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Sinan: A Great Ottoman Architect and Urban Designer

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SINAN: A GREAT OTTOMAN ARCHITECT AND URBAN DESIGNER

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Background

Mimār Koca Sinān, the "Great Architect Sinān", was born in Anatolia, Turkey in 1489; he died in Istanbul in 1588. Generally considered the greatest of all Ottoman architects, Sinān's career spanned about fifty years since he was appointed chief royal architect to the Ottoman court by Sultan Suleyman I in 1539. His great mosques are the archetypal image of Turkish Ottoman architecture.

During his long career Sinān built hundreds of buildings including mosques, palaces, harems, chapels, tombs, schools, almshouses, madrassahs, caravan serais, granaries, fountains, aqueducts and hospitals. Of this diverse group of works, his mosques have been most influential. In his mosques' design, Sinān exerted his inventive experimentation with centralized domed spaces, often compared with parallel developments in Renaissance Italy, produced monuments in which the central dome appeared weightless and the interior surfaces bathed in light. He often designed his mosques as part of a complex comprising schools, baths, guesthouses and hospitals.

The life story of Sinān is somewhat complex and full of uncertainties. The successful career of this great architect and his genius have prompted great interest among historians of architecture and of Islamic civilisation in the Ottoman period. Some of these scholars constructed his life story linking it very much to his Christian origin. As narrated in these sources, the story consists of the following.

Sinān was the son of Greek Orthodox Christian parents. His father was a stonemason and a carpenter from Greece, or Serbia, or may be Austria.¹ His mother, according to Egli², was imprisoned and then enslaved by Ibrahim Pasha. Sinān learnt his father's trade at his youth but he was snatched from his family and taken to work for the Caliph court. With the skills learnt at an early age, he quickly developed his career of architect from his military service at the Janissary Corps. Such a tale is repeated in several recent historical sources.³ On one of these fabricated tales of Sinān's origin, put forward by Egli, Goodwin wrote:

"Egli, who has peered diligently into the stews of myth, and rendered a service by so doing, permits himself to fabricate a new account of Sinān's mother in captivity, the prisoner and slave of Candarli Ibrahim Pasha. This enables him to suggest that Sinān might have been of Greek, Serbian, Albanian or even Austrian, origin".⁴

¹ See E. Egli (1954), Sinan, der Baumeister osmanischer Glanzzeit, Zurich.

² Ibid.

³ See for example Encyclopaedia of Islam (1997), Brill: Leiden, vol. 6, pp. 629-630 and "Sinan", Encyclopædia Britannica (2007).

⁴ G. Goodwin (1987), A History of Ottoman Architecture, London, p. 197.



Figure 1. Sinān on an old Turkish banknote. Source: <http://en.wikipedia.org/wiki/Image:Sinan.jpg>.

To bring a balanced approach to the real life of this astonishing personality, one has to dig into Turkish sources which consist mainly of his personal biography written by his friend of youth Sai Mustafa Celebi, *Tezkiret ül Bünyan* as well as *Tezkiret ül Ebniye*. The third text *Tuhfet ül Mimarın* was compiled in 1590 and all of them were published by Kuran⁵. However much of what is contained in these sources were inventories of Sinān's construction projects and therefore many aspects of his real life are still somewhat mysterious. A recent paper published by Dogan Kuban⁶ in the encyclopaedic work of a team of Turkish academics, sheds some light on this incredible personality.

Sometimes in 15th century Ottoman Caliphate, a Greek Christian embraced Islam and became known as 'Abd al-Mannān⁷, the servant of the Bestower. According to *Tezkiret ül Bünyan*⁸, 'Abd al-Mannān chose this name in praise of God who made him a Muslim. He was a stonemason and a carpenter⁹ living at Kaysari, central Anatolia. On April 15, 1489 'Abd al-Mannān was granted a baby son whom he called Sinān.

⁵ A. Kuran (1987), *Sinan: The Grand Old Master of Ottoman Architecture*, Washington, D.C./Istanbul.

⁶ D. Kuban (2000), "Sinan", Cicek Kemal, (ed.), *The Great Ottoman Turkish Civilisation*, Ankara, pp-450-463.

⁷ *Encyclopaedia of Islam* (1934), Leiden: Brill, vol. 7, pp.428-432.

⁸ Reported by Godwin (1987), *op.cit.*, p. 199.

⁹ "Sinan" in *Encyclopaedia Britannica* (2007).

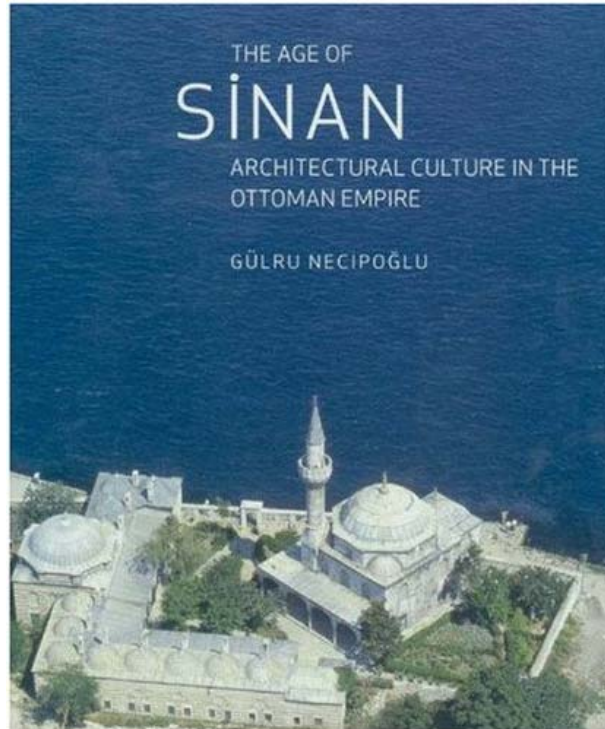


Figure 2. Gülru Necipoglu, *The Age of Sinan: Architectural Culture in the Ottoman Empire* (Princeton University Press, 2005). An historical and sociological *tour de force*, an authority in the study of Sinān and of Islamic art and architecture.

From an early age, Sinān followed his father footsteps and learnt the skills of his trade. When he reached twenty-one years of age, he was recruited by the *Devshirme* into the Janissary Corps within the reign of Sultan Selim I (1512-20). The *Devshirme* system relied on recruiting young people between the age of 12 and 22 to be trained to become the elite guard and civil servants of the Ottoman Caliphate. As part of the procedure of this tradition, these youths were carefully considered according to their capabilities. The best of them were selected to work in the Sultan's Palace in Istanbul or Edirne where they were given special training in various aspects of the Ottoman administration to become future military or political elite. Those who showed ability in the religious sciences were directed towards religious professions while those proficient in arts were prepared for a career in arts and literary professions.

When he was a conscript (*acemiođlan*), Sinān mentioned that he was willing to learn carpentry.¹⁰ Kuban suggested that Sinān built ships, wooden bridges and probably all sorts of temporary wooden constructions. These skills were further developed during his military service as he participated in a number of Ottoman campaigns including Belgrade (1521), Vienna (1529) and as far as Baghdad (1535).¹¹ He distinguished himself, particularly, in the campaigns of Belgrade and Rhodes (1522), showing bravery and steadfastness that he was promoted to "*zenberekdji bashi*", a chief firework operator.¹²

¹⁰ Kuban, D. (2000), op., cit., p.451.

¹¹ Encyclopaedia of Islam (1997), Brill, Leiden, vol. 6, p.629.

¹² Encyclopaedia of Islam (1934), op., cit., p. 428.

In 1534, Sinān participated in the Persian war and showed great effective skills in the battle of Lake Van when he devised ferries for the crossing of the army through the lake. In another campaign, at Wallachia (now Romania), Sinān built a bridge across the Danube for the crossing of the army. This brought him fame and admiration, promoting him to the chief of military constructions and expanding his carpentry skills to masonry. He gained great experience from this having the opportunity to build or repair bridges, defences and castles. Since then, his talent attracted the Ottoman Sultans who took him as their chief architect for the construction of mosques, schools and other civic buildings.

To sum up what we know about Sinān's origins, all the information gathered so far reveals that he had Christian relatives in the villages of the Kayseriye Sanjak that belonged to the Karaman province. It can be argued that the most frequently mentioned village Agirnas, could be the village of Sinān, where he built later a fountain. The exact date of Sinān's birth, who had been recruited from among the Christian villagers of Central Anatolia before 1520, is not known. Therefore, the common belief that he lived for more than a hundred years is not justified.¹³

The Legacy of Sinān

The training Sinān had in the Janissary Corps and the contact he made with a wide range of architectural experiences broadened his vision and developed his skills. His travels with the army through a vast geographical region extending along the Mediterranean Basin from Anatolia to Italy and the Adriatic coast to Central Europe, and from Azerbaijan to Baghdad in Asia enriched his architectural knowledge and provided him with a wealth of ideas, resources and solutions. The synthesis of this knowledge was reflected in his famous constructions as seen in his chief work the Suleymaniyye Mosque (1550-1557).

Sinān was first employed by Hurrem, the wife of Sultan Suleyman I, also known as Suleyman the Magnificent (reigned 1520-66), to construct a *Kulliye* (1539) and a public bath (1553). The *Kulliye* was a building complex consisting of a mosque, a hospital, a school (*madrassa*), and a public kitchen (*'imarat*). Later, Mihrimah, Suleyman's daughter, commissioned him to build mosques with attached structures in the Uskudar (1548) and Edirnekapi (ca 1550) districts of Istanbul. Sinān's first commission by Suleyman I himself, was the construction of Sehzade Cami (1548) which was built in the memory of his first son (from Hurrem), Sehzade (Prince) Mehmed who died as a young man.¹⁴

¹³ See Dogan Kuban, "Sinan", in *The Great Ottoman-Turkish Civilization*, vol. IV, ed. K. Cicek et al., Ankara: Yeni Turkiye, 2000, pp. 450-463; Esin Atil, "Art and Architecture", in *History of the Ottoman State, Society and Civilization*, ed. E. Ihsanoglu, Istanbul: IRCICA, 2002, pp. 607-644; Gülru Necipoglu, *The Age of Sinan: Architectural Culture in the Ottoman Empire*. London: Reaktion Books, 2005.

¹⁴ E. Atil, "Art and architecture", in E. Ihsanoglu (ed.), *History of the Ottoman State, Society and Civilisation*, Istanbul: IRCICA, 2002, vol. 2, chap. 10, pp. 607-642; p. 615.



Figure 3. Sinān depicted preparing the grave of Suleyman the Magnificent. Source: Cicek Kemal *et al.*, *The Great Ottoman Turkish Civilisation* (Ankara, 2000, p. 450).

Sinān's biographer Sai Mustafa Celebi, who was his friend, counted some 343 buildings as shown in the table below. However, the three sources mentioned above (*Tezkiret ül Bünyan*, *Tezkiret ül Ebniye*, *Tuhfet ül Mimarın*) together listed a staggering total of 477 buildings¹⁵. During this long career, Sinān served three Sultans: Suleyman I, Selim II and Murat III. In geographical terms his work stretched over most of the regions of the Ottoman Caliphate including, for example, the Mosque of Khorsaw Pasha in Aleppo, the Mosque of Sultan Suleyman in Damascus, the dome of the sanctuary of Al-Haram Al-Shareef in al-Quds and the school of Sultan Suleyman in Makkah, Mosque of Mehmed Pasha in Sofia and in Herzegovina, Mosque of Mustapha Pasha in Ofen (Budapest), and the Palace of Mehmed Pasha in Sarajevo.

¹⁵ Encyclopaedia of Islam (1997), op., cit., p. 629.

Buildings	Total
Mosques (<i>jami'</i>)	81
Schools (<i>madrassa</i>)	55
Small Mosques (<i>masjid</i>)	50
Palaces	34
Baths (<i>hammams</i>)	33
Mausoleums	19
Public kitchens (<i>'imarat</i>)	16
Rest houses (caravansaries)	13
Bridges	08
Quranic schools	07
Aqueducts	07
Hospitals	03
Store houses (<i>makhzan</i>)	03

Figure 4. The legacy of Sinān. Source: *Encyclopaedia of Islam* (1934), op., cit., p. 428.

In addition to his works, Sinān was also a school that produced a fascinating generation of architects whom he taught. Among his pupils one refers to Ahmed Agha, Kamal Al-Din, Da'ud Agha, Yatim Baba 'Ali, Yusuf and the younger Sinān, who were to carry his architectural legacy and experiments into a future age as seen in post-classical masterpieces. His favourite pupil, Yusuf, is known to have become the architect of the Sultan Akbar (1542-1605), the Great Mughal ruler of India, building most of the splendour of Lahore, Delhi and Agra.

Sinān's Architectural Contribution

The evaluation of Sinān's architectural merit cannot be, obviously, given justice in this short review. The reader is advised to consult the bibliography below and in particular the valuable publication of the *Journal of the Islamic Environmental Design Research Centre* and the authoritative book published by Gülru Necipoglu, *The Age of Sinan: Architectural Culture in the Ottoman Empire* (fig. 2). In this brief, an attempt has been made to synthesise the major and key components of Sinān's architecture which had a lasting impact on the Ottoman and later Turkish architecture.

Sinān has been compared to Michelangelo of the European Renaissance that was nicknamed Michelangelo of the Ottomans. His works in Suleymaniya Mosque (1550-56) for Suleyman I at Istanbul and Selimye Mosque (1551-74) for Selim II at Edirne (fig. 5) are the finest and often compared to Renaissance works of Florence, especially those of Alberti¹⁶ (1404- 1472). —Kostof extended this comparison to Renaissance Venice.¹⁷

¹⁶ His major works include St. Andrea (1470-1476), and San Sebastiano (1459), both at Mantua, and S. Maria Novella (1456-1470), at Florence, Italy.

¹⁷ Spiro Kostof (1995), *A History of Architecture*, Oxford University Press.

There is a debate whether there has been some influence exchanged between the Italian Renaissance architects and Sinān. We could see many of Sinān's features in a number of Italian churches. The above two cities, in particular, had stronger relations with the Muslims of North Africa and the East more than any other European city. Works such as those of Cola da Caprarola (1508-1604) in Santa Maria della Consolazione at Todi (16th century) and Andrea Palladio in Church of Il Redentore (Italy, 1577-92) greatly contributed to the evolution of large domed churches in Italy and Europe. Sinān's vision could be seen in the centrality of the dome and space proportions. In the latter building one finds even Sinān's slender cylindrical minarets being added to balance the structure. Such an issue needs further investigation beyond this brief account. It is worth emphasising, however, that while no Italian architect built more than a few domed structures, Sinān is credited with over four hundred as noted previously.



Figure 5. Selimiye Mosque or Mosque of Selim II at Edirne (Turkey) was considered by Sinān to be his masterpiece. Source: <http://www.islamicarchitecture.org/architecture/selimiyemosque.html>.

Sinān carried the dome into new dimension in terms of size, height and perfection, although Turkey experienced domed architecture long time before Sinān, dating back to the 5th century CE when Hagia Sofia was built. With the arrival of Islam and after the fall of the Seljuk dynasty (Seljuk of Rum) the influence of Hagia Sofia started to take shape in a number of 15th century mosques, ie. the Great Mosque of Bursa (1399), the Üç Serefeli Mosque (1437-47) at Edirne and the Fatih Mosque (1462-1470) in Istanbul, where the central dome gradually took over the courtyard of the traditional mosque (see our forthcoming article on Ottoman architecture).

At Üç Serefeli Mosque, for example, one can clearly see the transitional phase of this new architecture taking shape in the central dome, which was flanked by four smaller domes arranged in pairs at both ends of a long interior. Sinān employed the structural and functional properties of the dome to their limits contributing greatly to the metamorphosis of the Ottoman mosque while observing much of the Islamic principles. The creation of a more vertical and centralised space of the single domed Mosque revolutionised the form and character of the hypostyle mosque, a feature which was to dominate Ottoman architecture.

Sinān seemed to take his first hand lesson from Hagia Sophia, which gained his respect and admiration. From that, he set his intention on building something better and bigger to show the greatness of Islam.¹⁸ However, this devotion to the dome was also derived from his perception of its cosmic and symbolic conceptions, which were widely used in Muslim art and architecture before him. Muslims view the dome as a symbol of both God's domination and protection, which He bestowed on the universe. The association of the dome and blue decoration with the sky has a great spiritual significance that originated from the Seljuks (see Karatay Medressa for example).

In terms of urban design Sinān's impact was crucial as he was in charge of the whole city of Istanbul, responsible for its administration such as the sewer, water supply, fire regulations and the repair of public buildings. His constructions created harmony between architecture and landscape, a concept, which did not surface in Europe until 16th century. His choice of site, magnitude, form, and material of his buildings were employed as ingredients enhancing the beauty of the overall image of the city (fig. 6). With their magnificent size, these domed building complexes were distributed in the city to occupy key areas where they could have physical and aesthetic dominance. The vision was to assimilate the old Byzantine capital into an Ottoman "Islamic" identity. This approach can be seen more clearly in the image Sinān built for the Galata waterfront. He planted in this old Latin quarter of Constantinople, which was mainly occupied by Genoese merchants, three major edifices dominating the whole waterfront. The Kurshunlu Han, also known as the Caravansaray of Rustem Pasha, was erected by Sinān between 1544 and 1550 not far from the centre of the sea front. The Azapkapi Cami (1577) was commissioned by Sokollu Mehmet Pasha in 1577 on the southern corner of the Golden Horn sea front. The Kilic Ali Pasha *Kulliyeye* was raised at the northern corner, completing the whole image that Sinān wanted to give the district.¹⁹

¹⁸ Kostof (1995), op. cit.; incorporates a quote from Sinan on this issue, but its authenticity is somewhat questionable; see p.460.

¹⁹ It is also worth noting how these three patrons, who shared a common Latin and Christian origin and were all recruited by the Divshirme, have contributed to changing the Latin character of the district as if to emphasise their new allegiance. Rustem Pasha (1500-ca. 1561) is known to come from a Christian family from Sarajevo; he served as a Grand Vizier during the reign of Suleyman the Magnificent and married his daughter Mihrimah. Sokollu Pasha (1505-ca.1579) who was of a Bosnian origin too became Kapudan Pasha, the Great Admiral of the Ottoman fleet before Khireddine Barbarossa, and married Esmehan the daughter of Sultan Selim II. Kilic Ali Pasha (the Great Sword) was an Italian named Giovanni Dionigi Geleni, enrolled in the Devshirme to become the Famous Governor of North Africa (Algiers, Tunis and Tripoli). The success reached by these personalities is a reminder of those historians who attack the Devshirme as being a barbaric act of forcibly taking children from their Christian families to die in the service of the Sultan.



Figure 6. The Süleymaniye Complex in Istanbul; distant view from Tahtakale, with residential neighborhood on hillside. The image built by the Süleymaniya Mosque greatly emphasised the Muslim identity. Source: http://archnet.org/library/images/one-image.tcl?location_id=4395&image_id=136967&start=10&limit=9.

On city level, the enormous size and height of these buildings as well as the combination of domes and minarets stretching into the sky in a majestic fashion offered the right means for Sinān's symbolism. The overall picture, therefore, as summarised by Petruccioli is that "*Sinān demonstrates how it is possible to 'make urbanism' with architecture by marking out few nodal sites which exalt the 'genius loci'*".²⁰

The urban impact of these projects on the development of the city of Istanbul is also apparent in the social, political and physical scope of his constructions. These *Kulliye*, and Palace complexes, created new urban environments, known locally as *mahalle* or district. By making them functional centres of the neighbourhoods, Sinān used these *Kulliye* as "*the chief device of Ottoman city-making*"²¹. At first, they accommodated their own populations, administration and services, but later served as a nucleus for "sprawling" neighbourhoods.

Another of Sinān's contribution to urban planning is his construction of three water supply systems; the length of each was 50 km. The first system fed the city of Edirne from the Taslimusellim water source, while the other two supplied Istanbul from Suleymaniya (1557) and Kirkçesme (1564). Sinān constructed a network of aqueducts and tunnels, sometimes repairing or reusing the old Roman waterways, which supplied water to key public buildings and palaces as well as a large number of public fountains that were distributed on various parts of the city. Although constructed almost five hundred years ago such a system is still mostly in operation today, apart from the line feeding Istanbul from Suleymaniya, which became obsolete²².

²⁰ Attilio Petruccioli (ed.) (1984), "Mimar Sinan, the Urban Vision", Journal of the Islamic Environmental Design Research Centre, (Rome), p. 9.

²¹ Spiro Kostof (1995), op.cit, p. 457.

²² Unal Ozis (1984), "Sinān's water supply systems for Istanbul", in Mimar Sinan, the Urban Vision, (ed.) A.. Petruccioli, op. cit., pp. 206-

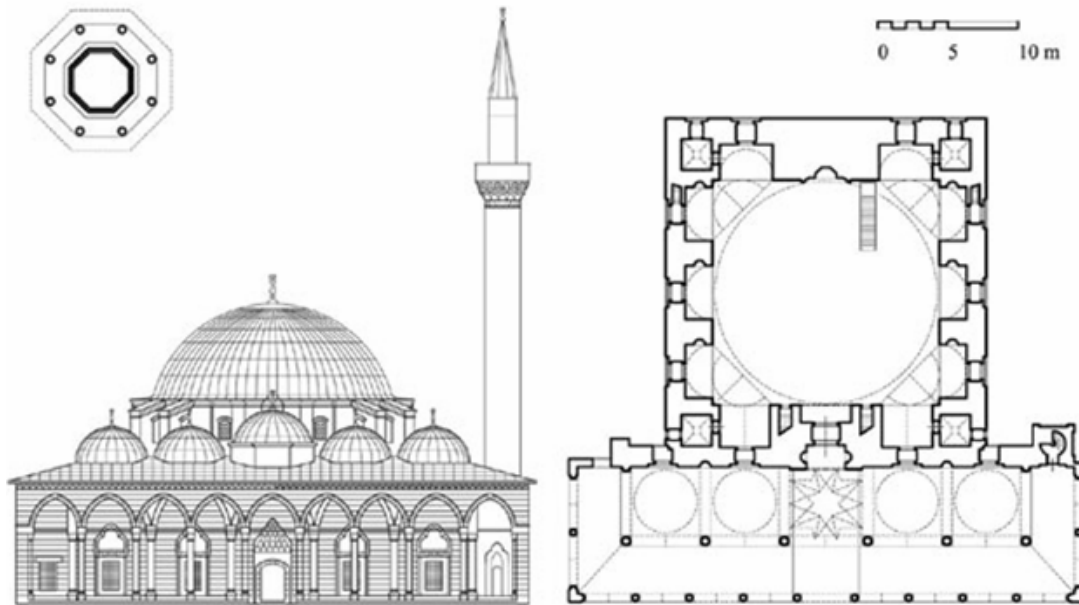


Figure 7. Drawing of Behram Pasha Mosque, Diyarbakir, Turkey; floor plan and elevation. Source: http://archnet.org/library/images/one-image.tcl?location_id=14164&image_id=170634&start=1&limit=9.

Special technical innovations

Among the special technical innovations incorporated by Sinān in his buildings, we mention:

1. Earth quake engineering and drainage systems

Sinān's buildings and mosques stood major quakes. He used to leave the foundations of a structure for a couple of years before he built the rest on top. He did so after having made measurements of the earth movement and decided whether to include lead sheathing as a cushioning layer (this method is used by modern structural engineers).

Sinān took all kinds of measures against the potential of strong earthquakes. First of all he used special floor cement in the base of the Süleymaniye Mosque. This cement would absorb earthquake waves. He also carefully checked the place where the monument was to be built, whether it would be or not as strong as to scale the building. If the place was safe, he put stakes to make stronger the earth underneath of the base and built walls to support the whole construction. In the case of the Süleymaniye mosque, he waited for a long time after he finished the base of the building to be sure that the base settled down safely. He spent a part of this time in carrying out calculations of mathematical measures connected to the project.

Sinān used to think multidimensional; he planned, located and built. Suitability of the location of a building to the city typography was important for him. Consideration of the city silhouette from Golden Horn, the location of the buildings on a hilly land, placement of minarets in relatively low places in a courtyard show

his mastery in architecture. He calculated every single detail and his delicacy in workmanship was far beyond his age.

He also established a sewer system, known as drainage, underneath his buildings. Setting this system, he aimed to protect the base of the building from the moistures, dampness and water. Moreover, he established some air circulation canals to remove the moisture and humidity from the interior of the building to provide the balance of hot and cold air circulation. In addition, he used the discharging canals to stop the water that may threaten the base and the walls of the structure, and when the soil warmed in the summer time he designed a system to evacuate the steam that was generated. All the steam discharge canals and humidity canals were connected to the drainage canals.²³

2. Environmental design

The oil lamps and candles, that were used in large numbers to lighten Sinān's huge buildings would generate smoke and burn oxygen, so he made use of aerodynamics to drive the smoke to a filter chamber. The soot was then collected and used for making ink. In turn, clean air was driven to the outside ensuring sustainability.



Figure 8. The oil lamps and candles used by Sinān respected environmental rules.

3. Acoustical design

Due to the design of the domes, the acoustics within the mosque are exceptionally clear. The air circulation within the mosque is also exceptional and the space above the entrance is illuminated by 4000 candles. Soot obtained from the candles is one of the raw materials in the making of ink used for calligraphy adding

²³ E. Atıl, "Art and Architecture", in *History of the Ottoman State, Society and Civilization*, op. cit.; Haşim Söylemez, Sinan Depremi Çözüştü, *Aksiyon Dergisi*, 15-21 Ocak 2000, pp. 10-25; Gülru Necipoğlu, "Challenging the Past: Sinan and the Competitive Discourse of Early Modern Islamic Architecture", *Muqarnas: An Annual on Islamic Art and Architecture* vol. 10 (1993): pp. 169-180; idem, "The Süleymaniye Complex in Istanbul: An Interpretation", *Muqarnas*, vol. 3 (1985): pp. 92-117.

with stirring. This ink protects the books from the book wolves. This system filters the air pollution inside the mosque from bad air that comes from candles and people breathing.²⁴

4. The use of ostrich eggs

Sinān used ostrich eggs in the centre of the chandeliers that dangled from the dome to chase away insects which were attracted by candles or oil lamps. Every huge Ottoman mosque has numerous ostrich eggs around the candles. The chemical structure of the eggs was aimed also to chase away spiders from mosques. Due to these eggs there are no spider webs in Ottoman mosques.²⁵

Conclusion

The merits of Sinān cannot be better expressed than what his former friend Sa'i Mustapha Celebi wrote on his tomb:

"Even if of short spell, the palace of the world is wonderful. Wordly pleasures don't give us a moment of peace, yet this man- be him blessed- has built for Suleyman the Great and Powerful a mosque which has been called "Firdaws". The same man has also built aqueducts. He is a paragon for mankind; but, now, he has come to his end. Who gave the Tsckelmedie Bridge its final arch? He did. In the course of his lifetime, like the stars, he too created many wonders. He built four hundred buildings, and worked on eighty mosques- like the creator playing with the world. And now he has died after only one hundred and some years of life! May Allah grant him peace in Paradise..."²⁶

This remarkable story resembles that of most Muslim medieval scholars and scientists who reached highest of the human achievement. Once again one finds the Muslim belief and devotion to improve the human quality of life and his environment to be the main driving forces behind the great successes of these pioneers, recalling the Qur'anic message:

"Those who believe [in the Qur'an], and those who follow the Jewish [scriptures], and the Christians and the Sabians,- any who believe in Allah and the Last Day, and work righteousness, shall have their reward with their Lord; on them shall be no fear, nor shall they grieve" (2: 62).

²⁴ See Mutbul Kayili, Acoustic Solutions in Classic Ottoman Architecture, published online at <http://muslimheritage.com/topics/default.cfm?ArticleID=514>.

²⁵ See R. Saoud, Muslim Architecture under the Ottoman Patronage (1326-1924), published online at: <http://www.muslimheritage.com/uploads/OttomanArchitecture.pdf>; and Nile Green. "Ostrich Eggs and Peacock Feathers: Sacred Objects as Cultural Exchange between Christianity and Islam", Al-Masaq, vol. 18 (2006): pp. 27-78.

²⁶ Quoted in A. Petruccioli Attilio (ed., 1984) op. cit., p. 6.



Figure 9. Behram Pasha Mosque, Diyarbakir, Turkey; interior view looking southwest towards *qibla* wall.

Source: http://archnet.org/library/images/one-image.tcl?location_id=14164&image_id=137051&start=1&limit=9.

Further reading and references

Babinger, Franz (1934), "Sinān Pasha," *Encyclopaedia of Islam*, 1st edition. Leiden: Brill, 1913-36, vol. 7, pp. 432-33.

Blair, Sheila S. and Bloom, Jonathan M. (1996), *The Art and Architecture of Islam, 1250-1800*. (The Yale University Press Pelican History). New Haven/London: Yale University Press. Reprint edition (paperback).

Cicek, Kemal *et. al.* (2000), *The Great Ottoman Turkish Civilisation*. Ankara: Yeni Turkiye Publishers.

Egli, Ernst (1954), *Sinan, der Baumeister osmanischer Glanzzeit*. Zurich: Eugen Rentsch Verlag.

[*Encyclopædia Britannica*, (2007)], "Sinan." *Encyclopædia Britannica*. 2007. Encyclopædia Britannica Online. 21 Apr. 2007 <http://www.britannica.com/eb/article-9067893>.

Goodwin, Godfrey (1987), *A History of Ottoman Architecture*. London: Thames and Hudson.

Goodwin, Godfrey (1993), *Sinan: Ottoman Architecture And Its Values Today*. London: Saqi Books.

Ihsanoglu, E. (ed.) (2002), *History of the Ottoman State, Society and Civilisation*, vol. 2. Istanbul: IRCICA.

Kostof Spiro (1995), *A History of Architecture*. Oxford: Oxford University Press.

Kuran, Apdullah (1987), *Sinan The Grand Old Master of Ottoman Architecture*. Washington, D.C.: Institute of Turkish Studies / Istanbul: Ada Press Publishing.

Necipoglu, Gülrü (2005), *The Age of Sinan: Architectural Culture in the Ottoman Empire (1539-1588)*, Princeton NJ.: Princeton University Press.

O'Kane, Bernard (1997), "Sinan," *Encyclopaedia of Islam*, 2nd edition. Leiden: Brill, vol. 8, pp. 629-30.

Petruccioli Attilio (1984), "Mimar Sinan, the Urban Vision", *Journal of the Islamic Environmental Design Research Centre*. (Roma: Carucci).

Rogers J.M. (2007), *Sinan: Makers of Islamic Civilization*. London/New York: I. B. Tauris.

Stratton A. (1972), *Sinan: The Biography of One of the World's Greatest Architects and a Portrait of the Golden Age of the Ottoman Empire*. London: Macmillan.

Sinanasaygi: Turkish Website dedicated to Sinan containing extensive information on his works in Istanbul:
<http://www.sinanasaygi.com>

[Sinan Master Builder] 2007: Mimar Sinan: Master Builder of the 16th Century Ottoman Mosque, Washington State University, School of Architecture, Archive Slide Library:
<http://mimoza.marmara.edu.tr/~avni/H62SANAT/mimarsinan.hayati.htm>

[The Sinan Collection] *The Sinan Collection on ArchNet*: features 226 photographs and 95 architectural drawings from Gülrü Necipoglu (2005), *The Age of Sinan: Architectural Culture in the Ottoman Empire*. URL: <http://archnet.org/lobby.tcl>. To view all available materials on Sinān in the ArchNet Digital Library, including scholarly articles, CAD files and images of monuments, visit: http://archnet.org/library/parties/one-party.tcl?party_id=630.