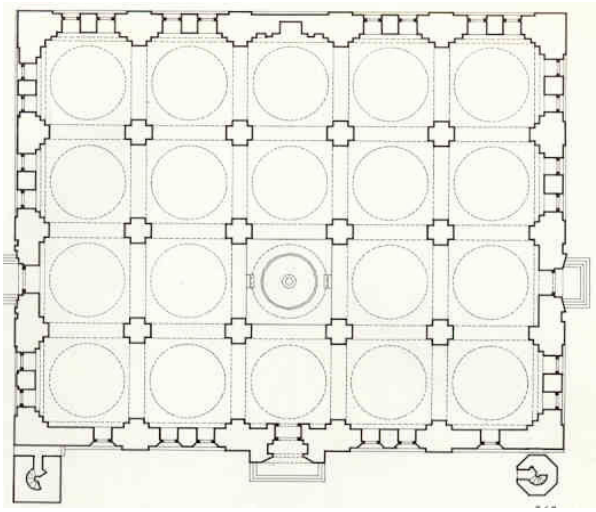

Figure 1 - General view of the interior of Ulu Cami Mosque, Bursa 1396
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.544.

The attempt was also to re-organise the internal space of the mosque. To achieve this, the cupola in front of the Mihrab was substantially enlarged allowing greater span which gave the area more centrality. In these conditions, the infinity is expressed through verticality and hence the dome became the dominating skyline of Ottoman mosques, probably influenced by Hagia Sofia as many Western academics would suggest. Moreover, the perfect centralisation of the space under the main dome affirmed its unity and confirmed the symbol of one God, a fundamental concept in the religion of Islam, conceptualised by *Al-Tawhid*, which forms the essence of Muslim faith. In the view of Davies[5]:

> *"The interior is then one unit to be perceived in its entirety at a single view. Its reality is not to be found in the domes and arcades but in the cavities they define. Plenitude of space ... majestic space ... continuous space ... tawhid (the consciousness of divine Unity) made visible."*

Such an attempt was first introduced in Haci Ozbek Cami (Iznik, 1333) where we can trace two main developments. The dome in front of the mihrab was enlarged to dominate most of the roof span. The portico was unusually located in the northern side and consists of a vaulted extension with three bays of pointed arches. These provisions reappeared in many mosques including Alaettin Cami, (Bursa, 1335). The

architect of the mosque of Orhan Bey in Bursa (1339) tried another technique by succeeding the enormous cupola of the front of Mihrab with another one of similar size behind it. In Ulu Cami Mosque of Bursa (1396-1400) the architect devised twelve cruciform pillars for the support of the total span of the space and its roof, which was arranged in twenty equal bays (squares) covered with twenty cupolas[6].

The ablution fountain occupied the third square of the mihrab axis. This axis, which is also the central axis of the plan, was emphasised by setting its four domes on higher drums than the remaining ones. In another step the number of these piers was reduced to a minimum of four producing nine bays with nine cupolas as seen in Eski cami Mosque of Edirne (1402). Greater span was thus achieved as the intervals between these pillars increased substantially**.** The emphasis on the mihrab axis is expressed by the varying shape of its domes. The Mihrab dome was raised on triangles, the central on muqarnas and the third dome on squinches. Many academics consider these two mosques to be the origin of the so called Classical Ottoman architecture which was to emerge immediately after these two experiments[7].

Yesil Cami or The Green Mosque (1412-1413)

Indeed, the features outlined above were subject to some adaptation and modification in series of mosques that followed. The first of these is Yesil Cami of Bursa (1412-1413), founded by Mehmet I (1403-1421) and known as the Green Mosque.

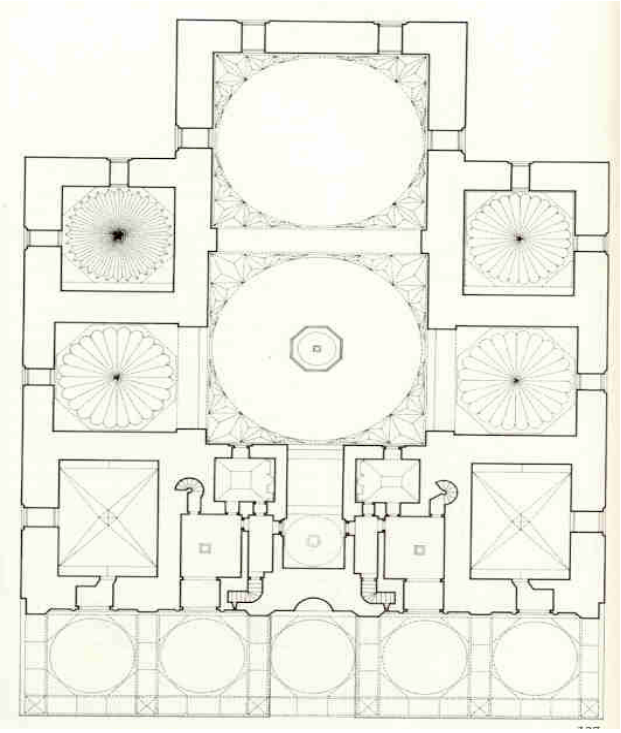

Figure 3 – The plan of Yesil Cami Mosque showing the domination of the domes.
Source: Kuran, A. (1968), '*the Mosque in Early Ottoman Architecture'*, University of Chicago Press, p. 116.

It is a complex site that included in addition to the mosque, a bath, a tomb, and a Medrassa. Typical of Ottoman mosques, Yesil Cami was dominated by its domes, which provided the roof of most of the interior space.

The Mosque consists of three main domed sections; the Qibla Iwan, the nave, and the minaret section.

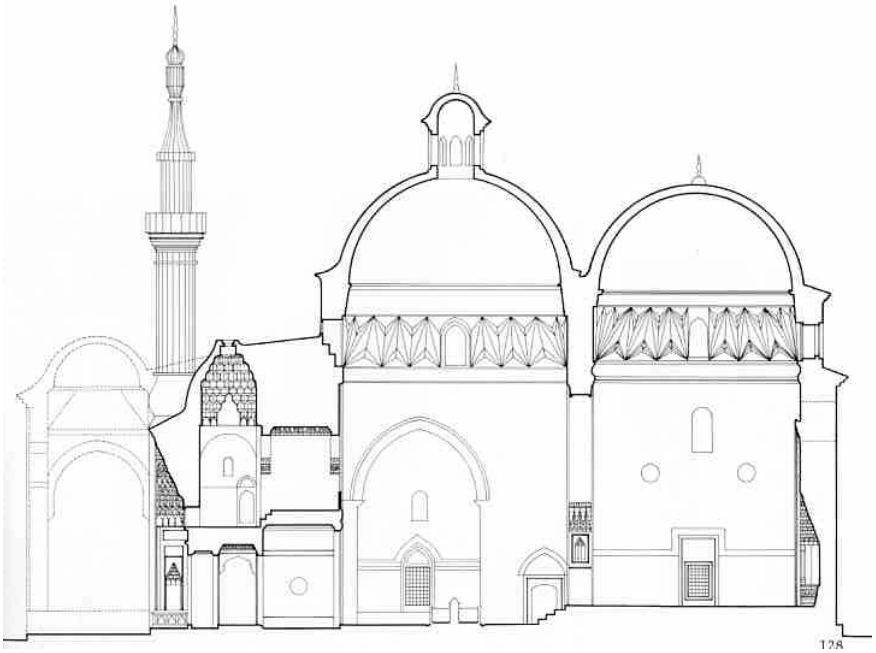

Figure 4 - Section of Yesil cami mosque showing architectural details.
Source: Kuran, A. (1968), '*the Mosque in Early Ottoman Architecture'*, University of Chicago Press, p. 117.

The fame of the Mosque is connected to its Persian made blue and green tiles decorating its walls, which were made by artisans from the Iranian city of Tabriz (Hoag, 1969, p.42).

There are suggestions which indicate that it was here where the so called *cuerda seca*[8] glazing technique was first introduced into Turkey and Ottoman civilisation[9]. The general decor and ornamentation of the mosque recall that of Hall of the Ambassadors at Alhambra. It is a mixture of both late Seljuk and early Ottoman art as seen in the style of its entrance, which clearly emphasised the Seljuk tradition of extensive use of muqarnas.

These cupolas later increased in size and number first in Atik Ali Pasha (Istanbul, 1496) which provided another development by increasing the size of the main dome and introducing a half dome to support it from the front towards the qibla side. The mosque comprises a prayer hall with its centre falling under the central dome and the mihrab area is located under the half dome. Towards the back there is five bay porch. However, in Bayzid II Mosque[10] built in Istanbul by an architect named in 1505, the main dome reached an unprecedented size and was supported by two large half domes on its East West axis.

The rest of the area, which consists of galleries in the form of side aisles on the North and south axis, was covered with smaller domes giving the main hall extra breadth. The architect maintained the use of courtyard, which he introduced to the south of the prayer hall bordering it with domed arcades on the four sides. The two thin cylindrical minarets were raised at a distance adjoining the two domed wings, t*abhane*, which functioned as travellers' accommodation.

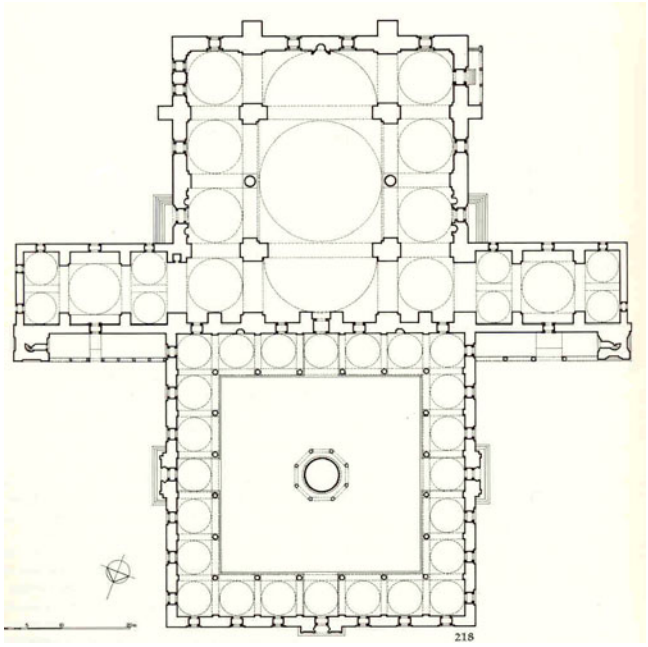

Figure 5 - The plan of Bayzid II Mosque, Istanbul 1501-06.
Source: Kuran, A. (1968), '*the Mosque in Early Ottoman Architecture*', University of Chicago Press, p. 194.

Figure 6 - General view of Bayzid II Mosque showing the prayer hall joined with the courtyard. The structures at the wings are the *tabhane* serving as accommodation for travellers. The minarets are unusually planted away from the mosque structure.
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.548.

Shahzade Mosque (1544-1548)

The reign of Suleyman the Magnificent (1520-1566) was the period when the Ottoman Caliphate reached its apogee. Following in the successful path of his father Selim I in the East, Suleyman concentrated on the West annexing much of eastern Europe and North Africa to the Ottoman domain. As the Caliphate reached an unrivalled level of prosperity, culture and arts flourished. Building programmes were commissioned in every corner of the Caliphate. To accompany this building ambition, the fame of Sinan, who to become the great master architect, was just blossoming. Having his first building experiments among the Janissary Corps, Sinan's decisive contribution to the development of the Ottoman architecture is indisputable. His architectural successes started with Shezade Mosque (Istanbul, 1544-1548), where the features discussed above were taken to a new dimension. In this Mosque[11], Sinan increased the size of the main dome to reach half the size of the diameter of the prayer hall, and flanked it with four half domes, one from each side.

Figure 7 - Shazadeh Mosque (Istanbul, 1544-48) was the first important building built by the famous Sinan, showing the new concepts of verticality and unity.
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.550.

The spacious interior was broken only by four huge pillars carrying the dome. The mihrab was set into the bay of the eastern half dome which supports the central dome. The huge prayer hall was lightened by a series of large stained glass windows, which were pierced into the surrounding walls as well as the drums of the domes. The courtyard with its central ablution fountain was attached to the eastern wall of the

prayer hall in the same fashion seen in Bayzid II mosque above.

Suleymanye Mosque (1549-1557)

In Suleymaniya Complex (1549-1557), Sinan' s masterpiece, everything was chosen to perfection to meet the majesty of the complex and its mosque in particular. The site was carefully chosen, by the Sultan himself, on a hill above the so called Golden Horn.

Figure 8 - Hagia Sophia (Istanbul, 532-37) exterior showing the structural composition and support of the dome.
http://class.ee.iastate.edu/rmander/BobAnderson/Photos/2001-09%20Med%20Cruise/Istanbul_Photos.htm

The mosque was to stand high in the midst of its subordinate structures (medressas, hammam, public kitchen ..etc.) dominating the landscape of the whole Horn area and the city in general.

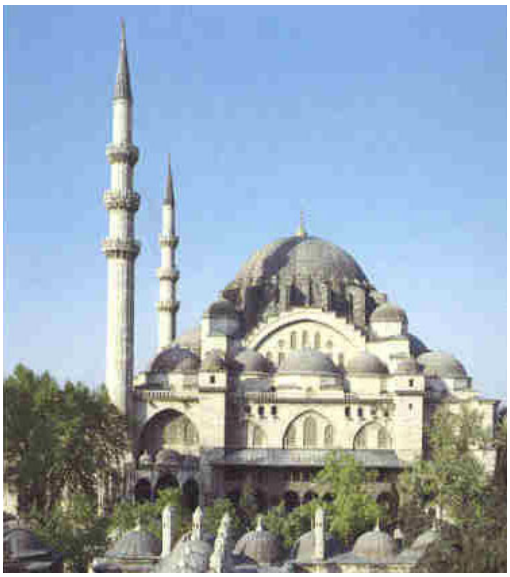

Figure 9 - Suleymaniye Mosque exterior showing similar structural provisions.The mosque plan is, in general, a continuation of Bayzid and Shahzade mosques. Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.552.

However, the influence of the Hagia Sofia on much of the mosque character cannot be objected as Sinan himself is known to have said that he wanted to out pass it in the Suleymaniye Mosque, and many parallels were drawn between the two monuments. It is true that Sinan reiterated the structural scheme of St Sophia, especially the main dome supported by two semi-domes from the north and south.

Further, he employed two huge arches from east and west to support the dome which he also chose to expose, as in Hagia Sofia. Other solutions included carrying the dome on pendentives raised on robust pillars. The thrust of the pillars is supported by external buttresses which were hidden within the northern wall and exposed in the southern side. The use of corbels (cornices in Hagia Spfia) between arches and surfaces to separate between the hemispheric surfaces with the straight ones clearly transmit the Hagia Sofia approach.

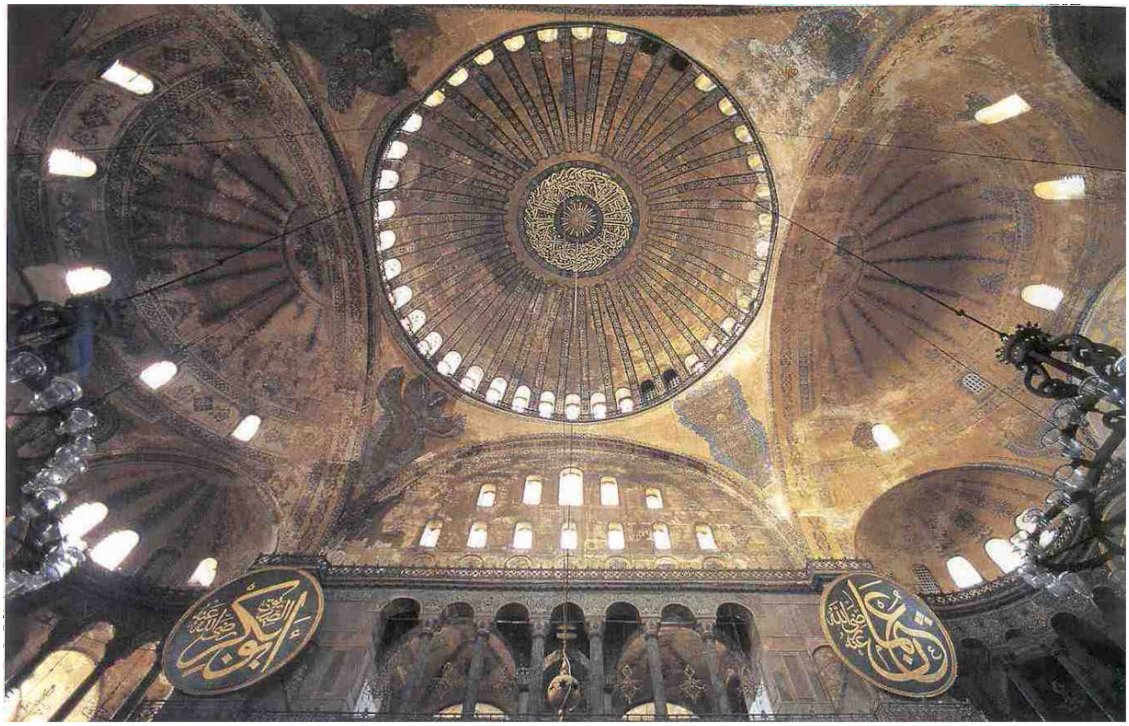

Figure 10 - The dark atmosphere of the Hagia Sophia showed the defect missed out by Justunian's architect.
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.554.

However, Sinan's interpretation of the form created totally different spatial concepts. The massive polychromed arches that support the main dome created brighter environment as the drums of domes and the surfaces underneath them were skilfully adorned with extra windows in the objective of avoiding the comparable darkness of the Hagia Sofia.

The whole light scheme introduced a new approach, lighting from above, translating the heavenly light into this majestic space; confirmed by the Nuskhi inscription which adorns the centre of the dome:

> *Allah is the Light of the heavens and the earth. The Parable of His Light is as if there were a Niche and within it a Lamp: the Lamp enclosed in Glass: the glass as it were a brilliant star: Lit from a blessed Tree, an Olive, neither of the east nor of the west, whose oil is well-nigh luminous, though fire scarce touched it: Light upon Light! Allah doth guide whom He will to His Light: Allah doth set forth Parables for men: and Allah doth know all things. (Lit is such a Light) in houses, which Allah hath permitted to be raised to honour; for the celebration, in them, of His name: In them is He glorified in the mornings and in the evenings, (again and again),(24:35,36).*

It is worth noting here that in the 16th century the dome of Hagia Sophia was adapted to the above mystical meaning as golden Nuskhi (thuluth) calligraphic inscription of the above verses was added to its centre.

Figure 11 - The bright interior of Suleymenye symbolising the divine light coming from above, from the sky (dome).
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.555.

From this centre, Sinan moved gradually away towards the parts on the periphery. Further difference from Hagia Sophia is that Sinan organised the whole space around the main dome, which reaches 48 metres at its apex, and central space under it, thus giving it the brightest light and adorning it with the best décor. Further to this point, we find Sinan employing his forms to externally express this. In addition to the

hierarchy of his domes, the minarets were skilfully designed to both enhance the character of the building and emphasise the importance of the domed part of the building (praying hall). Sinan employed a successful symmetry combined with good proportional designs. For the two minarets at the junction of the courtyard and the domed structure, he made them taller with three balconies. Meanwhile, those at the end of the courtyard he chose them smaller with only two balconies. Such contrast endorsed the axial movement from the south (the prayer hall) to the north (the courtyard). Such arrangement is exactly the opposite in Hagia Sophia where the scheme was to move from the periphery and parts to the whole, the centre.

Another piece of ingenuity of Sinan in this mosque is the ventilation system. With such a large size the mosque posed a number of challenges concerning the supply of fresh air and the disposal of smoke coming from oil burners and candle sticks. Due to the large number of burners and candles needed to light the whole mosque, the smoke produced would not only have affected worshippers but also damaged most of the decoration and surface paintings. Sinan spent considerable time studying the wind direction at the site, which allowed him to devise an astonishing ventilation system based on careful location of windows. Accurate instructions were drawn to which windows should be open and when depending on the wind behaviour. With this system, Sinan managed to draw the currents of air inside the mosque, into a small chamber which he built over the main entrance. The other remarkable solution Sinan applied to the smoke gathered in the chamber was to produce lampblack, a principal ingredient of very high quality ink used by Turkish calligraphers. This is indeed one of the earliest modern applications of environmental friendly architecture.

In addition to ventilation issues, the size and depth of the mosque posed another challenge connected very much to "acoustic science". Sinan was faced with the dilemma of distributing homogeneously the sound through various corners of the structure, so that every worshipper, during the prayers, can hear and follow the imam who stood at the mihrab corner. Sinan tackled this question on two fronts. First solution was to apply his design to this necessity. Thus, in Suleymaniye, for example, he placed the muezzin's terrace (*mahfil*) not next to the mihrab as the usual practice but next to the southwest pillar. He also added extra small terraces to northern pillars. The muezzin, who makes the five daily calls of prayer and repeats, with a louder voice, after the Imam leading the prayer, could be heard in every corner of the mosque. In Selimye, Sinan designed the muezzin's terrace at the centre of the mosque.

These design solutions have certainly helped in improving the distribution of sound but did not completely solve it. Sinan really needed our modern microphones to distribute evenly in the space. Thus, he applied the existing technological advances made in the application of acoustic science[12] in the design of his mosque. Such techniques were employed before him, by the Seljuks. The example of Gevher Nesibe Sultan Darussifasi in Kaysari shows that the Seljuks devised sound channels for the distribution of therapeutic music through various rooms of the hospice. Another technique was the use of empty space resonators which was also widely used in Seljuk architecture[13]. The function of such resonators is to prevent the reflection of sound energy and distribute it throughout the space. Sinan used them in Sulyemenye, Selimye and in Shehzade. In the latter, for example, some 144 resonators were found.

Selimiye Mosque (1575)

Sinan erected other high profile mosques after the Suleymeniye including mosques of Rustem Pasha (Istanbul, 1561) and Sokollu Mehmet Pasha (Istanbul, 1572). At Selimiye (1575), Sinan "built such a space

that has rarely been excelled under a dome"[14]. The mosque was commissioned by Sleim II (1566-1574) at Edirne. The dome here reached 42 meters high joined by four slender minarets of nearly 71 meters height, breaking all previous height records of minarets.

The design of the Selimiye was an extension of the Suleymenye but in the best form. Sinan himself was happier with Selimye where he commented that "…with God's (Allah) grace and the help of the sultan he managed to surpass the Hagia Sofia"[15]. Goodwin outlines the strongest features of the mosque as he declares: "The genius of this mosque lies in the reorganisation of interior space. There is the bold size of the apse recess which sets back the mihrab in a highly theatrical manner. Because of this withdrawal, it is possible to light it from three sides and this, together with the brilliant colours of the concentrated panels of tile, floods the area with it own glowing light. Thus set apart like a sanctuary, the mihrab area leaves the central space free to express a counter mystery largely lit from the circle of windows in the dome above. There is an elation in the way the dome rides on eight huge independent supports, fluted at first but plain at their summit, without capitals but with squinches or consoles instead, so that the arches appear to grow internally out of the piers"[16]. The result he further adds: "is that triumph of space which dominates the interior."[17]

The dome is carried on eight pillars organised in an octagonal scheme. Five sides of the octagon, consisting of the four corner sides facing the corners of the square shape of the prayer hall, were covered with semi- domes supported by two semi-circular arches. Meanwhile, the recess under each arch was converted into a gallery providing more depth to the space. It is worth noting that the first introduction of the deep recess under the arches was made in Orhan Gazi Cami at Belecik (first half of the fourteenth century). The remaining three sides of the octagon consist of large arches sprung from the two piers and raised to support the main dome.

Figure 12 - The perfection of Selimye Mosque, (Edirne, 1574) expressed the Unitarianism "*Tawhid*" of Islam.
Source: http://www.tuluyhanugurlu.com/English/Selimiye.jpg

Again under these arches a recess homogenous to the previous was created allowing for a number of iwans (galleries), which successfully concealed the supporting role of these great arches. The outcome of this scheme was a great impression of depth of the central space while the mighty dome "seems to float over lightweight exterior walls[18]."

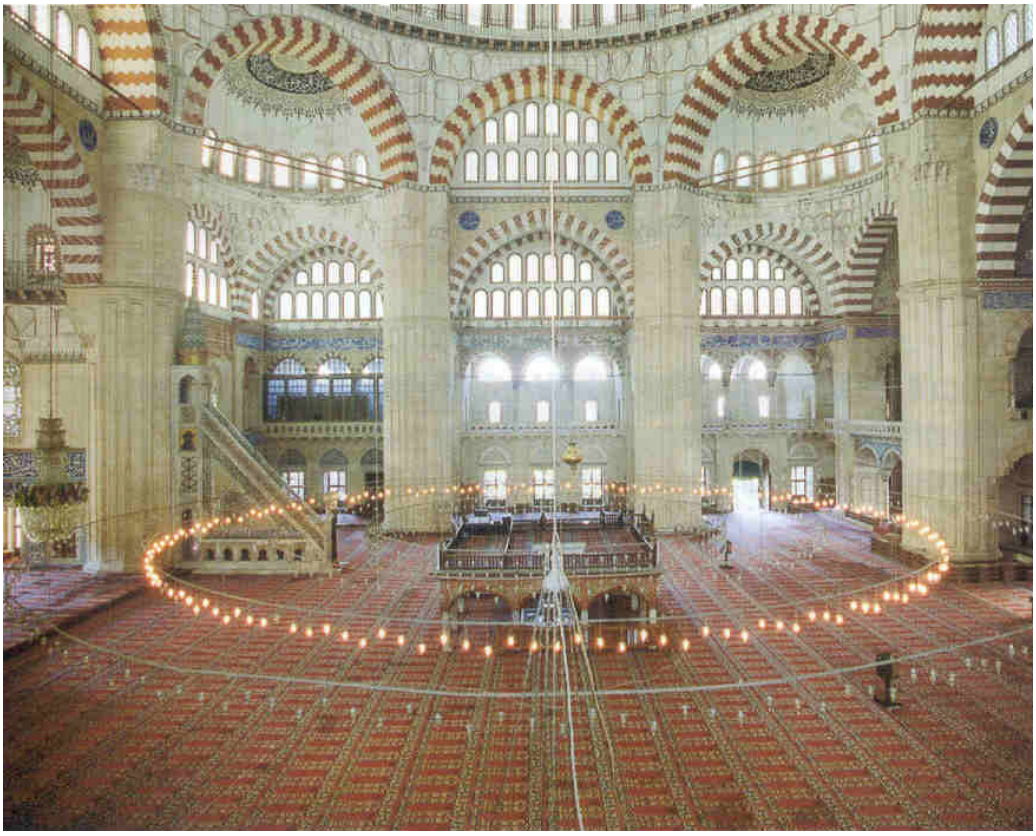

Figure 13 - Internal view of Selimye Mosque.
Source: Abdullah Kilic (2004), 'A bit of heaven on earth, Edirne', Sky life, January 2004, pp.54-66, p.60.

Sultan Ahmet Cami or Blue Mosque

Commissioned by Sultan Ahmed (1606-1617), the mosque was built by Mehmet Agha who is said to have toured key Ottoman monuments before he drew the plan of the blue mosque[19]. This can be affirmed by the character of this mosque which came to embrace a number of ideas of his predecessors (**figure 14).**

The continuation of the domed based design, pointing out to the mystical nature of the religious conviction of the Ottoman leadership as well the splendour of their Caliphate, is the first indication of the architect's deep knowledge of the mosques reviewed above. The adoption of similar spatial configurations consisting of the central space and the side galleries lit through the domes and curtain walls are all features borrowed from earlier mosques, particularly Sinan's Shehzade mosque.

The only new design concept introduced in this mosque is the introduction of ablution taps under an outer gallery which runs along the length of the court. The plan itself is quatrefoil resulting from the subdivision of the square into four sides with its centre being occupied by the central dome, and its sides made by the semi-domes supporting it.

The four majestic pillars supporting the central dome dominate the interior of the mosque despite the existence of galleries as found in Selilmiye and Sulemanye but here they failed to reduce the imposition of these pillars which are often compared to elephant feet[20].

Figure 14 - General view of Sultan Ahmed Cami Mosque ((Istanbul, 1606-17) showing the six minarets. Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.560.

This approach was deliberate as the architect and his patron, Sultan Ahmed, attributed to these piers a symbolic significance referring to the four guided caliphs and close companions of prophet Muhammed (peace be upon him); Abu Bakr, Umar, Uthman and Ali.

The dome above them symbolises the Prophet himself as the leader and radiant sun of Islamic faith. As in Sinan's mosques, the mosque was adjoined with a courtyard surrounded by galleries (Riwaks) covered with some thirty cupolas in total, but here it extends over an area the same size of that of the prayer hall. The prayer hall was adorned by four minarets, with three balconies, on the four corners. Two other minarets, of much smaller size and with only two balconies, were planted at the two end corners of the courtyard, clearly borrowing from the example of Suleymanye, progressing from a lower level to the higher one at the apex of the pyramid of the prayer hall as defined by the domes. Historic sources indicate that religious leaders of Istanbul objected to the six minarets arguing that the blue mosque should not be compared to Makkah Mosque (Al-HaramAl-Shareef) which also had six minarets[21]. To overcome these critics, sultan Ahmed added another minaret to the Al-Haram[22].

The mosque was nicknamed Blue Mosque because of the blue tiles, which cover more than three quarters of its surface. Tile panels presented over fifty different designs, all of which were made at Iznik or Kutahya at the orders of the Sultan. Historic sources reveal that some critics were raised against the huge expenses

made on the building and decoration of the mosque. Calligraphy work, for example, was executed by the famous Ametli Kasim Gubari and mostly adorned with gold. The lavishly ornamented minbar was made from carved marble decorated with artichokes designs and crowned by a golden *a'lem*. Light lamps were covered with gold and ornamented with gems incorporating ostrich eggs, lustre and crystal balls. Ostrich eggs were known to work as repellent to spiders and other insects and were used by Sinan in Suleymaniya mosque.

According to Mustapha Ali, a local medieval historian, the construction of the mosque and with such costs raised a lot of controversies in the Turkish-Ottoman population.

Figure 15 - Interior view of the Blue Mosque showing the robust pillars which symbolise the four guided caliphs and companions of the Prophet Muhammed (peace be upon him). The dome, which symbolises the beloved Prophet, appears like a radiating sun shining its light on the space.
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.561.

He explained that the usual custom was that leaders build such structures (mosques, palaces and other public buildings) to commemorate a particular victory and the costs were usually met by the booties gained from such victory. However, blue Mosque was the first example when the leader built such costly mosque without any victory but from public funds. He further criticised the building of such project in time when poorer areas and smaller towns were neglected and had hardly any well maintained mosques, hospitals or public kitchens[23].

The Ottoman Madrassa (also spelt Medrassa and Medrese)

For more than three centuries Muslims used the mosque for teaching and learning as well as other activities. By the tenth century, the teaching activity was extended to the house where the teacher lived

gradually introducing, in Persia first, the so called Madrassa[24]. During the eleventh century, under the Seljuk reign, the Madrassa emerged as a separate building, although often adjoining a mosque. The Ottomans inherited this building type with historical records showing that their first madrassa was founded in Iznik in 1331, by Syleyman Pasha. A certain Davud-I- Kayseri became its chief teacher (*müderris*) with a salary of thirty *akce (*about $60 today) a day[25]. Later, Bursa and Edirne took over as the main centres of learning respectively. With the arrival of Al-Fatih kulliye, with its sixteen madrassa[26], a new impetus was given to Ottoman education in Turkey. These schools taught scientific subjects besides theology, transforming the Ottoman madrassa into an institution closely resembling modern university. Generally, there were four types of madrassas reflecting the taught subject (s) and level (s) attained. Regular madrassas were institutions teaching general subjects including religion, science and language. They were equivalent to primary schools and their students achieve a primary level certificate, which enabled them to enter higher madrassas. They were the most spread, found in every corner of the Caliphate. *Darulkurra* (house of readers) was a high school teaching proficiency in Arabic and reading and reciting Qur'an. The school also trained imams and muezzins. Darulhadis madrassa (the house of Hadith) was specialised in teaching the science of hadith which consisted of the study of the authentic sayings of Prophet Muhammed (Peace be upon Him). Graduates from this school were awarded an equivalent to a university level, enabling them to work as Friday lecturers, judges and so on. The Medical madrassa did not appear until the sixteenth century during the reign of Suleyman the magnificent[27]. Prior to that medical teaching was carried in hospitals as was the tradition.

The madrassa was, usually, founded and maintained by the sultan, princes and other nobles as well as the *Wakf,* who could afford to meet the expenses needed for free education to students. The Madrassa continued to be one of the main venues of education in the Muslim World under the Ottoman Caliphate until 1924 when Ataturks' law of 16 March 1924 abolished it in favour of modern schools and universities.

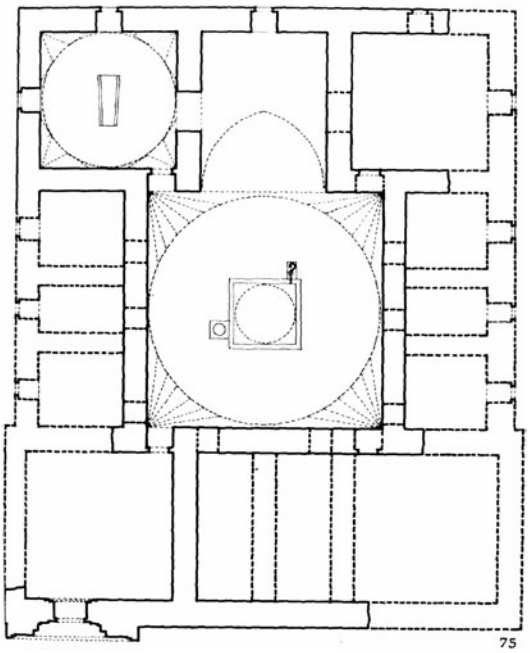

Figure 16 - Karatay Madrassa Plan.
Source: Kuran, A. (1968), '*the Mosque in Early Ottoman Architecture'*, University of Chicago Press, p. 77.

In planning terms early Ottoman madrassa maintained the spatial configuration developed under the Seljuks in Anatulia, which was based on the iwan plan. Such plan consisted of a courtyard towards which the iwans were opened. This was the norm in Anatulia and in most of the Muslim East, especially Persia. By the thirteenth century, a shift towards the enclosed iwan plan emerged first in Karatay Madrassa (Konya, 1251-52) where a central dome pierced with a number of windows replaced the old open courtyard.

The iwans, which were used as classrooms, were opened into the central space created by the huge dome. Such features influenced without a doubt the development of the architecture of Ottoman mosques, especially in early years when the spread of enclosed mosques covered with one huge central dome as seen above. The Ottomans, at first continued to employ the enclosed iwan plan. The Haci Hali Pasha Madrassa (Gumus, 1415) the Seljuk four iwan mosque arranged around a square court covered with a large dome. Later, however, they returned to the open courtyard iwan scheme, probably because of the nature of its function as a centre of learning frequented by so many students who needed a secure open space for recreation. This is seen in Cacabey at Kirsehir, built in 1272, which closely resembled Karatay with cells (iwans) arranged around a domed central space with an ablution fountain. However, here the central space was opened to the sky. This progressively led to the adoption of simpler plan version, mostly rectangular or square[28], consisting mainly of cells of classrooms opened into a central courtyard. Suleyman Pasha Madrassa (Iznik, 1330) is considered as the embryo of the three sided plan (U plan) which consisted of four cells arranged along three sides of the open courtyard only, while the fourth side was left empty.

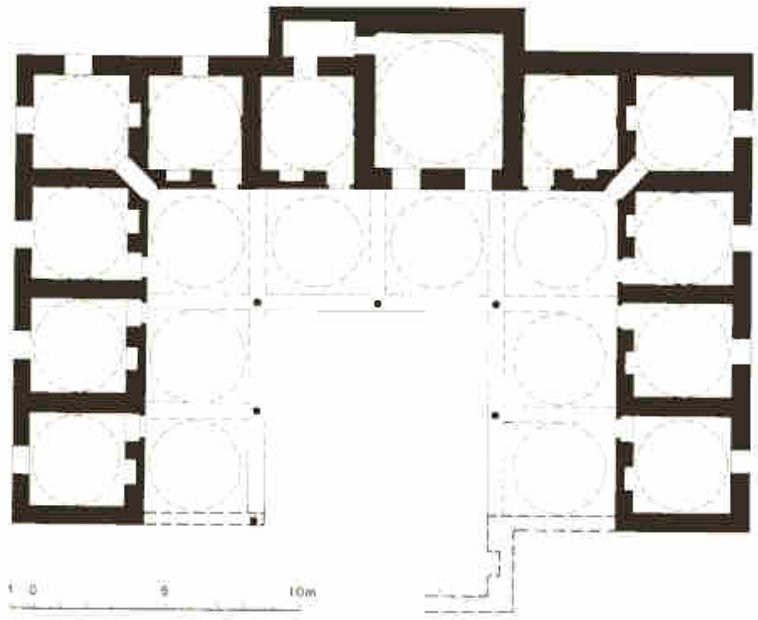

Figure 17 - Plan of Sultan Suleyman Pasha Madrassa.
Source: Goodwin Godfrey (1971), '*A History of Ottoman Architecture*', Thames and Hudson., p. 39.

Another feature appeared in this madrassa was a domed room, distinguished from the other cells by its

large size and projection behind the building, known as *dershane* which was used as the main classroom.

This three sided plan was later refined and developed in subsequent Madrassas, especially since the fifteenth century. The *dershane* occupied the fourth wing while the other three accommodated students cells. Since then, most of the Ottoman madrassas adopted the single classroom U plan scheme[29]. Madrassas of this typical plan include madrassa of Mehmed Afendi, Istanbul and Bayzit II, madrassa in Edirne. In these madrassas the cells, and arcades, were covered with domes and furnished with windows and a chimney for use in winter. A number of common toilets and bathrooms as well as central fountain provided adequate personal facilities for students. The exterior of the madrassa is usually blind and simple, but interior walls are beautifully decorated with tiles, bricks, and stalactite (muqarnas).

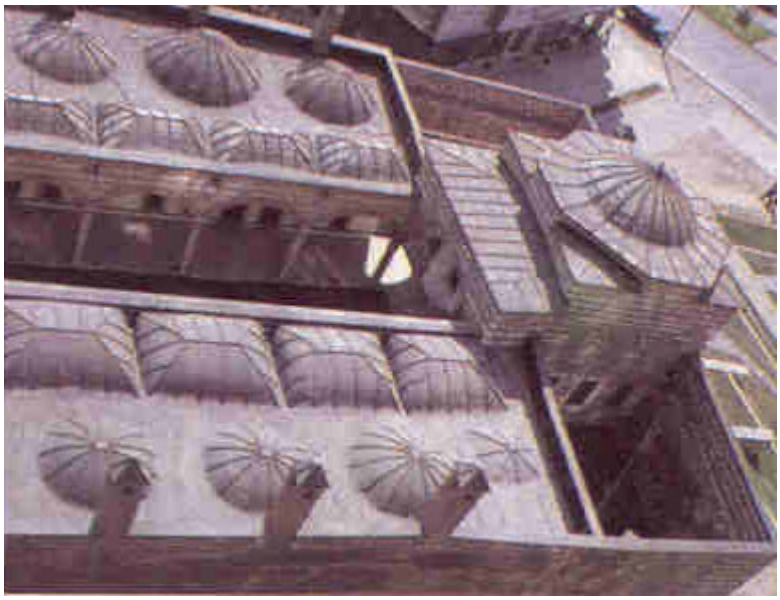

Figure 18 - General view of Mehmet Afendi Madrassa.
Source. Ahubay Zeynep (2000), '*Ottoman Medreses'*, Halil Inalcik et.al. (eds.), The Great Ottoman, turkish Civilisation, Semih Ofset, Yeni, Turkiye, p.341.

Imaret

Looking after the poor and the destitute has always been sought by the rich and able Muslims, longing for the great reward promised by God (Allah). The Quran, for example, explains the nature of this reward in numerous verses promising those who:

> *And they feed, for the love of Allah, the indigent, the orphan, and the captive, (Saying),"We feed you for the sake of Allah alone: no reward do we desire from you, nor thanks. "We only fear a Day of distressful Wrath from the side of our Lord." But Allah will deliver them from the evil of that Day, and will shed over them a Light of Beauty and (blissful) Joy." (76: 8-11).*

There are numerous stories of how Muslim Caliphs and princes transported food on their back and distributed it for the hungry and needy people. Tales from second Caliph Umar, for example, are well known. Such an act still forms an integral part of the social benevolence in many Muslim countries. It is

not known when the first Muslim charitable institution to cater for this aspect was established. However, it is confirmed that in the eleventh century the Seljuks founded a number of buildings on key trade routes (carvanserai) to provide free meals and accommodation for travellers (*ibn Sabeel*), which is another charitable action promoted by Islam[30]. In urban areas, the Zawiya, a theological school, had extensive charitable work including feeding and distributing food on the poor from purpose built kitchens. Another service comes under the *Sabeel* is the fountains which were built for the provision of free drinking water in urban and rural areas. However, this subject and its contribution to architecture is not the focus of this paper and will be investigated in future work.

The Ottomans, especially in prosperous times, expanded this charitable activity by introducing the kulleye system which developed the public kitchen (imaret) further. Sometime in the fourteenth century, under the reign of Orhan Gazi (1326-1359) the first imaret was built in his capital Iznik. The kitchen prepared food not only for the staff and students of his medrassa (and kulliye) but also to the poor at large. Historic accounts reveal that Sultan Orhan in person distributed soup to the needy[31]. The imaret usually consists of a kitchen, a dining hall, a pantry, a barn, a stable, a toilet, a wood-shed and a number of guest rooms[32]. In its simplest forms, the public kitchen (*imaret)* provided at least one flat bread (*fodla*), soup and meat once a day and rice (*pilav*) twice a week[33]. In the case of the imaret of Fatih kulleye, for example, is thought to consist of two simple kitchen rooms without a dining room, which suggests that the tradition was that cooked food is taken away to places where its consumers were. Historic records show that in the fourteenth century there were fourteen imarets in the city of Iznik. In fifteenth century Bursa, there were twenty four imarets in addition to those included in the royal kulleyes[34]. Such figures illustrate the scale of social compassion provided by early Ottoman leaders for their subjects.

The Ottoman Han (Caravanserai) and Bazzars

The expansion of commerce in the Ottoman world necessitated the introduction of new types of buildings to accommodate various trade types. As with other building types, the Ottomans also inherited the han or caravanserai keeping much of its functional and formal properties. The general plan consisted of a number of cells and units arranged around a courtyard, providing all the amenities the traveller needed. It contained a mosque, shops, stables, barn, and sleeping rooms. According to Sanderson[35], Fatih complex had a rectangular plan caravanserai of one hundred cells destined for travellers. Another example of these caravanserais includes the caravanserai of Coban Mustapha Pasha complex (1524) which consisted of a domed entrance, halls, sheds, barns and stables. From this, one can conclude that the function and location of such a small building complex resemble very closely modern service stations along the motorways, but providing free service. In this concern, it is worth noting the need for further study to investigate whether there is any connection between the caravanserai and modern motorway service stations.

At a later stage, the above charitable function ceased to exist as the caravanserais were incorporated into the urban environment where they were converted into commercial depots often used as wholesale centres selling particular goods. The Ipek Hani built by Mehmed I, for example, was a centre for silk merchants. The Pirinc Hani (1507), the Fidan Hani, and the Koza Hani (1489), all in Bursa, were mainly markets for grain such as rice and others[36]. Other *hans* were used as storage centres for merchandise, while others kept animals[37].

The second major commercial building is the so called *bazaar* or *bedesten.* It is a corrupt word coming form bezitan which means a cloth market, a market selling textiles. The *bedesten* evolved around the traditional suq neighbouring the main mosque. It is a covered hall raised on pillars and surmounted by domes. It has usually a longitudinal plan of between two and three bays wide and up to eight bays long pierced with at least two easily accessible gates.

The *bedesten* provided a safe and protected place for merchants, according to Kuran[38], as primitive type of Banks where the tradesmen left their goods for the safekeeping. The *bedestens* were usually locked at night and usually have caretakers (security men). This market hall is where goods are sold, usually aligned in large wooden crates with lids that could be opened during business hours and closed at the end of the day. These run along both side walls allowing the pedestrian movement in the middle. Goods such as silk, jewellery, spices and other valuable products are sold there. Sometimes shops were opened at the external walls of the bedesten providing more commercial space as seen in Buyuk bedesten, built in Istanbul by Al-Fatih in 1470, which had 44 shopping cells inside and 64 outside. The example of Istanbul Kapali Carsi, which consists of two market halls going back to Mehmed II and Suleyman the magnificent, shows that the *bedesten* can cover an area of up to 30 hectars incorporating numerous shopping alleys and khans.

Figure 19 - Der überdeckte Bazaar, Istanbul
Source: **www.istanbul.de/galerie/_privat/urbanzyk/**

Ottoman Palace Architecture, the Topkapi Palace

Six years after he conquered Constantinople, Sultan Mehmed II (Al-Fatih) decided on the construction of a palace to accommodate the Ottoman administration and royal household. The construction work began in 1459 and lasted most of his reign. The palace was made into a complex consisting of a number of buildings, courtyards and gardens.

Gardens of geometrical designs of flower and vegetable beds combined with fountains and pools reflect the Muslim traditional love of nature and symbolic derivation connected with aspiration for gardens of paradise. Although the Ottomans did not match the extensive gardening of Andalusian Spain, especially under the Nasrid dynasties, the Topkapi palace shows a considerable talent and royal interest in it. Terrace gardens arranged in rows of cypresses stretch in many parts of the palace complex, especially along the sea shore.
The palace was subject to many expansions, additions and modifications carried out by successive Ottoman rulers. As it stands today, the complex is organised in four courtyards consists mainly of three groups of buildings.

The first courtyard lays in front of the palace and has no architectural interest. The second courtyard is an intermediary area separating between the throne, the Royal quarter and the outside world. It accommodates mainly the army barracks, halls, stables and kitchens. The latter consist of ten domed units, each one having a chimney and a ventilator over the cooking area. In the northern corner of this courtyard there are domed offices of the divan. This is an administrative quarter served as the judiciary council of the sultan and it is here where the viziers held their meeting and discussions.

Proceeding from this courtyard through the Gate of Felicity one finds the third courtyard. This area is the most architecturally rich as it accommodates the royal administration and residence. At the centre there is the throne room "The Hunkar Sofasi" built by Selim I, and behind it there is Sultan Ahmet III library. The throne room was built in the 17th century as an audience hall filled with splendour and luxurious ornamentation, furniture and decor. The hall is a large rectangular salon covered with tiles and decorations most of which have been redesigned with Rococo décor. It is here that the throne sofa was laid and where the Sultan received embassies and foreign messengers.

Figure 20 - The throne room (17th century) showing the throne sofa and much of the Rococo decoration which was applied in the 18th century.
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.564.

The northern wing of the courtyard is occupied by the palace school and its mosque as well as quarters of students. Towards the northern corner of the courtyard there are four domed rooms, three of which accommodate the relics of the Prophet Muhammed (puh) and his companions. It is reported that Sultan Selim I brought these objects from the east after his victory against the Mamluks in Egypt in 1517 and took control of Makkah and Medina, they became custodians of these relics. Selim was a zealous leader who felt strong attachment to these items and decided to safeguard them at the palace. One room, known as

"*Hırka-i Saadet Dairesi*", accommodates relics including some hair of Prophet Mohammed (puh), his footprint and the copy of the Holy Quran that Caliph Uthman had. There is also the cover of the black stone "*Hacer-ul Esved"* which is an original cornerstone of the Kaabah at Makkah. In a second room, left to the first, there is holy mantle of Prophet and his swords.

Beyond the palace school towards the north lays the Harem quarter. This is the residence and venue of the Sultan household. The word "*Hareem*" mostly used in the west by orientalists to discredit Muslims of violent womanising. The real word comes from "*Hurma*" a singular form of hareem, meaning that the person in question (woman) holds the honour of her partner and relatives whether a husband, a father, a brother or any close relative. This title forbids her to have any relationship except through legal marriage. In this paper, the Hareem is applied to the household quarter of the palace.

The palace household quarter comprises a number of courtyards, gardens, baths and rooms. The first courtyard of the hareem quarter is the *Valide* Court "Courtyard of Queen Mother" The *Valide*[39] is the mother of the sultan reigned over the Harem and her son. The courtyard is beautifully decorated with tiles, which Goodwin though were brought from 17th century Vienna or Italy[40].

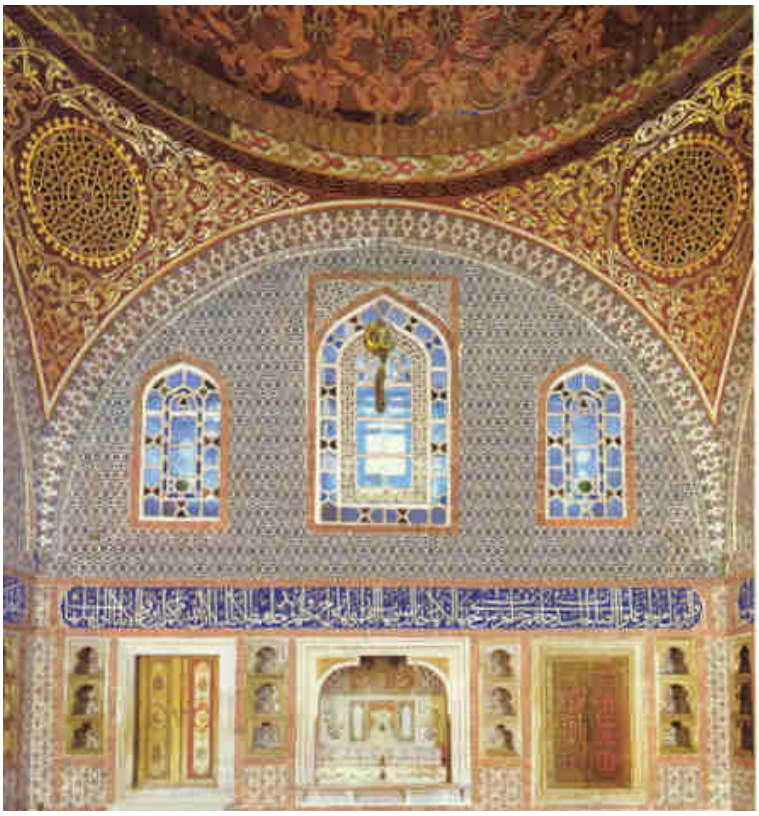

Figure 21 - The salon of Sultan Murad III (late 16th century) showing the successful application of various decoration themes, calligraphy, arches, tiles, niches, windows, pendentives and dome in one surface.
Source: M.Hattstein & P.Delius (Eds. 2000), '*Islam Art and Architecture*', Konemann.p.564.

Around this courtyard a number of apartments were arranged, mostly built after the second fire (1667), baths and an 18th century music room. Further north behind the Valide compound there are the extensions made by successive sultans, Murad III, Selim III and Osman III.

The most notable of these buildings is the saloon of Murad III, the Has Oda (also known as Privy Chamber). Built in late 16th century (1574-95), probably by Sinan at the edge of the Valide compound, the saloon has a square shape covered with a pendentive dome decorated with beautiful arabesque and Arabic calligraphy in which the sura Al-Ikhlas (112) of the Quran is inscribed in a medallion at the centre of the dome[41]. At the base of the dome another Quranic verse from the sura of the throne[42]. The walls were adorned with tiles with arabesque and geometrical designs and calligraphic bands.

From the Valide compound a wide corridor, known as the "Golden Road", which leads to another hareem court known as "Courtyard of the Black or the courtyard of Eunuchs", beautifully decorated with blue, white and green ceramic tiles. These Eunuchs were black servants whose role was to protect the hareem compound stopping intruders. The court contains the apartments, mosque and baths destined for the use of the Eunuchs.

The fourth and last courtyard mostly is dominated by the Tulip Garden, which once were adored by the Sultan. It served as a royal park used for relaxation and entertainment. Hence, the buildings of this section of the palace had leisure functions, mostly in the form of kiosks and terraces. The so called "*Sunnet Odasi*", "*the Circumcision Chamber*" is a pavilion built in the midst of the tulip garden and renovated by Sultan Ibrahim (1640-1648). The pavilion consisted of a large hypostyle hall renowned for its magnificent tiles, dating back to 16th C, mostly from the great legacy of the Iznik blue and white tiles. The pavilion is a party centre where the royal children were circumcised according to the Islamic tradition which obliges all male children to undertake this custom. The circumcision procedure was carried out in a partying fashion with feasts of food, music and joy, a tradition which is still carried out in a large number of Muslim countries.

Conclusion

The Ottomans brought a new and fresh breath to Muslim architecture, a new expression appearing in the form and majesty of their domed mosques, in the splendour of their palaces and garden kiosks, as well as in their public kitchens (imaret) and charitable complexes of kulliye. Under the Ottomans, architecture not only continued to utter the cultural belonging and religious beliefs but also served various social classes.
The Ottoman contribution, thus, gave the kiss of life to a dying Muslim architecture. Under their influence the dome construction entered a new phase, of refinement and beauty becoming the sole roofing element of Ottoman buildings around which the design of the whole space evolved. The organisation of the internal space of the mosque received highest priority giving it more functional and majestic significance. Meanwhile, the Ottoman verticality added a new dimension to the symbolism of the mosque attaching it to the sky and the divine which was later reproduced in many Anatolian buildings.

Notes

[1] The succession of the Ottomans to the Caliphate in the 14th century was at the hands of their founder Othman (d.1326) and reached its apogee in the 16th century.
[2] This date was recovered from a marble inscription slab, see Kuran, A. (1968), 'the Mosque in Early Ottoman Architecture', The University of Chicago Press, p.17)

[3] Goodwin Godfrey (1971), 'A History of Ottoman Architecture', Thames and Hudson, p.122.
[4] Eldem, H.E. (1934), 'Nos Mosquées de Stamboul', translation E. Mamboury, Istanbul., and also Hammer Purgstall, J. von, (1835-1843), 'Histoire de l'Empire Ottomane 18 volumes, Paris, all cited in Goodwin Godfrey (1971), 'A History of Ottoman Architecture', Thames and Hudson.
[5] Davies (1982, p.127):
[6] The story relates such provisions to political decisions as historical accounts relate that Sultan Bayzid I promised to build twenty mosques if he was victorious at Nigbolu against the Christians but was advised later to build a mosque with twenty domes instead. (I am indebted to Dr. Salim Ayduz for this information)
[7] See Von Gladib Almut, (2000), 'Ottoman Architecture', M. Hattstein & P. Delius (Eds.), Islam Art and Architecture, Konemann, pp544-565.
[8] See the Ceramics Article.
[9] Von Gladib Almut, (2000), op. cit., p.545.
[10] The site is the so called Kulliye complex consisting of in addition to the mosque, a madrassa, a bath and a public kitchen.
[11] Also part of a complex consisting of madrassa, bath and a public kitchen.
[12] It is the science of hearing or noise control.
[13] Kayili Mutbul, (2000), 'Acoustic solutions in classic Ottoman Architecture', Halil Inalcik et.al. (eds.), The Great Ottoman, Turkish Civilisation, Semih Ofset, Yeni, Turkiye, pp.486-493, p.487.
[14] Goodwin Godfrey (1971), 'A History of Ottoman Architecture', Thames and Hudson, p.261.
[15] Reported by his friend Mustafa Sai
[16] Goodwin Godfrey (1971), op., cit. p.261.
[17] Ibid.
[18] See Von Gladib Almut, (2000), 'Ottoman Architecture', M. Hattstein & P. Delius (Eds.), Islam Art and Architecture, Konemann, p.559
[19] Goodwin Godfrey (1971), op., cit. p.346.
[20] Ibid.
[21] Ibn Batuta reported that the Great Mosque of Basrah had seven minarets, see Ibn Battuta (ed.1958), The travels of Ibn Battuuta, Ad,1325-54', translated and edited by Gibb, H.A.R., Cambridge Vol.II, p.277.
[22] I am indebted for my colleague Dr. Ayduz Salim for this information.
[23] see Von Gladib Almut, (2000), op. cit., p.560.
[24] Van Berchem, also see Muslimheritage article: **Main - Seljuk Architecture1.pdf**
[25] Kuran, A. (1968), 'the Mosque in Early Ottoman Architecture', The University of Chicago Press, p.21)
[26] There is a slight confusion about the number of schools Al-Fatih built with his kulleye. Kuran, A. (1968), op., cit., p.21 refers to sixteen, but Ahubay Zeynep (2000), 'Ottoman Medreses', Halil Inalcik et.al. (eds.), The Great Ottoman, Turkish Civilisation, Semih Ofset, Yeni, Turkiye, p.340, mentioned only six.
[27] Ahubay Zeynep (2000), op., cit., p.338.
[28] The Kapiagasi Madrassa at Amasya had an octagonal plan. Later Sinan re-used this plan in the Madrassa of Rustum Pasha in Istanbul.
[29] There are instances where more than one class room was used as in Mehmet Celebi Madrassa at Merzifon (1414-18) which had two classrooms, and Yildirim Madrassa in Bursa had three rooms. For more see Ahubay Zeynep (2000), op., cit., p.343.
[30] See **Main - Seljuk Architecture1.pdf**
[31] Kuran, A. (1968), op.cit., p.22.
[32] Ulucam Abdusselam, (2000),'Ottoman Architecture in the classical Preriod', Halil Inalcik et.al. (eds.), The Great Ottoman, Turkish Civilisation, Semih Ofset, Yeni, Turkiye, pp-423-485, p.443.
[33] Kuran, A. (1968), op.cit., p.17.
[34] Kuran, A. (1968), op.cit., p.22
[35] Sanderson, J.(1931, 'The travels of John Sanderson in the Levant, 1584-1602', ed. Foster, London, p.70.
[36] Kuran, A. (1968), op.cit., p.23
[37] Eyice, S. (1955), 'Istanbul: Petit Guide a travers les Monuments Byzantins et Turcs', Istanbul, p.127.
[38] Kuran, A. (1968),op.cit., p.23.
[39] Valide: comes from the Arabic word (Walidah) meaning mother.
[40] Goodwin Godfrey (1971), op.cit., p.324.
[41] Surah 112: Say: He is Allah, the One and Only; Allah, the Eternal, Absolute; He begetteth not, nor is He begotten; And there is none like unto Him.
[42] *Allah. There is no god but He,-the Living, the Self-subsisting, Eternal. No slumber can seize Him nor sleep. His are all things in the heavens and on earth. Who is there can intercede in His presence except as He permitteth? He knoweth what (appeareth to His creatures as) before or after or behind them. Nor shall they compass aught of His knowledge except as*

He willeth. His Throne doth extend over the heavens and the earth, and He feeleth no fatigue in guarding and preserving them for He is the Most High, the Supreme (in glory).

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