



## The revival of the Byzantine church Hagia Irene in Istanbul

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## Summary

The research comprised in this graduation report aims to establish a framework and design approach to the re-purposing of the Hagia Irene church in Istanbul. It seeks to answer the following research question: “How can we preserve the specific characteristics of the Byzantine church Hagia Irene in Istanbul when introducing a new function?”

This question is approached by first analyzing the church’s historical and present-day characteristics, as well as those of its surroundings. Historical characteristics include the basilica plan, the dome, the contrast between the exterior brick and interior mosaics, and the connection with the Hagia Sophia. During the Ottoman empire, the connection with the Hagia Sophia was severed by the construction of the courtyard wall of the Topkapi Palace. As well, the Byzantine urban fabric was covered with 6-8m of sand, and a new Ottoman layer built over it. The ruins of these historical layers are a defining characteristic of the Hagia Irene, and have been preserved in what is now an archaeological park around the church. Today, some of the Hagia Irene’s characteristics have been lost, in part because the mosaics have been worn away, and because most of the doors and some of the windows have been filled in.

The second section of the report outlines different approaches to re-purposing historical buildings, with a focus on Istanbul’s Orthodox spiritual leaders and architects. The spiritual leaders are against the re-purposing of churches, because a place built and consecrated for worship should not be used for anything else. However, they allow combining the church’s original function with other appropriate uses such as a concert hall or museum. They also suggest to focus on the church’s surroundings for the addition of new functions. Istanbul’s architects also stress the importance of maintaining a continuity with the history of the church, especially with its original architectural and urban characteristics. In this way, the integrity of the space can be preserved.

The third section explores two case studies of interventions that re-purpose historical buildings while preserving their original characteristics. The first is the Szathmáry Palace in Hungary, which re-purposes a bishop’s summer residence from the 16th century into a theatre by adding an enclosed staircase and sitting elements. The new elements contrast with the ruins while, at the same time, emphasizing the original structure. A similar approach is adopted for the re-purposing of Astley Castle in the United Kingdom. The new layer that is added to the medieval castle both strengthens the ruins structurally, and frames them visually.

The report concludes that, in order to preserve Hagia Irene’s specific characteristics when introducing a new function, new additions should maintain the integrity of the architectural space, restoring and bringing attention to its character-defining structural and decorative elements, at the same time making reference to the building’s history. While multifunctionality should be provided for, the church’s original function should be respected.

Based on the research conclusions, design principles are formulated. They address the church’s interior, the adjacent ruins, and the overall surroundings, and express the design’s aim to give importance to the experience of the Hagia Irene’s history by framing its “layers of time”.

## Abstract

This report concerns the reuse of Byzantine churches in Istanbul, and focusses on the specific case of the Hagia Irene. Through an analysis of literature, interviews, a site visit, and case studies, conclusions are drawn concerning recommendations for this design problem.

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# 1 Preservation of the Hagia Irene

## 1.1 Motive

My interest in Byzantine churches began when, as a child, I visited the Hagia Sophia in Istanbul. While I was impressed by the architecture, I was also disappointed by the state that it was in: large parts of the original decorations were no longer visible, and the additions that were made did not seem to harmonize with the building. This experience left me with a question: how can I experience this space in its original splendour?

This question was deepened when, during my studies, I investigated how the phenomenon of empty churches is being addressed in the Netherlands. From this research, it became evident that in order to preserve the richness of history, three key aspects need to be addressed: history, architecture and people.

These three aspects are addressed in my proposal for the re-use of the Hagia Irene in Istanbul. This specific case was chosen because it is one of the few churches in Istanbul that, instead of being converted into a mosque, functions as a museum and venue for classical concerts.

Research Question:

“How can we preserve the specific characteristics of the Byzantine church Hagia Irene in Istanbul when giving it or its surroundings a new function?”

Where “specific characteristics” encompasses both the generic characteristics of Byzantine churches, and the particular characteristics of the Hagia Irene.

Sub-questions:

1. “What are the specific characteristics of the Byzantine church of Hagia Irene in Istanbul?”
2. “What are the specific characteristics of the surroundings of the Byzantine church of Hagia Irene in Istanbul?”
3. “What are the possible approaches for re-purposing the Hagia Irene and its surroundings?”
4. “How can we preserve the characteristics of the church and its surroundings when repurposing and what should be taken into account?”

## 1.2 Working method

To find an answer on the sub-questions and the research question I used different methods. Literature, interviews, case studies and a visit to the locations in Istanbul. Literature is used to find out about the history, the architecture and the new possible functions. Interviews were especially useful for the opinion of architects and spiritual leaders. Two case studies were analysed to find out how a new function can be introduced into an old building and how a new design can be applied with respect for the old. In addition, site visits to the Hagia Irene and other Byzantine churches in Istanbul shed light on the current situation and gave insights on the added value that a new intervention can bring.

## 2 Characteristics of the Hagia Irene

### 2.1 History of the Hagia Irene

The Hagia Irene had an important role throughout history together with the Hagia Sophia. Initially, the Church of Hagia Irene served as the cathedral of the city in ancient Byzantium. Then, when Constantine built the Hagia Sophia, Justinian named this new church as the Church of the Divine Wisdom and the Hagia Irene as the Church of the Divine Peace. From that time, the two churches were closely linked. They were part of the same religious establishment, were both managed by the patriarchate, and shared the same clergy. The Hagia Sophia functioned as the main church, and the Hagia Irene was used for several important services and meetings such as the annual Good Friday service and the Second General Council. Together, they were called 'the Great Church'. (Van Millingen, 1912)

When the conquest of the Ottomans introduced Islam as the new religion of Istanbul – a city that until then had been the capital of Orthodox Christianity – most churches were transformed into mosques, including the Hagia Sophia. The Hagia Irene was separated from the Hagia Sophia, but did not become a mosque, partly because of its protected location behind the defence walls (figure 1) of the Topkapi Palace that was built during that time. Instead, it was given various other functions, including an arsenal, a museum of arms, a storehouse for antiquities and a madame tussauds. Today, it is used as a museum, and occasionally as a venue for classical music concerts.

As a result of these functional changes and a general lack of restoration efforts, the two churches began to lose some of their defining characteristics. In particular, the Christian ornamentation began to wear away or was covered and filled, and today little of it remains. In my opinion, the loss of ornamentation is very unfortunate because of both churches' historical importance.

In addition to changes in the churches themselves, the Ottoman conquest also modified the surrounding context. Firstly, a sand layer was added over the surrounding Byzantine urban fabric, raising the ground level by approximately six to eight meters to where it is today. Secondly, the new Ottoman urban fabric was added on this raised level with a different orientation than the Byzantine ruins below it. Thirdly, when the Topkapi Palace was built, the walls of its first courtyard enclosed the Hagia Irene within it, cutting off the visual connection between the two churches. These changes to the Hagia Irene's surroundings in turn changed the location of the church's entrances, bridging the height difference between the old and new ground levels with a ramp.

The various historical phases or "layers of time" of Hagia Irene and its immediate surroundings is still visible today (figure 2). The visible fragments of the Byzantine layer include the Bishop's house, a small part of the Sampson hospital, and the church itself (Figure 17). The Ottoman layer is completely visible.

### 2.2 General Characteristics of Byzantine Churches

Despite the changes that Istanbul's Byzantine churches have undergone throughout history, which became evident to me during my travels (figure 3), they have certain characteristics in common. (Van Millingen, 1912)

One common characteristic of Byzantine churches is the plan, which is of three types: the Basilica, Octagonal or Circular, and the Cross plan (this last type, however, is no longer present in Istanbul) (Van Millingen, 1912). These simple spatial organizations (figure 4) create unexpectedly complex spatial geometries, an effect that I felt very strongly during my site visits.

A second characteristic that defines Byzantine churches is the dome. They exist in several variations, three of which are illustrated in figure 5. As well as playing an important role in defining the interior space, the dome is a key structural element of the church. (Van Millingen, 1912)

Thirdly, Byzantine churches are defined by a strong material contrast between the exterior and interior: while the exterior is characterized by thick brick walls without ornamentation – although many architects in Istanbul consider the composition of bricks to be ornamental – the interior is decorated



Figure 1 The Hagia Sophia and the Hagia Irene separated by the Topkapi Palace wall (based on plan taken from Müller-Wiener, 1977)

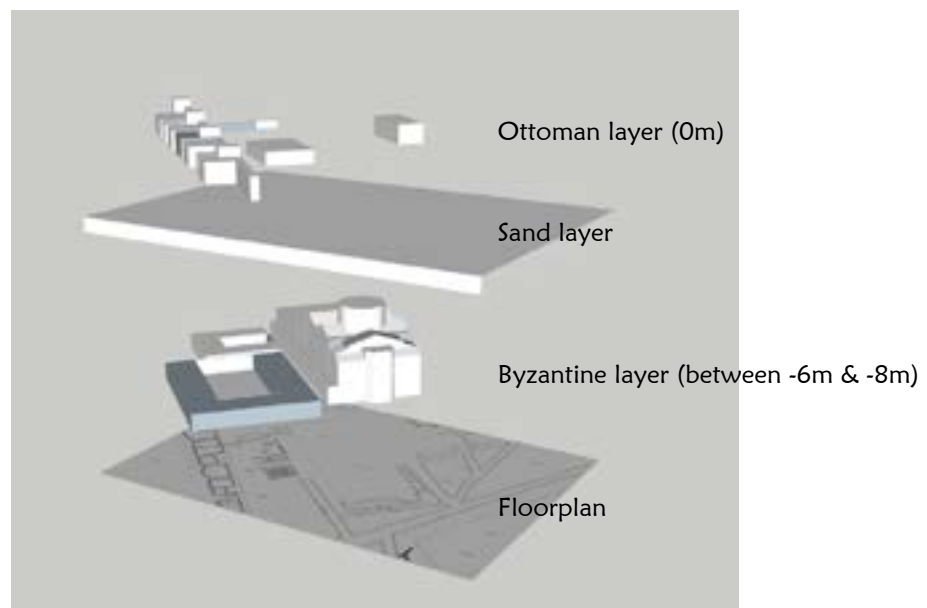


Figure 2 Different layers of time in the close surroundings of the Hagia Irene (Illustration by author)



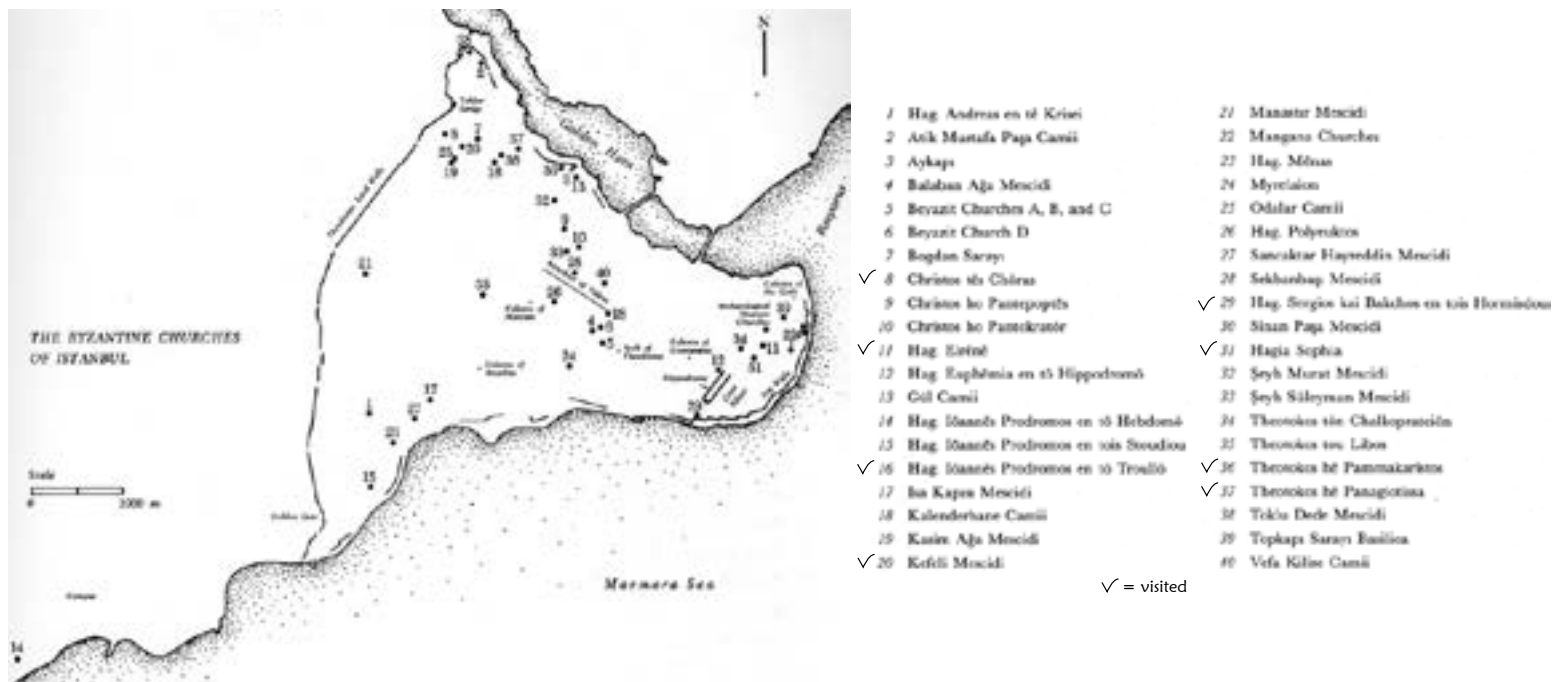
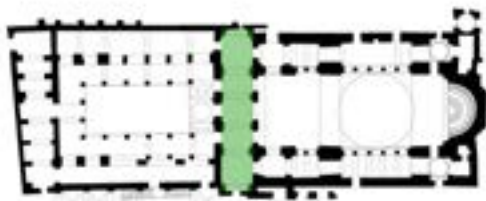
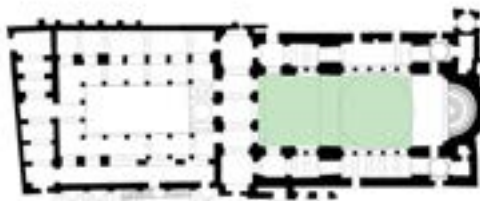


Figure 3 Byzantine churches in Istanbul (Mathews, 2001)

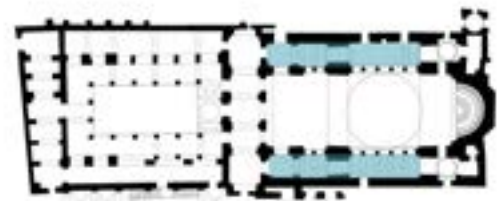
The narthex



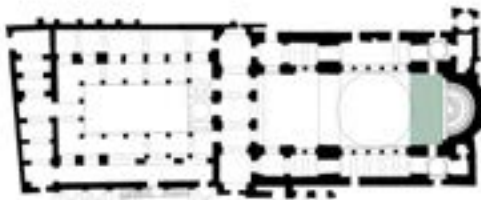
The nave



The aisles



The bema



The apsis

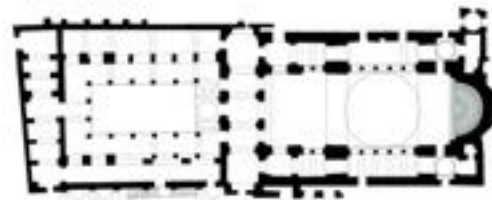


Figure 4 Division in space (based on plan taken from Müller-Wiener, 1977)

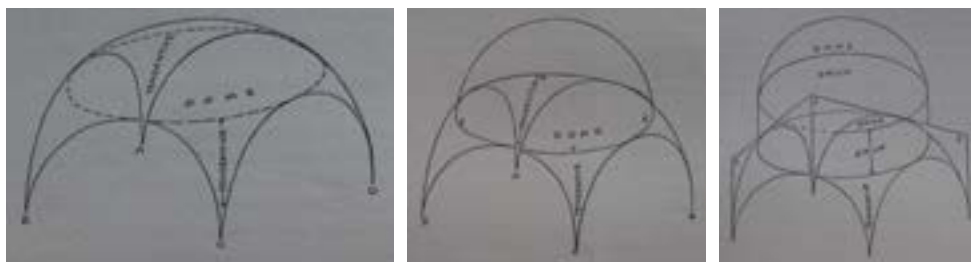


Figure 5 The domes (van Millingen, 1912)





Figure 6 The main dome of the Hagia Irene from the outside and the inside (photo taken by author)



Figure 7 The construction of the Hagia Irene with the dome, thick walls and arches (photo taken by author)



Figure 8 Different kinds of bricks and compositions in the outer part of the east façade at the apsis (photo taken by author)

with mosaics and marble, among other materials, with patterns that followed defined material, geometrical and compositional rules (Van Millingen, 1912) This contrast is much less present today, with only fragments of the original decoration still visible. The original decorations have been better preserved in some churches, however, for instance in the Church of the Holy Saviour in Chora (Kariye Museum), which I visited during my travels in Istanbul.

## 2.3 Characteristics of the Hagia Irene

These characteristics are also present in the Hagia Irene. Its plan is of the Basilican type (Van Millingen, 1912), with a very human scale: its plan is 42.2m long and 36.7m wide in total, and the nave is 15.3m long and 8.3m wide (Freely and Cakmak 2004). The apse is five-sided on the exterior and semi-circular on the interior.

Hagia Irene's dome (figure 6) is of particular historical importance because it played a key role in the development of dome construction (Van Millingen 1912). While previous domes were low and imperfect, Hagia Irene's dome, built around 740 A.D., has a high drum, and its domical system of roofing achieves a more complete integration than in previous churches. On the exterior, Hagia Irene's dome is polygonal. Building on this development, subsequent Byzantine domes were also made with a high drum, aided by rib or hollow structures on the interior.

The characteristic brick structure of Byzantine churches is likewise a defining aspect of the Hagia Irene (figure 7). It has thick walls and arches, and from the exterior it reads as simple masses of brick. The structure around the main dome consists of peaked roofs, except for the western roof, which is an elliptical dominical vault. Three pairs of piers are located in the central part of the nave. These piers have slender columns between them to support the galleries on the side and stand on the corners of two large bays. They don't have a base moulding, but stand on damaged blocks, which are likely either cores of marble pedestals or simply reused material. (Freely & Cakmak, 2004). While this brick construction dominates both the exterior and interior of the church today, the parts of the original interior decoration that are still visible give a hint of the rich decoration that once characterized the space.

In addition to the elements that identify the Hagia Irene as a Byzantine church, specific qualities and modifications that characterize the church today are equally important to consider. These qualities include the "layers of time", the decoration, and the coverings and fillings of doors and windows.

### 2.3.1 Layers of time

Today, the Hagia Irene bears the mark of various historical layers, a quality that can be understood as "layers of time". These layers are partly the result of several earthquakes, struggles and fires. Van Millingen states that some parts of the church were seriously injured and rebuild after being damaged. This was all before the Turkish conquest. Van Millingen mentions parts from three different time periods. The first change were the walls of the body of the church, until the springing of the vaults of the aisle, which are built by Justinian after the Nika Riot in 532. The second change were the repairs probably also made by the same emperor after the fire of 564. This contains the narthex, aisle vaults next to it and the upper part of the western end of the south wall. The third change was because of the earthquake in 740. Only the narthex was left standing. The upper part of the building, the apse, the dome-arches, the dome-vault and the dome including its drum were all reconstructed. Additions are also made in these periods. (Van Millingen, 1912) These changes are visible in the church today. For instance, different kinds of bricks and compositions from different time periods are visible in the outer part of the east façade at the apsis (figure 8).

In addition to the reconstructions following damage to the church, the changes in culture and religion brought about by successive empires throughout Istanbul's history have also left their mark on Hagia Irene. (Ahunbay, 2012; Freely & Cakmak, 2004; Van Millingen, 1912). Traces of these changes are evidenced, for instance, by the marks of different empires (figure 9). The most significant change, however, was the double portico with a peristyle that was added to the inner perimeter of the atrium courtyard (figure 10) following the Ottoman conquest, reducing its original size (Freely and Cakmak,

2004). Exterior bays were also added to the church during this time.

The changes that the Hagia Irene has undergone throughout its history can be read today in the church's material composition. The various types of brick and stone, as well as the different kinds of wood construction, reveal these historical layers – or “layers of time” – and tell the story of the building and of Istanbul.

### 2.3.2 Ornamentation

The mosaics that have been preserved on the ceiling above the apsis (figure 11), and immediately drew my attention when I entered the church. On a gold background with an outlined geometric border, black cross with flared, teardrop-shaped ends that stands on a base of three steps. Below this mosaic, a double green band and moulding runs along the base of the semi-dome. These mosaics probably date from the rebuilding of the church in the eight-century. (Freely & Cakmak, 2004)

In addition to these mosaics, the synthronon (a structure behind the altar that provides seats for the clergy) is a unique element of the church. It is located on the periphery of the apse, and its openings provide light to the ambulatory and semi-circular passage below it. This passage originally received additional light through doors at both ends, but these have since been blocked by the addition of the stage (figure 12). The synthronon element has eleven risers, several of which are no longer visible because of the stage that has been placed in front of it. This number is in accordance with the method of seating that calls for either five, six, or eleven rows. While a synthronon typically combined the clergy's seating with the bishop's throne, however, no vestige of an episcopal seat was found in the Hagia Irene. However, it should be taken into account that the stonework has been disturbed and some of the seats may have been re-built with portions of the moulded base of the marble revetment of the building (Van Millingen, 1912).

As was explained to me by a tour guide, this element is very rare, and is in fact the only one from the Byzantine era in Istanbul; only one other church in Turkey has a synthronon. Given its importance, it does not seem appropriate to me to have partly blocked it with a stage.

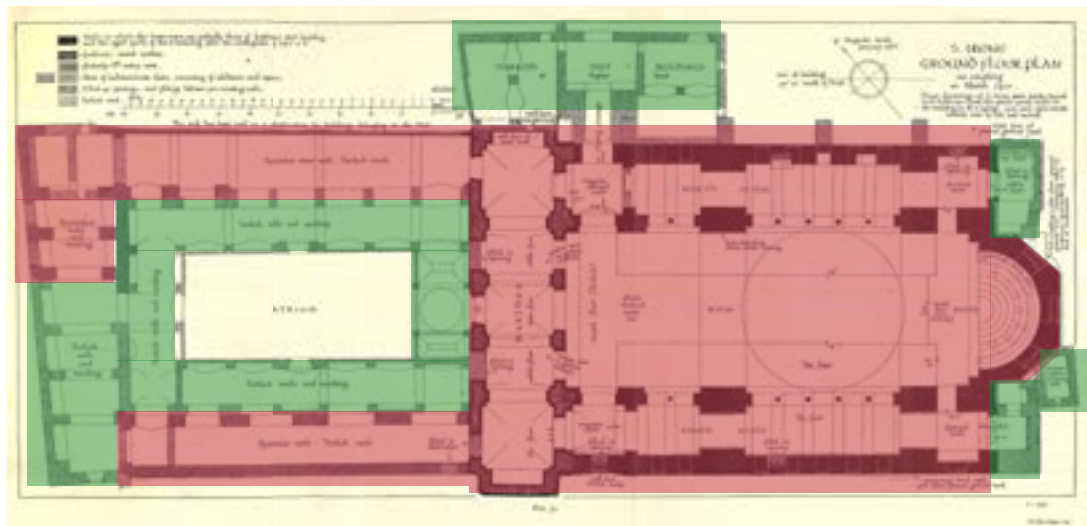
### 2.3.3 Covered openings and entrances

The visual and urban connection is internally and externally reduced. Many doors and windows have been covered or filled, affecting the original experience and routing of the church. Van Millingen explains that the church was originally entered through the atrium and the narthex by five doors, but today it can only be entered on the western end of the north aisle, by passing the porch and the slope. The other entrances from the exterior have since been filled with stones and wood.

The accessibility of the courtyard of the atrium has also been changed. The west door, which originally served as the main entrance of the courtyard, is nowhere to be found. Today this space can only be accessed from the interior of the church, through its central door. Moreover, it is no longer possible to access the atrium from the outside, although the courtyard is still accessible from the inner part of the church.

Inside the church itself, the original accessibility of the gallery remains unclear. The current stairs are not original, but are of Turkish origin. According to Van Millingen, it is plausible that the fragments of the south wall of the narthex and the traces of vaulting beside them may be the remains of a Byzantine staircase. He also claims that there could have been a staircase to the west of the narthex over the vaulting of the atrium, evidenced by the spurs on the walls. (Van Millingen, 1912) While I myself did not find the traces that he mentions, I found other remains that could indicate a staircase on the external southern wall of the narthex (figure 13). As well, I noticed windows on the gallery above the narthex that are adjusted like the one in figure 14. These parts are, I assume, not typical Byzantine, and might indicate the location of a connection to the gallery from the outside.

In addition to the modified routing, some windows have been filled in, including several of the twenty windows in the drum of the dome. It is unfortunate, because filling these windows partially blocks the zenithal light from entering the church.



■ Byzantine    ■ Ottoman

Figure 9 Different seals of different empires (based on plan taken from Van Millingen, 1912)



Figure 10 The double portico which reduced the original atrium (photo taken by author)

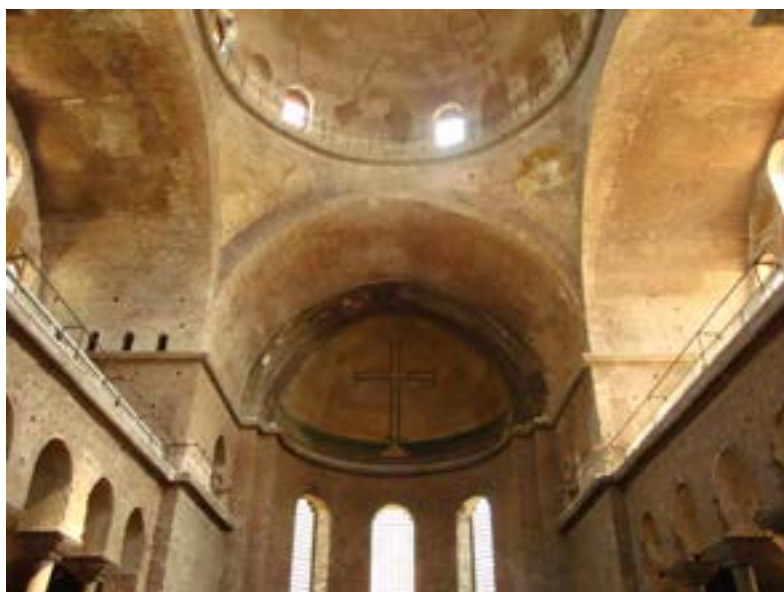


Figure 11 Mosaics at the apse and the bema (photo taken by author)





Figure 12 The stage before and after (Unknown, photo taken by author)



Figure 13 Remaining's on the outside of the southern wall of the narthex (photo taken by author)



Figure 14 Windows on the gallery above the narthex which are not typical Byzantine (photo taken by author)

## 3 Hagia Irene's Urban Context

### 3.1 Archaeological park

Today, the Hagia Irene is situated in an “archaeological park” (figure 15), an excavated area is left as it is in order to reveal the ancient features of the city, to preserve and present them to the public. (Ahunbay, 2012). Henri Prost, a French architect and urban planner, created this park because of the historic importance of the area, which includes two layers of architecture from different time periods. The first layer is the Byzantine layer (figure 16 illustrates this original situation and figure 17 illustrates the current situation), which includes the Hagia Irene. It lies six to eight meters below ground level, and is still partly buried under the sand layer that was placed over it during the Ottoman period. The second layer is the Ottoman layer, which is also the current ground level. An analysis has been made (Figure 18) to identify these two layers.

### 3.2 Connection is lost

An important characteristic of Hagia Irene's urban context is the drastic difference between the current surroundings and the way they were initially. Most of the connections with the surrounding urban situation have been cut off: the Topkapi Palace wall of the first courtyard, the closure of the doors in the towers which are parts of this wall, the covering of ruins and its urban setting with sand, and the filling of doors and windows of the Hagia Irene. Because of the extent of these changes, and because of the superimposed Ottoman layer, it would be very difficult to recover these urban connections.

### 3.3 Rich environment

The historical richness of Hagia Irene's surroundings (figure 15) attract many tourists. In addition to museums that are surround the Hagia Irene, the church itself is located in the courtyard of one of the most visited sights: the Topkapi Palace. South of the Hagia Irene, there is the Karakol Restaurant, built on the ruins of the Sampson hospital. There are also two doors in the defence wall of the Topkapi alace that previously connected this part of the courtyard with the Soguk Cesme street (a quiet street seldom frequented by tourists) and the former mansions along the other side of the wall. These wooden former mansions have been transformed into hotels, restaurants and a library. The wall of the Topkapi Palace has towers between the walls where some of the doors are still visible between the former mansions. It is not clear if there is still a possibility to enter the terrain of the Topkapi Palace through the old doors. Towards Alemdar street, there is a restaurant placed in a former cistern called Sarnic Restaurant. There are also several small cafés and shops.

# ISTANBUL

EXTRACT FROM TOWN-PLANNING PROJECT ESTABLISHED BY RENAL PROST IN COLLABORATION WITH ENGINEERS AND ARCHITECTS OF THE İMRAK BÜROĞU OF İSTANBUL (1928 - 1947).

*THE ARCHAEOLOGICAL PARK SHALL OCCUPY THE SURROUNDINGS OF TOP KAPU SARAY AND THE SITE OF A DISTRICT OF THE CITY PARTLY DESTROYED BY FIRE, BURNED BY ST SOPHIA, AT MEİDAN, THE SEA AND THE LITTLE ST SOPHIA.*

*THE PRINCIPAL MONUMENTS SUCH AS ST SOPHIA, SULTAN AHMET, ST IRENE, SOKULU-MEHMET-PASA, AND WILL EMERGE FROM THIS AREA AFTER THE APPROACHES OF THE GREAT CIRCUS HAVE BEEN CLEARED AND ARCHAEOLOGICAL RESEARCHES HAVE REVEALED THE REMAINS OF THE ANCIENT ACROPOLIS, OF THE FORUM AND THE IMPERIAL PALACE WITH ALL ITS ANNEXES.*

- 1 TOP KAPU SARAY - PALACE OF THE SULTANS.
- 2 AYI SOPHIA (ST. SOPHIA) BYZANTINE ART MUSEUM.
- 3 SULTAN AHMET MOSQUE.
- 4 ST. IRENE - HOLY TRINITY.
- 5 KÜÇÜK AYI SOPHIA (LITTLE ST. SOPHIA) SS. SERGIUS AND BACCHUS.
- 6 SOKULU MEHMET PASA MOSQUE.
- 7 FINESS MOSQUE.
- 8 ÇİLEKİ KÖK POTTARY MUSEUM.
- 9 AY MEİDAN - GREAT CIRCUS.
- 10 SUB-BASINMENT OF THE GREAT CIRCUS (SPHENDONE).
- 11 REMAINS OF İBRAHİM PASA PALACE.
- 12 BİN BİN DİRİLİŞ ÇİFTLİK (TWO THOUSAND AND ONE COLUMNS).
- 13 YENİ BÜYÜK SARAY ÇİFTLİK.
- 14 HANIKAH OF SİRAK.
- 15 SULTAN AHMET II FOUNTAIN.
- 16 MUSEUM OF ANTIQUITIES.
- 17 MEDRESE.



Figure 15 Archaeological park (Türel, 2014)



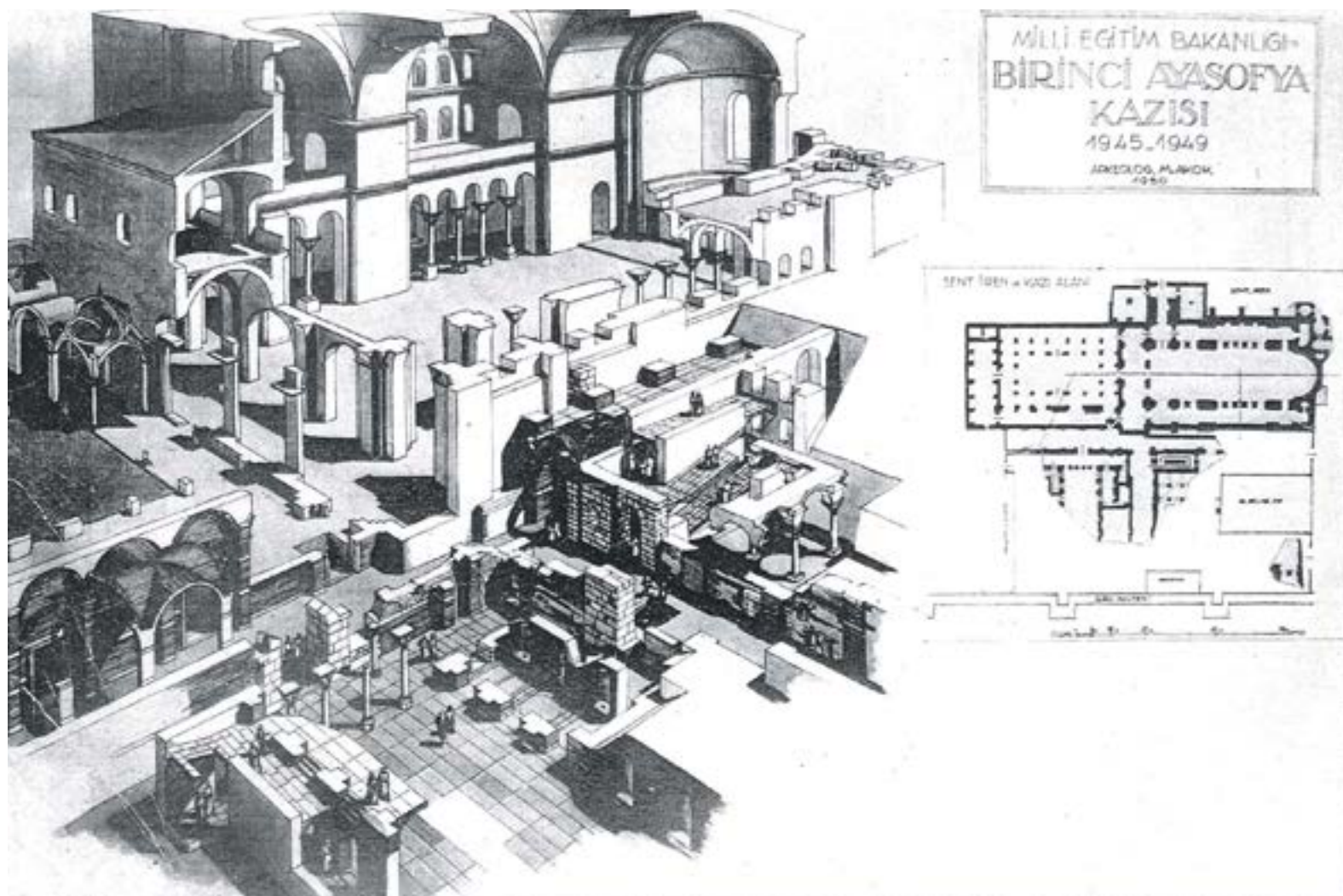
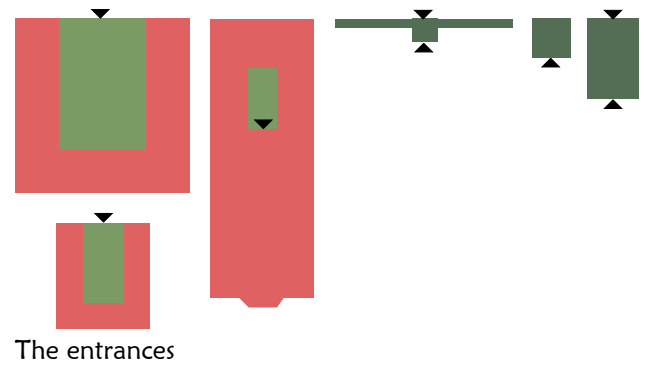
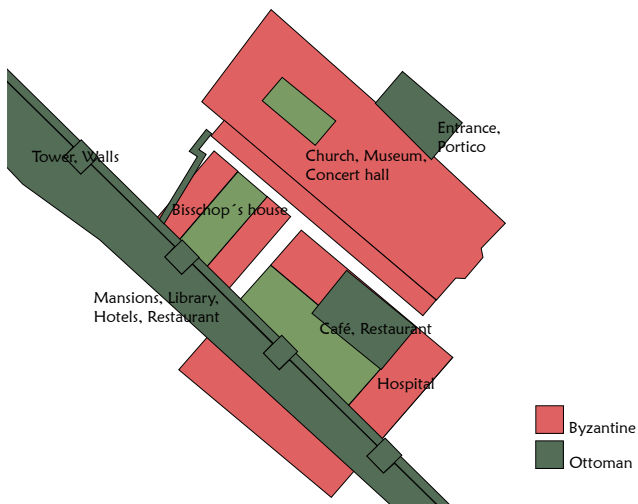


Figure 16 The Byzantine layer (Akok, 1950)



Figure 17 The current situation of the Byzantine layer on the south of the Hagia Irene (photo taken by author)

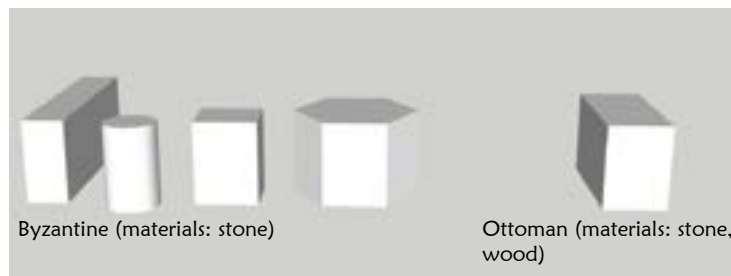




\* Byzantine buildings include cisterns expect for the Church  
The buildings



The buildings and their ground level



Geometries



Byzantine; thick walls, bows, columns, dome



Ottoman; thick walls

Construction



Byzantine



Ottoman

Windows; their placement and characteristics



Layers of time



Byzantine



Ottoman

Doors; their shape and decoration

Figure 18 Analysis of the location (photo's and illustrations by author)

## 4 New possible functions

### 4.1 Approaches Concerning the Re-Use of Churches

In order to approach the repurposing of a church and its surroundings in a way that will add value, it is important to protect and respect their characteristics. These include the urban and architectural aspects, but also the opinions of different affected parties on reuse. In the following section, I outline two approaches to repurposing: one according to Schout and Kellendonk architects, and the other according to the opinions of relevant parties.

Schout and Kellendonk's approach to repurposing has been chosen because of the particular attention they give to the surroundings of historical buildings in addition to the building itself. They begin by analysing several aspects: the urban and architectural characteristics of the building and its surroundings, the needs of people, and the opportunities and problems that certain functions on that location have. This information is then analysed using a matrix in order to find a new suitable function, and to identify the problems and opportunities that various functions may have. They claim that multifunctionality is often profitable, and should be taken into account. (Üncü, 2014)

The second approach considers the relevant parties: what they think might be suitable for a religious building. This aspect is particularly important for the repurposing of a church because of the important value that it holds for Christians. Certain Catholic dioceses in the Netherlands, for instance, believe that the new functions in the categories 'religious + multifunctional reuse' and 'religious functions' ought to be suitable for reuse of churches. (Üncü, 2014) Later on in this chapter I will explain more on the point of view of the Orthodox Christians on the reuse of churches. The opinions of these parties are important for achieving a respectful reuse that embraces the historical and religious meaning of a church.

In addition to urban functional analysis and the consideration of the owners' opinions, I believe that in order to embrace the church's history and to continue its story, emphasis should be placed on the experience of the space. The experience of the old should tell the story of the building and its history as a whole. It should not be disrupted by new additions; on the contrary, new additions should serve the experience of the old, whether these be visible or invisible characteristics, such as the routing and the peaceful atmosphere. Preserving the historical qualities – even emphasizing them – should be given priority.

### 4.2 Opinions of Relevant Parties Concerning the Re-Use of the Hagia Irene

As explained above, the opinions of a building's owners and other affected parties are important for achieving a respectful and appropriate re-use. In this section, the views of Istanbul's Orthodox spiritual leaders and of Istanbul's architects are explained.

#### 4.2.1 The views of Istanbul's Orthodox spiritual leaders

Orthodox spiritual leaders in Istanbul say that a church is meant for the worship of God, and it shouldn't be used for anything else. It is built to hold ceremonies for this purpose, and the interiors are informed by the instructions that God gave to Moses for the tabernacle. When a church is built it is consecrated, making it a holy place. For these reasons, the leaders don't want churches to take on any other function, even if they are no longer in use. One of the leaders (who wishes to remain anonymous) says that he hopes that the Hagia Irene might one day be used again by Christians living in Istanbul. He expressed his disappointment that churches are being re-purposed, one of them taking on a function as inappropriate as a stable for animals. A building designed for worship, he says, should not be used for anything else – whether it be a synagogue, a church or a mosque.

However, a church can be used for events that are suitable to the traditions and customs of the church. Another leader (who also wishes to remain anonymous) mentioned the example of a former Byzantine

<p>- <i>The Netherlands</i>  <i>Guidelines for a good design for the reuse of a monastery</i>  General guidelines</p> <ul style="list-style-type: none"> <li>- Do justice on the cultural historical meaning</li> <li>- Strive after the conservation of the historical building substance</li> <li>- Attention for special components</li> <li>- Bespoke</li> <li>- Reversibility</li> <li>- Quality of design and craft</li> </ul> <p>Attention for spatial aspects</p> <ul style="list-style-type: none"> <li>- The monastery garden, the wall</li> <li>- Cemeteries and graves on monastery territories</li> <li>- The courtyard of the building</li> <li>- The chapel</li> <li>- Hallways, staircases and monastery cells</li> </ul> <p>Attention for technical aspects</p> <ul style="list-style-type: none"> <li>- Accession of light</li> <li>- Fitting in of technical facilities</li> <li>- Sustainability</li> <li>- Fire safety</li> </ul> <p>Reuse of monasteries (RCE, 2013)</p>	<p>- <i>The Netherlands</i>  <i>Guidelines and directives for a good plan for the reuse of a church</i>  Guidelines for a good design</p> <ul style="list-style-type: none"> <li>- Do justice on the cultural historical meaning</li> <li>- Strive after the conservation of the historical building substance</li> <li>- Attention for special components</li> <li>- Bespoke</li> <li>- Reversibility</li> <li>- Quality of design and craft</li> </ul> <p>Take the existing space as an inspiration source</p> <ul style="list-style-type: none"> <li>- The whole space stays intact</li> <li>- The separate incorporation</li> <li>- Use spaces next to the main space</li> <li>- Vertical splitting</li> <li>- Horizontal splitting</li> <li>- The box in the church</li> <li>- Keeping of sightlines</li> <li>- 'Brimming'</li> <li>- Building extension and outbuilding</li> <li>- Partly demolition</li> </ul> <p>Take incidence of light a central value for the design</p> <ul style="list-style-type: none"> <li>- Existing light</li> <li>- New light</li> </ul> <p>Conservation (parts of) the inventory</p> <ul style="list-style-type: none"> <li>- Organs</li> </ul> <p>Take into account the possible archaeological values</p> <p>Take into account the required technical facilities in an early stage</p> <ul style="list-style-type: none"> <li>- Energy saving</li> <li>- Thermic comfort</li> <li>- Fire safety</li> </ul> <p>Reuse of churches (RCE, 2011)</p>
<p>- <i>England</i>  <i>Conservation Principles</i>  Principle 1: The historic environment is a shared resource  Principle 2: Everyone should be able to participate in sustaining the historic environment  Principle 3: Understanding the significance of places is vital  Principle 4: Significant places should be managed to sustain their values  Principle 5: Decisions about change must be reasonable, transparent and consistent  Principle 6: Documenting and learning from decisions is essential</p> <p>Conservation Principles (Drury, 2008)</p>	<p>- <i>Turkey</i>  <i>The three projects restoration architects need to prepare</i>  A Survey</p> <ol style="list-style-type: none"> <li>1 Survey drawings (1:50 scale)</li> <li>2 Drawings – materials (1:50 scale)</li> <li>3 Report</li> <li>4 Drawing – damage, deterioration</li> <li>5 Survey report</li> <li>6 Photo album</li> <li>7 Static report</li> </ol> <p>B Restitution</p> <ol style="list-style-type: none"> <li>1 Restitution report (explaining what you did and why you did it)</li> <li>2 Art history report</li> <li>3 Time period analysis</li> <li>4 Restitution project (sometimes more than one)</li> </ol> <p>C Restoration</p> <ol style="list-style-type: none"> <li>1 Material report</li> <li>2 Static report/project</li> <li>3 Restoration project</li> <li>4 Intervention sheet</li> </ol> <p>(interview)</p>

Figure 19 Guidelines and the projects (Illustration by author)

monastery that is now used for the Patriarchate of the Armenians in Istanbul. Next to the church there are two chapels that still function as such, but both of them are also used for other purposes. One is nowadays also used as a salon where people can gather after services in the church. The other one was not used and stayed empty and needed major renovations. When Istanbul became the culture capital of the world in 2010 this was a chance to restore it and save it. By working together with the agency of the Istanbul Cultural Capital City of 2010, this church now has two statuses: as a church, and a cultural centre. The management should be approached to ask for permission to use this church and culture centre for an activity. For example, a classical concert can be an activity which will be allowed to be held here. At the same time, whenever it is requested, the curtains will be opened up and a service can be held, thus retaining its original function as a church.

A similar perspective is held by the Orthodox spiritual leaders regarding the Hagia Irene: other programs can be accepted, as long as they respect the church's atmosphere or ambience. A concert is allowed to be held, but a café, a masked ball or a fashion show is, in their opinion, not suitable, even though today the church might be used as a museum. In 2000, a circumstance occurred where the leaders were not pleased by the event for which the church was to be used. There was a ball planned in the Hagia Irene, and the Patriarch Bartholomew I of Constantinople protested and said that even though the Hagia Irene no longer has the status of a church, it has functioned as one in the past, declared that holding a ball in it is inappropriate. He wrote a letter, and the plans for the ball were cancelled.

Although the Orthodox spiritual leaders restrict the kinds of new functions that churches can adopt, they understand that money is needed to keep churches such as the Hagia Irene. Therefore, they suggest, instead, to focus on the church's surroundings. One of the leaders states that the complex of buildings adjacent to the church can be used or adjusted to gain money to support the church. Selling gift products, a bookstore or a café near the church support it financially. A library, bookstore or a printing company, or selling images of saints to support the church (as is done at Notre Dame in Paris) are sensible functions. However, making a disco, for example, is not a sensible function.

#### 4.2.2 The views of Istanbul's Architects

Like the Orthodox spiritual leaders, the architects that I interviewed in Istanbul don't believe that converting a church into a mosque, as the government has done in many cases, is an appropriate reuse because of its history and the difference in interior characteristics. While the government believes it to be an appropriate repurposing (Ahunbay, 2013; Altinyıldız Artun, 2013), Istanbul's architects argue that the new function should derive from a thorough understanding of the history and space of the building itself. Once these aspects have been understood, the next step is to make a good consolidation and structural restoration. Only then can one begin to ask the question of how to reuse it. The most important aim, the architects say, is to continue the building's life. However, this approach does not come without challenges.

One of the challenges of restoring Byzantine churches is the lack of restoration skills. As a result, many of these monuments have fallen into disrepair. This situation is partly the result of what the architects deem to be a problematic implementation of laws relating to preservation and restoration. While the government's laws currently serve as the main channel for the implementation of restoration, the preservation criteria of Unesco and Icomos should be taken more seriously, and should act as the main guide for the preservation and conservation of historic buildings. Unlike the governments of the Netherlands and the United Kingdom, Turkey's government has not published guidelines for restoration, but requires projects (these three countries' guidelines and the reports are compared in figure 19).

The Unesco and Icomos charters on cultural heritage preservation require an understanding of Byzantine churches in order to better preserve these monuments. It is important to take into account, for instance, the various sizes and decorative programs of the churches. Re-use should be based on criteria derived from the plan, elevation, decorative features, original structure and visual value of the church.

The Hagia Irene should, in a similar way, be researched and understood before considering its re-use. “When thinking about assigning a new use for the Hagia Irene,” says one architect from Istanbul (who wishes to remain anonymous), “you need to consider the integrity of its interior space, the structural and decorative elements which envelop the interior. The original elements need to be exposed and perceptible. Additions should be minor and reversible.” She also mentions that the Hagia Irene is under consideration for re-use because of the earthquake risk in Istanbul, and several interventions have been proposed, with engineers trying to counteract the weaknesses of the structure.

## 5 Two case studies: Re-purposing of historical buildings while preserving their original characteristics

The opinions expressed by the Orthodox spiritual leaders suggest that the primary intervention should be made in the Hagia Irene's surroundings, instead of in the church itself. Istanbul's architects emphasize the caution with which new functions and structures should be introduced into a church. These views suggest that intervening on the ruins to the south of the church might add the most value to the location. Two projects that deal with ruins are therefore analysed to gain insight into how the ruins' characteristics can be preserved by an intervention.

### 5.1 The Szathmáry Palace

The Szathmáry Palace in Hungary is composed of various parts that have changed in function throughout history. It was originally the Bishop's summer residence in the early 16th century. It had two stories and an inner patio, and was made of local stone. The palace has since been adjusted under different emperors. Today, it serves as a stage for a summer theatre.

The new design for this summer theatre stabilizes and strengthens the old part of the building, repairs the floor levels, attaches and fills the eroded parts, and refers to the past. (divisare, 2012) The addition of a staircase also provides a view on the surrounding natural landscape (figure 20). Corten steel elements are added to form a stage for the theatre, and boxes are placed around it to provide sitting places from which to view the surroundings and watch the play.

MARP, the design team, state that this L-shaped steel staircase structure is not meant to be a formal reconstruction. The architects did not intend to 'complete' the ruin with this design. Therefore it does not directly imitate the original ruin. Instead, they wanted to create a mass in the place of the former wall corner, strengthening the ruin's character by creating a contrast between the new and the old. The stair case, together with the theatre's support spaces, are contained within a deep wall that bends to form a corner, enclosing a "room" that was once part of the palace. (divisare, 2012)

The addition also refers to the past by accentuating the borders of the former walls. However, doesn't strictly follow or contrast the old grid of the building, but does something in between. The division of the floorplan derives from the former use and refers to it by different materials and colours. For instance, the original floorplan is marked with the wall placement. Referring to the past is also done by written inscriptions on the new structure and openings in the new construction through which the old construction can be seen. Light is also used to accentuate the site's characteristics. In this way, the new addition contrasts with the old structure, while at the same time bringing attention to it.

As well as referring to the past, the addition also sought to unite it with the present in order to create a unified whole, thereby regaining part of its original character. The rearrangement of the surroundings creates a triple terrace system that once again gives definition to the centre of the Tetttye Valley in the city. (divisare, 2012)

### 5.2 Astley Castle

Astley Castle, like the Szathmáry Palace, is also composed of various historical fragments. This medieval castle was used by several queens. The upper level served as living quarters, where the owners could cook, dine and spend time in the living room. (Townsend, 2013) Nowadays the building is a two-story house within the ruin of the ancient castle (figure 21). The original function is the same as the new function. (Townsend, 2013) This functional continuity makes the project special and appreciated; indeed, the best new function is often the original function. (Harris, 2013)

Witherford Watson Mann Architects' strategy for intervening in the ruined castle strikes a balance between making the building suitable to live in, and preserving its experience as a ruin. This balance was achieved by adding a new addition of concrete, steel and brick construction that acts as a stabilizing element for the ruin (Harris, 2013). Thin bricks fuse with the ruin's jagged edges, and fill



certain gaps, making the ruin solid again (Townsend, 2013). This new addition effectively frames the old ruin, bringing attention to it. It does so by using the original brick material, but in a brighter colour, bringing attention to the old, worn stones. The formal simplicity of the addition also contrasts with the ruin.

In addition to framing the ruins, the intervention gives importance to the experience of the surrounding landscape by placing the bedrooms on the ground floor and the living and dining spaces upstairs, where the extensive view can be enjoyed through large, modern window frames (Harris, 2013). As well, two open courtyards are left as a ruin, with added structure that provides stability. (Townsend, 2013).

The intention of the intervention is to allow the building and its history to be experienced. (Townsend, 2013). The architects have done so by using a simple structure that strengthens and brings attention to the ruins, and by extending the experience to the surrounding landscape.



Figure 21 The Szathmáry Palace (Steph, 2012)



Figure 22 Astley Castle (Minoli, 2013; Steph, 2012)

## 6 Conclusion and recommendations

### 6.1 Conclusions

#### 1. *“What are the specific characteristics of the Byzantine church of Hagia Irene in Istanbul?”*

Together with the Hagia Sophia, the Hagia Irene formed the Great Church. The two buildings had a very important role throughout the history of the Byzantine era, and together served as the main church of the empire. Emphasizing this connection in a new intervention would therefore make the experience of both churches more similar to how it had originally been.

Another important characteristic is the presence of various historical layers or “layers of time” that are visible in the church, which tell the story of natural disasters and changing emperors during the Byzantine and Ottoman periods. These layers are valuable because they represent the history of the building (and of Istanbul), and form its identity. The new addition would tell the building’s story more clearly if it emphasizes these layers.

The church’s decoration is also an important character defining element, even though only small portions of it have been preserved. Both the exterior brickwork, with its simple forms and harmonious proportions, and the more intricate and materially rich interior mosaics, are important for the Hagia Irene’s identity as a Byzantine church.

Many elements have been covered or filled, including doors, windows, and the synthronon, which is partly covered by a stage. Blocking some of the natural light from entering through the windows diminishes the experience of what is arguably one of the church’s most beautiful characteristics. To restore the way that natural light had previously animated the interior, such fillings should be removed. As well, uncovering some of the entrances would restore the building’s relation with its surroundings.

#### 2. *“What are the specific characteristics of the surroundings of the Byzantine church of Hagia Irene in Istanbul?”*

The Hagia Irene is situated in an archeological park, where both Byzantine (six to eight meters below ground level) and Ottoman (ground level) structures are present. In order to better experience these historical layers that make this location unique, parts of the sand layer should be removed, and vertical and horizontal connections with the ruins should be made.

The defense wall of the Ottoman Topkapi Palace, which separates the Hagia Irene from the Hagia Sophia, is also an important element of the site, but one that obscures a historically important connection. As mentioned above, restoring this connection would allow for a more authentic experience of the Hagia Irene in relation to its surroundings.

Hagia Irene’s surroundings are also characterized by numerous tourist attractions. These include the ruins of the Hospice of Sampson and Bishop’s house, and the Karakol restaurant and café, all located within the courtyard of the Topkapi Palace. Outside the courtyard wall, tourist attractions include Ayasophia Konaklari (houses along the outside of the courtyard wall), the Sarnic Cistern Restaurant and the Istanbul Library. It might therefore be appropriate for a new addition to the site to focus its attention on tourists, giving them a different point of view on the location’s history.

#### 3. *“What are the possible approaches for re-purposing the Hagia Irene and its surroundings?”*

According to Istanbul’s architects and to the Unesco and Icomos charters on cultural heritage preservation, a monument’s specific characteristics should be studied before a new intervention is made. The most important aim for them is to extend the building’s life in a way that respects its history.

Schout and Kellendonk also claim that allowing for multifunctionality would give a new intervention more likelihood of being profitable. While multifunctionality can add feasibility, however, Orthodox spiritual leaders believe that a place of worship “shouldn’t be used for another purpose than what it is built for.” That being said, it is acceptable to add functions to a church’s surroundings that are

“appropriate to the environment of the church”. Istanbul’s architects hold a similar view, one of them explaining that “you should not change [the church’s] design or impair what has been preserved from the original building.” She continues: “the additions should respect the original structure, not damage its structure, looks and visual appreciation.” The approaches of Istanbul’s architects and Orthodox spiritual leaders are in opposition with that of the government, which sees the conversion of churches into mosques as a good re-purposing strategy.

If, in order to preserve the rich history of the Hagia Irene, the three aspects of history, architecture and people need to be taken into account, then the views expressed by Istanbul’s clergy and architects seem to be the most reasonable. Re-purposing a church as a mosque, on the other hand, requires too many changes that would damage certain character-defining elements, and it is not in line with the church’s history.

Taking the views of Istanbul’s clergy and architects into account, and given the necessity to introduce new adjustments to the church and its surroundings if it is to be revived, it can be concluded that new functions would be most appropriate if introduced in the church’s surroundings. New additions within the church itself, then, would serve to bring out the original characteristics of the building. It should be stressed, as well, that any new functions that are introduced should not be in conflict with the church’s ambience and Byzantine identity. Instead, the new addition should facilitate the experience of the building as it used to be.

*4. “How can we preserve the characteristics of the church and its surroundings when repurposing and what should be taken into account?”*

This question has been approached by analysing two case studies: the Szathmáry Palace in Hungary, and Astley Castle in the United Kingdom, both of which are new additions to ruins.

The addition to Szathmáry Palace preserves the characteristics of the old building by adding a new layer – a staircase and a theatre stage – that contrasts with the ruins in its materialization, but that refers to them in various ways, such as by form and circulation. The new structure also emphasizes the view and relation to the surrounding urban space by adding a terrace.

In a similar way, the new addition to Astley Castle introduces a new layer that refers to the original composition of the structure. While this new layer subtly distinguishes itself from the ruins in its materialization and formal simplicity, it is composed in a way that it acts as a framing mechanism for them. As well, the new addition structurally strengthens and stabilizes the ruins. Functionally, the new addition is continuous with the building’s original use, and retains the visual connection to the surroundings by placing the living quarters on the first floor, as they originally were.

From these case studies, it can be concluded that in order to preserve the characteristics and identity of ruins or old buildings, it is important to refer to their past when planning new additions.

*“How can we preserve the specific characteristics of the Byzantine church Hagia Irene in Istanbul when giving it or its surroundings a new function?”*

The research suggests that, while multifunctionality should be provided for, new additions should respect the Hagia Irene’s original function if its specific characteristics are to be preserved. The original function can be respected by strengthening and adding value to the current functions.

As well, to preserve the Hagia Irene’s identity as a Byzantine church, new additions should maintain the integrity of the architectural space, restoring and bringing attention to its character-defining structural and decorative elements. The intervention should be modestly respectful of these elements, strengthening and becoming interwoven with the history of the building and its surroundings.

## 6.2 Formulation of Design Principles

Based on the research, I have concluded that the Hagia Irene’s function should be kept as it is now: as a church, museum and concert hall for classical music. The new intervention should be in line with the

church's architectural characteristics and the characteristics of its surroundings. It should also preserve the peaceful atmosphere of the Hagia Irene and of the ruins, emphasizing their contrast with the surroundings.

The new design should tell the history of the church by framing its "layers of time", and by restoring the original connections with its surroundings, while at the same time connecting it to the present situation. It should respect and draw attention to the old, while meeting the needs of the current situation. In this sense, the intervention can be seen as a new layer that continues the story of the Hagia Irene to the present day, referring to the past both literally and figuratively. It can be understood as a stage from which the church's story is told and experienced.

The intervention aims to address three areas: the church interior, the adjacent ruins, and the overall surroundings. The character-defining elements of the church's interior should be more exposed, particularly the gallery, the area around the synthronon, and the original Byzantine floor. The intervention should also negotiate the level difference between the current ground floor and the level of the Byzantine ruins and church. Thirdly, adding a pavilion within the ruins would invite tourists to experience them in a more direct way. Furthermore, the visual connection between the site's main historical buildings, ruins, and principal circulation routes should be restored.

Given the intended scope of the intervention, it is important to strive for achieving unity between its various elements, so that the design will read as one whole. These elements, together, should work with each other to frame the site's "layers of time".

## Literature

- Ahunbay, Z. (2012). Istanbul: A World Heritage site. Ankara: Sistem Ofset Basım Yayın San. ve Ticaret Ltd. S.
- Ahunbay, Z. (2013). 2013'ün Tartışmalı Yeniden Kullanım ve İhyaları. Mimarlık Dergisi.
- Akok, M. (1950). Milli eğitim bakanlığı Birinci ayasofya kazisi 1945\_1949. İstanbul: German Archaeological Institute.
- Altınyıldız Artun, N. B., Z. (2013). Kiliselere Osmanlı Restorasyonu. e-skop.
- Ar, B. (2013). Osmanlı döneminde Aya İrini ve yakın çevresi. İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul.
- divisare. (2012). Reconstruction of the Szatmáry Palace. from <http://europaconcorsi.com/projects/211462-MARP-Reconstruction-of-the-Szatm-ry-Palace>
- Drury, P. M., A. (2008). Conservation principles Policies and guidance For the sustainable management of the historic environment. London.
- Freely, J., & Cakmak, A. (2004). Byzantine Monuments of Istanbul. Cambridge: Cambridge University Press.
- Harris, P. (2013). A VERY grand design! Stunning holiday home built in the shell of a ruined 12th century castle wins Britain's top architecture award. from <http://www.dailymail.co.uk/news/article-2434625/VERY-grand-design-Holiday-home-built-Warwickshires-ruined-Astley-castle-wins-Riba-Stirling-Prize-architecture.html#v-2698823397001>
- IstanbulMetropolitanMunicipality. (2008). Before Conquest of Istanbul. from <http://www.ibb.gov.tr/sites/ks/en-US/0-Exploring-The-City/History/Pages/BeforeConquest.aspx>
- Kirimtayif, S. (2001). Converted Byzantine Churches in Istanbul Their Transformation into Mosques and Masjids. İstanbul: Zero Produksiyon Ltd. .
- Mathews, T. (2001). The Byzantine Churches of Istanbul. from <http://www.nyu.edu/gsas/dept/fineart/html/Byzantine/index.htm?http&&www.nyu.edu/gsas/dept/fineart/html/Byzantine/home.htm>
- Minoli, M. (2013). ASTLEY CASTLE: Una villa nel castello diroccato!! 4S blog.
- Müller-Wiener, W. (1977). İstanbulun Tarihsel Topoğrafyası. Tübingen: Wasmuth Verlag.
- RCE. (2011). Een toekomst voor kerken Handreiking voor het herbestemmen van vrijkomende kerkgebouwen. Eindhoven.
- RCE. (2013). Een toekomst voor kloosters Handreiking voor het herbestemmen van kloostercomplexen. Werkendam.
- Steph. (2012). Ruined Renaissance Palace Gets Rusted Steel Addition. from <http://weburbanist.com/2012/09/13/ruined-renaissance-palace-gets-rusted-steel-addition/>
- Townsend, L. (2013). Stirling Prize: Astley Castle. from <http://www.bbc.com/news/magazine-23961842>
- Türel, I. (2014). Heritagisation of the "Ottoman/Turkish House" in the 1970s: Istanbul-based Actors, Associations and their Networks. European Journal of Turkish studies.
- Üncü, P. (2014). De herleving van de rijkdom van de kerk met een nieuwe functie. TU Delft, Delft.
- Unknown. Blick in den naos mit aufgedeckten mosaik. İstanbul: German Archaeological Institute.
- van Dooren, E. (2013). Making explicit in design education: generic elements in the design process. International Journal of Technology and Design Education.
- Van Millingen, A. (1912). Byzantine churches in Constantinople Their history and architecture. London: Macmillan and co.