

## TEMPORALITY AND MEMORY IN ARCHITECTURE: HAGIA SOPHIA

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### ABSTRACT

Istanbul, having hosted many civilizations and cultures, has a long and important past. Due to its geopolitical locations, the city has been the capital of two civilizations—Ottoman and Byzantine Empires—which left their traces in the h world history. Architectural and symbolic monuments built by these civilizations made an impression in all communities making the city a center of attraction. After each and every damages caused by wars, civil strifes, and natural disasters, maximum effort has been made to restore these symbolic buildings.

Society's attitude toward to a piece of art or an architectural construction defined as historical artifact and is shown in interventions, architectural supplementations and restorations to buildings to keep them alive. As a result of this attitude, it is accepted that buildings are perceived as a place of memory and symbolized along with the city.

The most important symbolic monument of the city, Ayasofya (Hagia Sophia), was founded as the Church of the Byzantine Emperor in the year 360, then converted into the Mosque of the Ottoman Sultan, and now serves as one of the best-known museums of Turkey. With architectural additions requested by Byzantine emperors and Ottoman sultans, restorations and other functional changes; Hagia Sophia had become a monument witnessing its own changes as well as its surroundings while collecting memories. Accordingly, Hagia Sophia can be described as an immortal building. Immortality is out of time notion, however it is a reflection of time effects as well. Immortality is about resisting to time. Any construction from the past which appreciates as time passes will also exist in the future preserving its value. The building has been strengthened with the memory phenomenon formed during construction, incidents that the building witnessed in its location, restorations, architectural supplementations and the perception of the world heritage.

The main purpose of this presentation is to show how an intangible concept as memory concretizes in an architectural structure, within the context of immortality and time concepts, by examining Hagia Sophia.

**Keywords:** Hagia Sophia, Temporality, Immortal Building, Place of Memory

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## 1. INTRODUCTION

Istanbul had hosted many civilizations and cultures in the BC ages. Hagia Sophia first established in the center of early Greek civilizations and Byzantium city in 700 B.C. The area chosen as the city center illustrating the texture feature of Acropolis of the ancient city. In this acropolis, different civilizations built many temples. The temple built by Yanko Bin Madyan at 615 BC or 1200 BC is known as the oldest structure built in this area. The temple history lies between 660 BC - 73 AD and it had been destroyed during the invasion of the city. Then Helios Temple has been built instead during the reign of Emperor Septimius Severus (145-211). It's also known that Mother Goddess and Artemis temples have been built in the location of Hagia Sophia.

The 1<sup>st</sup> church built in this acropolis during the reign of Byzantine Empire opened its doors to believers in 360 and then destroyed at a revolt in 404. After the destruction of the 1<sup>st</sup> church, the 2<sup>nd</sup> church was constructed between 408-415. It's destroyed at a revolt in 532. The construction of the 3<sup>rd</sup> church (Hagia Sophia) started in 532 and completed in 538 and today it is the oldest one among the well-protected buildings of the city.

Research subject to the presentation consists of three main stages and conclusion. In the first stage; the memory place under time concept, perception and attitude concepts are described and legends on Hagia Sophia, other buildings that taken Hagia Sophia as reference, discussions and considerations about Hagia Sophia are examined. In the second stage; spatial changes in Hagia Sophia's surroundings are studied with supplementary maps. In the third stage; information on architectural features, restorations and architectural supplementations is provided. To conclude, impact of time on the memory about a construction in the past, present and future is addressed while identifying immortality and temporality in architecture.

## 2. TEMPORALITY and HAGIA SOPHIA

Concept of time is the necessity of individuals and community, culture and civilization, dynamism and stability, substance and existence. Time is the most important concept for having a place in the memories of civilizations, in the embracement of a construction, event or situation. In other words, it is the most important concept in the development of a belongingness and culture to create identity.

The acceptance of a construction as a piece of art relates to the sensations created by that construction on the communities in time known as aesthetical values. This value shapes the perception of the community. Therefore, the embracement of the construction and transformation to a memory place relates to the attitude created as the result of this perception.

While a structure is totally examined, it should also be examined within the frame of temporality.

### 2.1. Legends

Many legends are created about Hagia Sophia. The effects of its architectural features on the community are legendary. Accordingly, the construction itself, its immortality and its perception as a savior are the main subjects of these legends.

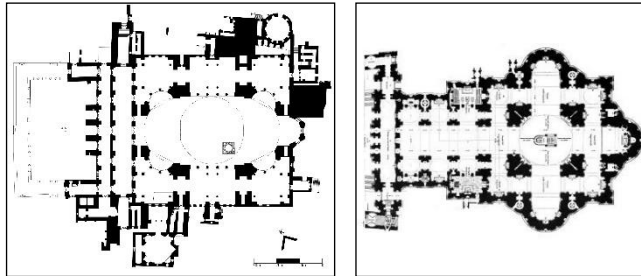
The wishing column (also known as perspiring column) of Saint Gregorios is also associated with Hizir and the legend of the column realizing the wishes still have acceptance even today. The legends such as starting a journey only after praying at Hagia Sophia, the doors built from the wood of the ship of Noah and blessed water curing the heart were accepted at the Byzantine period and also embraced during Ottoman period.

## 2.2. Construction Taking Hagia Sophia as Reference

Hagia Sophia has been reference, measure and inspiration to many other constructions in Istanbul and in the world thanks to its architectural feature, internal and external reflection in terms of esthetics, structural solutions and similar features. Art historians such as Cornelius Gurlitt, Ernst Diez and Cyril Mango pleads that Hagia Sophia had affected Ottoman architectural style.

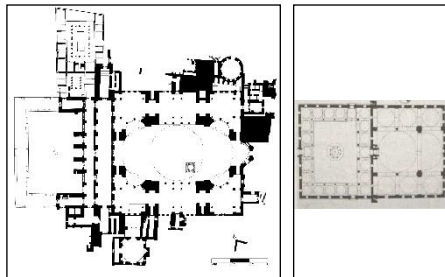
First the esthetical value of the structure is determined by comparing it with Pantheon. After the construction of Hagia Sophia, the structures in the Middle Italy have continued to be compared to Pantheon. However, the structures in the other parts of Italy have taken Hagia Sophia as reference instead of Pantheon.

St. Peter's Basilica (1626), has taken Hagia Sophia as reference for the internal narthex and the vaulting dome system used in the internal narthex.



**Figure 1.** The plans of Hagia Sophia Church and St. Peter Church (Debevec, 2015)

Fatih Mosque (1470), domed central square plan, flattened dome and interlacing pendentives from the square form of the central dome to the dome and the tectonic structure are the similarities with Hagia Sophia.



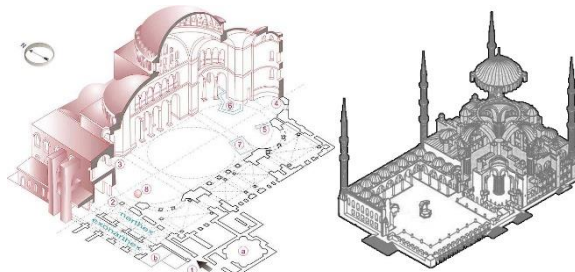
**Figure 2.** The plans of Hagia Sophia (1453) and Fatih Mosque (Gunther, 2011)

Beyazid Mosque (1506), Schzade Mosque (1548), Suleymaniye Mosque (1557) and Kılıc Ali Pasa Mosque (1580) have taken Hagia Sophia as reference in the upper structures and added to two large flattened domes to the main dome.



**Figure 3.** Hagia Sophia, Beyazid and Suleymaniye Mosque models

Sultan Ahmet Mosque (1616) and Camlica Mosque (2017) have taken Hagia Sophia as reference for the upper structures and used flattened domes under the central dome.



**Figure 4.** Hagia Sophia and Sultan Ahmet Mosques isometric section (Mainstone, 1988)

Mangana Saint Georgios Monastery (1055) and Selimiye Mosque (1574) have been designed to exceed Hagia Sophia in terms of architecture and esthetics.



**Figure 5.** Hagia Sophia, Mangana Saint Georgios Monastery and Selimiye Mosque Models

### 2.3. Discussions and Considerations

It's known that there are many discussion on Hagia Sophia which has survived 1500 years, witnessed two difference religions and social dynamics and finally became a museum by gaining value over religions and cultures.

Many rumors about the destruction of Hagia Sophia are spread during the invasion of Istanbul by Ottoman and the reign of Ottoman Empire. There are objections to the transformation of a structure used as church for 916 years to a mosque and other objections to the transformation of a structure used as a mosque for 482 years to a museum. There are also claims of fake signatures on the documents. The idea of reopening Hagia Sophia to religious services has triggered the discussion of which religion it will serve to. These discussions continue today.

### 3. HAGIA SOPHIA IN THE URBAN FABRIC

Constantinos I has created Council Road line (Mese-Divanyolu) in the first place while building the city of Constantinople. The main temple at the beginning of the road to Europe was placed and accepted as the center of the city. The most important factors of choosing this area for Hagia Sophia are that this location is the most important point of the acropolis in Istanbul geography, the topographical characteristics and important position of the location in Istanbul view, strong dominance and acceptance of the location as memory place and belief in the holy soil.



**Figure 6.** Topography and urban fabric of Byzantine

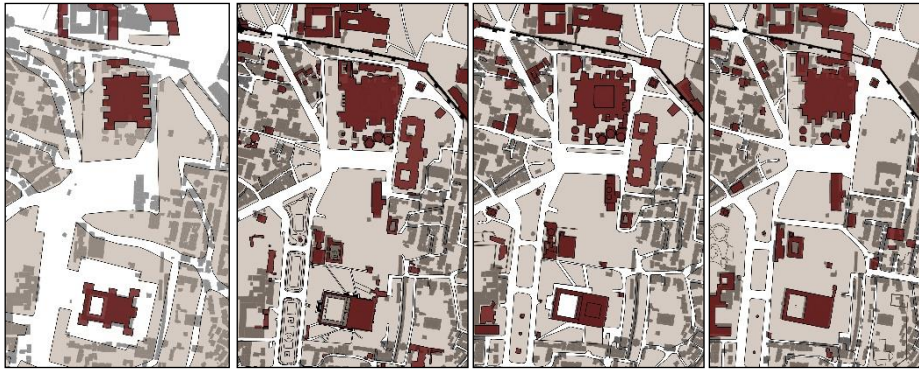
In the reign of Byzantine Empire, Palace, Senate and the Courthouse, Hippodrome, Hagia Irene Church, cisterns and city walls were built around Hagia Sophia.

Hagia Sophia and surroundings are also accepted as city center in the reign of Ottoman Empire. Council Road maintained its importance with the same function and the line was powered by buildings around it. Hagia Sophia has affected its close surroundings due to its location. Topkapi Palace, Gulhane Park, Tiled Kiosk, Firuz Aga Mosque, Grand Vizier Ibrahim Pasa Palace, Haseki Hurrem Bathhouse, Caferaga Madrasa, Sultan Ahmet Mosque, III. Ahmet Fountain, Archeology Museum and German Fountain were built and the urban fabric has been shaped by taking Hagia Sophia as reference.



**Figure 7.** The constructions which have taken Hagia Sophia's location as reference

In the reign of Selim II, it's thought that the wooden structures close to Hagia Sophia may damage Hagia Sophia in case of a fire. They are destroyed and a new environmental planning has been enacted. During the reigns of Abdulhamid I and Abdulaziz I sidewalks were built within the frame of environmental planning. The wooden structures which were rebuilt around Hagia Sophia in time are redestroyed in the Fossati Restoration and in the year 1868. After Ishak Pasa Fire in 1912, in the year 1913 the square between Hagia Sophia and Sultan Ahmet Mosque is planned. When the maps are examined, it's seen that the unplanned urban fabric was planned and organized in accordance with the restored constructions locations. In 1977 residential buildings survey, reconstruction and restoration was made in Sogukcesme Street and new open exhibition spaces were created as well as passages to the street.



**Figure 8.** The comparison of 1909 Lacey Sillar-Westminster Map, 1918-1921 German Map, 1922 Map and Müller Map to the Present Map.

#### **4. ARCHITECTURE of HAGIA SOPHIA**

The breaking point of Hagia Sophia is accepted as the functional changes occurred in line with the changes in demographic situation, culture and the belief of Istanbul city. Within the scope of this breaking point, Hagia Sophia was reorganized with architectural additions, restoration works and liturgical objects added by the previous emperors in order to meet the necessities of the new era and ensure its survival up to date. In addition to these breaking points, architectural features of the 1st and 2nd churches built in the same location before Hagia Sophia are also important for understanding the structure.

##### **4.1. Church**

Although the architectural characteristics are not exactly known, following the researches it's thought that the 1st church—named as Hé Megalé Ekklésia— which had started to built in the reign of Constantinos I (324-337) and completed in the reign of the Constantinos II (337-361) had wooden roof, stone walls, three or five naves, atrium and narthex in the front section and galleries on the upper storey. The Treasure Room (Skeuophylakion), Baptistery (Olympas) and Eparchy Palace next to the south wall were also built within the structure. It's thought that the walls separating the middle and side naves were covered with mosaics.

The 2nd church, named Dromikos, was built on the foundations of 1st church in the reign of Theodosios II by Architect Ruffinos. It's thought that the 2nd church had wooden roof, five naves, arched ceiling, basilica plan and walls made of stone and bricks. The entrance to the 2nd church was through columnar atrium to the west, followed by the stairs to the narthex of 5.00m height

and a monumental entrance of three arched doors. The exact plans and correct architectural dimensions could not be reached however it's estimated that the atrium was 47.60 m x 35.50 m and the worshipping zone was 60m wide. The 2<sup>nd</sup> church with Skeuophylakion at the west was flamboyant compared to the 1<sup>st</sup> church as it is seen in ruins of the column headings, embossments and monumental entrance.

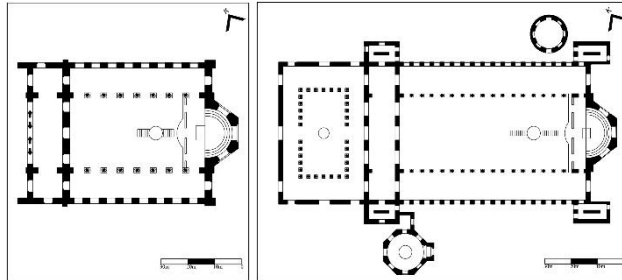


Figure 9. 1st Church and 2nd Church Plans

The 3rd church, Hagia Sophia, started to be built by Architects Antheimos and Isidoros in 532 in the reign of Justinianus. The church has domed basilica plan, atrium serving as cistern with fountain in the west and the middle, square worshipping zone and naves at both sides and the galleries on the upper storey reachable through four ramps. The worshipping zone is approximately 79.30 m x 69.50 m and 100 m x 70 m including the narthexes. The width of side naves is 18.20m and 18.70m. Abscissa exceeds 6m outside. The construction is built with materials brought from the wide borders of the Empire and the structural artifacts brought from the temples. Marble is used in the flooring and the walls and the usage of wooden materials are avoided due to the risk of being easily damaged.

It's known that Patriarchate Building and the Chapel is next to the upper storey gallery wall and there's another room near the south ramp. Additionally, there's a hall linked to the bell towers that has no connection with Hagia Sophia.

The dome was collapsed because of the earthquakes in 553 and 557. Then it was reconstructed by Young Isidoros in five years and the new construction was 6.24 meter higher than the previous one.

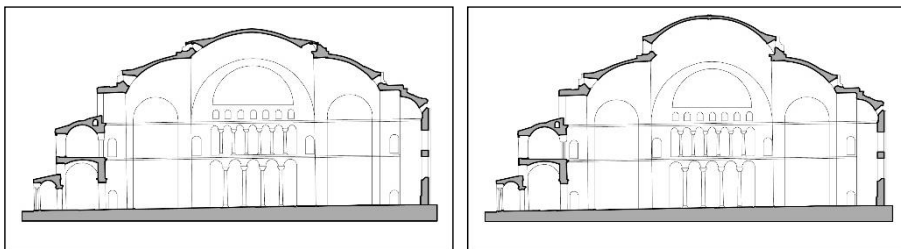


Figure 10. Hagia Sophia's sections in 537 and 562

Dome repairs are made in the reigns of Basileios I (867-886), Constantinos VII Porphyrogenetos (908-959) and Basileios II (976-1025).

Hagia Sophia is plundered in 1204 during 4th crusade and no architectural applications were made excluding the addition of the closed and roofed entrance at the southeast until it was patronized by Byzantine Empire again in 1261.

In the reign of Michael VIII (1259-1282) repairs were made by Architect Ruchas. In the reigns of Ioannes Kantakuzenous VI (1347-1354) and Andronikos II (1282-1328), the damaged dome as a result of earthquakes were reconstructed and buttresses were added.

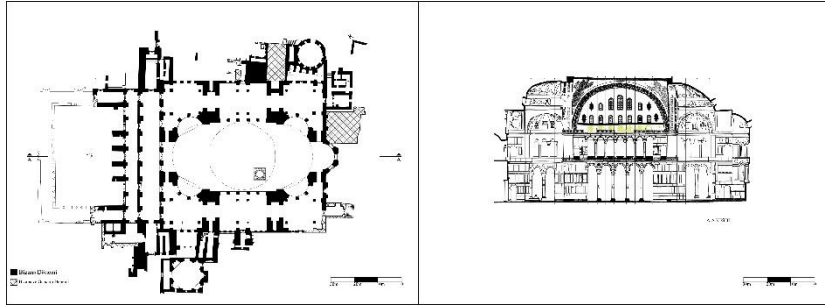


Figure 11. Hagia Sophia Church plan and section in 1453

#### 4.2. Mosque

Hagia Sophia had begun to serve as a Mosque after the conquest of Istanbul by Ottoman Empire. In the reign of Mehmet the Conqueror (1451-1481) new arrangements were made as the belief for which the construction served was changed. The liturgical objects were removed, the mass axis was relocated to 100 south and the mosaics were covered. A wooden minaret and a cistern were added and a madrasa was constructed next to them.

All Ottoman Sultans had restoration works against the factors such as earthquakes, fires, time, revolts and so. They also added various liturgical objects, architectural elements and new structures in its garden to enrich the construction.

#### 4.3. Museum

In 1935, with the new Republic, Hagia Sophia was rearranged and transformed into a museum. The liturgical object which will not be shown into exhibition were removed from Hagia Sophia and restoration work started.

In the first years of Republic, the mosaics were removed by Thomas Whittemore and his works lasted for 19 years.

Many local and foreign historians, architects, archaeologists and similar experts had worked in the mosaics removal and restoration works of Hagia Sophia and they made excavation studies in and out of the structure.

In 1935, Madrasa collapsed and the ruins of 2nd church were found by A. M. Schneider.

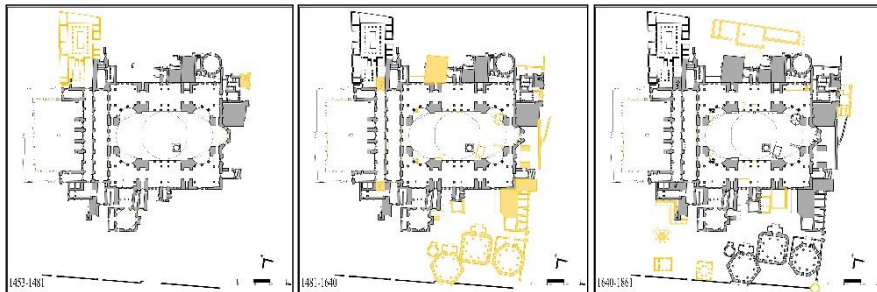
Between 1947-1950, in the excavation works performed by Muzaffer Ramazanoglu new discoveries were made related to the 1st church and in the excavation works realized by Architect Alpaslan Koyunlu in 1955 discoveries were made related to the 2nd church.

Between 1959-1960, Archeologist Rustem Duyuran discovered ruins of four support walls of the monastery during the mosaic works of Dr. Cyril Mango and Professor Romilly J. H. Jenkins.



**Tablo 1.** The timewise examination of Hagia Sophia Mosque

DATE	EMPEROR	APPLICATIONS and ADDITIONAL STRUCTURES
1481-1512	Beyazid II	Southeast Minaret was added. A storey was added to the Madrasa.
1520-1566	Suleyman I	Two bronze candelabras were added to Hagia Sophia.
1566-1574	Selim II	Northeast Minaret was added. A storey was added to the Madrasa. The structure was strengthened with buttresses. A cistern was added and a fountain was built in the garden.
1574-1595	Murat III	Southwest and Northwest Minarets were added. Tomb of Sultan Selim II and Tomb of Princes were built in the garden. Muezzin's Loge was added.
1595-1603	Mehmet III	Tomb of Sultan Murat III was built.
1603-1617	Ahmet I	Tomb of Sultan Mehmet III was built in the courtyard. Tiled panels and calligraphic plates were added.
1623-1640	Murat IV	The Baptistery was transformed into Tomb of Sultan Mustafa I. Minbar and calligraphist plates were added.
1640-1648	İbrahim I	A public fountain was built in the yard.
1648-1687	Mehmet IV	Calligraphist plates were added.
1695-1703	Mustafa II	Calligraphist plates were added.
1703-1730	Ahmet III	Sultan's Loge was widened.
1730-1754	Mahmut I	A library to the side nave, Elementary School to the southwest, a fountain in the yard and an Almshouse to the northeast were built. Kasrı Hümayun (Sultan Kiosk) was added to Ayasofya.
1789-1807	Selim III	Calligraphist plates were added
1808-1839	Mahmut II	Two tiled panels were added.
1839-1861	Abdulmecid I	A cistern was added to the internal narthex. The statics was strengthened, the mosaics were repaired and recorded, liturgical objects were added, the surrounding constructions were reorganized, Sultan Kiosk was added, all surface coatings were repaired and Fossati Restoration was made. It has the most important role in the survival of Hagia Sophia up to date. At the same, Timing Room (Muvakkithane) was added in the courtyard.
1861-1876	Abdulaziz I	Madrasa was rebuilt.
1909-1918	Mehmed Resat V	The reports prepared by H. Prost and Maranconi could not be realized due to WW I.



**Figure 12.** Hagia Sophia Mosque plans for different periods

Between 1975-1976, four support walls in the west side of Hagia Sophia collapsed.

In 1983, in the drilling works performed by Master Architect Alpaslan, the ruins of the water tank, Patriarchate belonging to the church period and passages linked to the hippodrome were discovered.

In 1992-1993, 2002, 2003 and 2007, reports were prepared to in order research the effects of a potential earthquake on Hagia Sophia.

Burial chambers and oil rooms were found in the tunnels below by Goksel Gulensu. Underground tunnels, wells and underground connections were found in works initiated by Cigdem Ozkan Aygun in 2005.

Today, restoration works, mosaic and excavations works continue. The structure is not totally taken under process and survey plans, restitution and restoration works are realized partially. Each application is carried on by different office and experts.

## 5. CONCLUSION

The legends created about Hagia Sophia show us the effects of this construction on the communities and how it's embraced by different cultures up to date even though they're not scientifically proven. The legends manage to survive up to date, the embracement of two empires are all strong signs showing us the immortality of the construction and its timeless value.

Hagia Sophia was a first in terms of structural solutions and it's greatly appreciated aesthetically and architecturally and for its influence on architectural styles after its establishment.

Discussions show us that Hagia Sophia is very important for every community and religion and it's strongly embraced and cannot be shared. At the same time, it's very clear that these discussions, claims and ideas support the immortality of Hagia Sophia.

Even before its establishment its location was accepted as a holy site and that's the main reason that 1st church, 2nd church and Hagia Sophia were built on this location. Hagia Sophia was the main church of Byzantine Empire and then embraced by Ottoman Empire as heritage and served as the main mosque. It was restored by the emperors and sultans of every age and they all wanted to leave a trace in the history of Hagia Sophia with the additions they made. Liturgical objects were added inside the construction to increase its perception and effects on the people.

Besides the demographical changes, constructions collapsed in time due to earthquakes, fires and social events such as revolts had also significant role in the transformation of the urban fabric. Additionally, the functional change of Hagia Sophia has directly triggered the changes in its structural use and implicitly affected the changes in its close surroundings.

In accordance with all these approaches, Hagia Sophia is the solid answer to intangible concepts such as immortality, temporality and memory as its legends are still believed, it's still subject to discussions and considerations, it's a reference point with its architecture and location, it carries its historical importance up to date and it is irreplaceable with the urban fabric.

Hagia Sophia is a place of memory existed in the past, today and will exist in the future. Hagia Sophia exists for a very long in time and reaches temporality and becomes infinite.

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