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After Constantine: Stories from the Late Antique and Early Byzantine Era, Vol. 5, No. 1 (Jan. 2025), pp. 27–38

DOI: 10.0912/AC.2024827625

Published by: Orthodox Academy of Crete

Stable URL: http://www.afterconstantine.com

Accessed: 01/01/2025

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Synthronon Typology in Byzantine Architecture

Erkan Kaya*

ABSTRACT

This research aims to establish a typology of synthronons observed in Byzantine architecture. Rather than providing detailed information or listing all examples in Anatolia, the study focuses on conveying all distinctive features and types through a few representative examples, clearly understood from the provided typology drawing. Additionally, a synthronon type specific to Syrian churches, absent in Anatolian examples, has been included in the typology. The research is limited to churches from the Early and Middle Byzantine Periods (4th - 12th centuries), primarily located in Constantinople and Anatolia. Consistent findings regarding synthronon dimensions have been obtained, indicating that synthronons within the Byzantine Empire, except for those in Anatolia and Syria, share typological similarities. The established typology, based on identified types in Anatolia, exhibits characteristics applicable to Byzantine church architecture as a whole.

Keywords: Synthronon, Typology, Kathedra, Church, Byzantine Architecture.

In Byzantine religious architecture, the apse, synthronon, and cathedra, significant architectural components for rituals and ceremonies, have been terminologically identified to the present day. However, a typological study on the synthronon, which encompasses different types including the cathedra, has not been conducted in detail. In the context of Byzantine religious practices and liturgy, a synthronon, particularly one dominating the central focus of all activities, assumes a crucial role. Therefore, the fundamental approach of this research involves evaluating existing studies on synthronon types in Byzantine architecture and establishing a synthronon typology covering the entire Mediterranean world, with a focus on Anatolia.

Approximately 140 churches in Anatolia, where the synthronon has survived to the present day, have been included in the research, leading to the identification of 21 different synthronon types distinguished by several specific features. However, most of these differences should be considered as variations of architectural practices regulated by regional influences, rather than contributing significantly to typological diversity. When all identified characteristics are evaluated, synthronon types in Anatolian churches have been grouped into 9 typological categories due to distinct features and differences. Upon comparison with a group of churches in Greece,[1] a synthronon typology specifically tailored to Anatolia has been identified, differing from the Greek types.[2] Considering the types identified for synthronons in Greek churches, the single-step synthronon type is qualitatively identical to the single-step synthronon with a cathedra. In the context of Byzantine church architecture, it is expected that each church would have a cathedra. The cathedra can either be fixed in the synthronon or can be portable. However, if a portable cathedra is used in the synthronon during the ritual, it implies that the synthronon

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has a cathedral. Therefore, the single-step Synthronon Type and the Synthronon with a Single-Step Cathedra, defined as two separate categories in the Greek typology, possess the same characteristics.[3] The same applies to the Multi-Step Synthronon and the Multi-Step Synthronon with Cathedra. Additionally, in types designated as having the cathedra in the apse, while the synthronon symbolically maintains its presence as a narrow horizontal ledge in the apse niche in most structures, its functional use has been lost, as a single cathedra placed in the center of the apse continues to reflect the dominance and divine power of the bishop during the ritual. Thus, the synthronons in Greek churches, grouped under 9 headings, fall into 6 types with the parallel characteristics mentioned above. Except for the 3 types that share the same characteristics, the remaining types, including narrowing synthronons at the end of the apse, multi-step corridor synthronons, basin types, and synthronons with cathedrals located to the south of the naos, can be considered as different synthronon types.

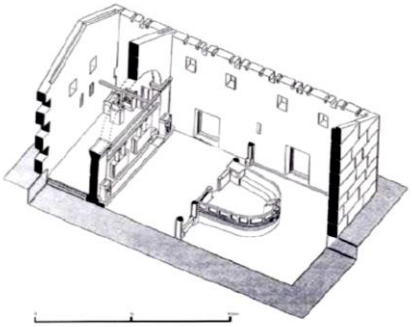
The approach that can be considered as quite sufficient typological classification for Greek churches indicates the necessity of different classification approaches for churches in Anatolia. For instance, no equivalents to the Basin Synthronons mentioned in Greek churches have been identified in Anatolian churches. However, this does not imply that the Basin type is absent in Anatolia. The vast majority of synthronons in Anatolian churches have survived to the present day in a state of near-total destruction. This destruction sometimes reflects natural disasters such as earthquakes and the subsequent reconstruction process, while some forms of destruction can be interpreted as the inability to reach salvaged materials.

Typological differences have emerged due to various factors such as the size of the church, the application of traditional rituals, the usage of sacred spaces within the church, and even the location of the church. Therefore, the regional context of liturgical traditions practiced in Anatolian churches has directly influenced architectural requirements. The dimensions of central and local churches in regions have been determined by the demographic and economic potential of the area. The sizes of churches have directly influenced the size and number of steps of the synthronon. Upon examining many Anatolian examples, a direct relationship is observed between the radius of the apse and the synthronon, while a clear proportional relationship is also seen between the width and depth of the synthronon. The internal proportional ratio of the synthronon has determined the number of steps and indirectly the type of synthronon. In Anatolian synthronon examples, particularly unlike what is seen in Italian churches, where the apse arch starts where the nave bearers end, it begins inward from the north and south edges according to the width of the nave. The indirect effect of the apse arch arranged narrower than the central nave, has resulted in a narrower synthronon and a podium at the center of the synthronon that is impractical, accommodating only the width and depth of a single step.

Due to the necessity of liturgical traditions, synthronons, expected in every church, have been constructed in different types throughout the Mediterranean world from the Early Byzantine Period to the Late Byzantine Period (Table-1). Local practices are observed in Anatolia, Greece, Italy, Mesopotamia, Syria, Egypt, and North Africa. Some of these types have shown regional characteristics and have remained limited to local applications. The majority of synthronon types seen in Byzantine architecture have similar applications to those found in Anatolian churches. Additionally, there are churches found in Greece that do not have counterparts in Anatolia.

Particularly, independent bemathronon practices found in Syria are considered as region-specific examples (fig. 1). The Trikonchos bema-apsis arrangement mostly seen in Egyptian church architecture is represented by a few examples in Anatolia, mainly in Lycia and Pisidia (fig. 2). In this section where the synthronon typology in Byzantine architecture will be formed, synthronon types will be evaluated by providing different qualities and features for each type. In the creation of the synthronon typology in Byzantine architecture, steps have been primarily considered. In addition, different types have been emphasized through synthronon corridors, platforms, and niches (Table-1). As a result of all detailed evaluations, Anatolian examples with determined characteristics have been compared with examples in the Byzantine world, resulting in the creation of a synthronon typology for Byzantine Architecture containing 10 different types. These types are grouped into ten categories;

Figure 1 Restoration Drawing of the Qirkbiza Ecclesia (4th Century A.D.)
(Yasin 2009, fig. 4.10-4.22.)



1. Single Step
2. Multi-Step
3. Multi-Step with Niches
4. Multi-Step with Corridors
5. Multi-Step with Platforms and Corridors
6. Multi-Step with Pseudocorridors
7. Multi-Step with Platforms
8. Extending from Apsis to West
9. Recessed into Apsis
10. Bemathronon

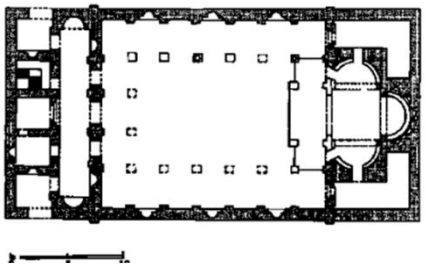
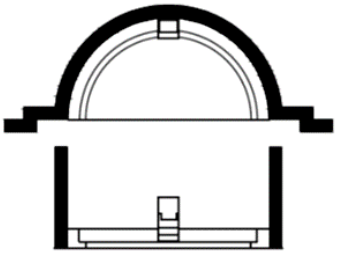
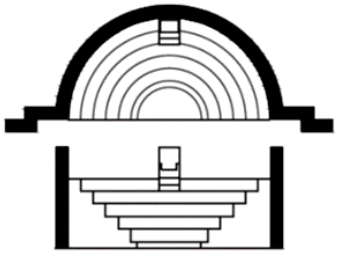


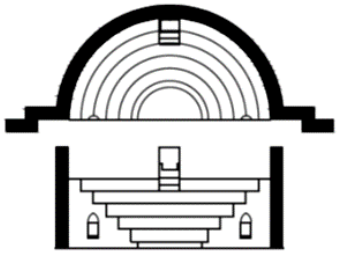
Figure 2 Dendera Church
(5th-6th century A.D.)
(Nußbaum 1965, p. 47, Abb. 26.)



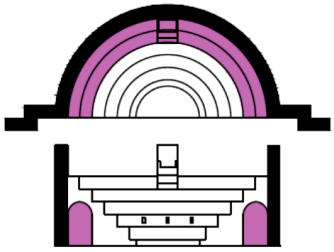
1. Single Step



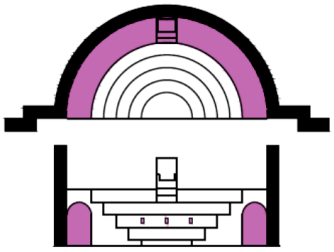
2. Multi-Step



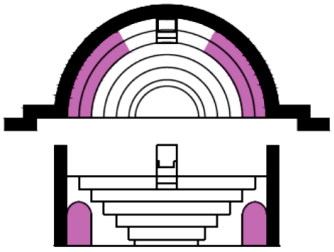
3. Multi-Step with Niches



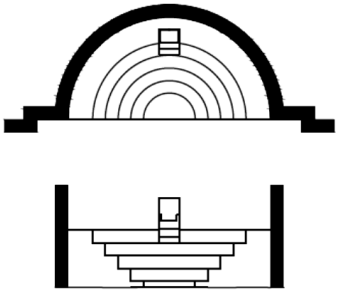
4. Multi-Step with Corridors



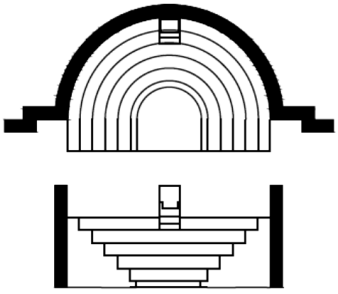
5. Multi-Step with Platforms and Corridors



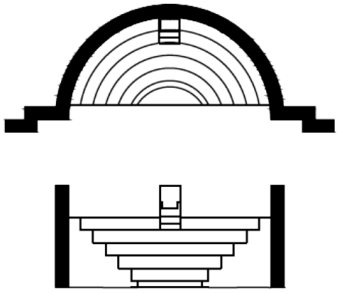
6. Multi-Step with Pseudo-corridors



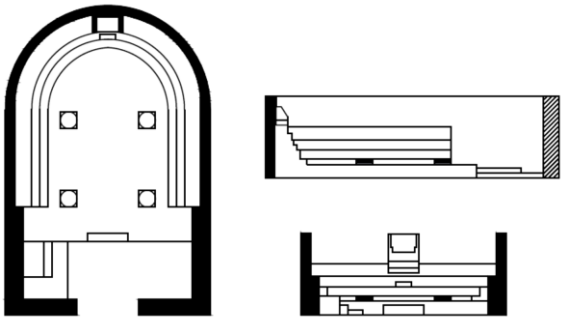
7. Multi-Step with Platforms



8. Extending from Apsis to West



9. Recessed into Apsis



10. Bemathronon

Table-1. Synthronon Typology

SYNTHRONON TYPES

1. Single Step



Figure 3 Synthronon of Church No. 21 at Karadağ
(Eyice 1971; Ramsay & Bell 2008, p. 117, fig. 80.)

Within the arch of the apse, there is a single row of steps with a height ranging between 40-60 cm. This step, arranged directly for the seating of clergy, may sometimes be constructed with a riser of approximately 10-20 cm to allow clergy to place their feet when seated. In some single step synthronons, the seating section narrows towards both ends of the apse arch. As it approaches the western ends of the apse arch, the seating section is functional in creating a cornerless synthronon, maximizing space rather than serving its seating purpose. The corner-rounded construction of the synthronon step is an architectural detail applied to facilitate the comfortable passage of the clergy class moving from the altar to the synthronon, ensuring they do not bump their legs. This is particularly applicable in Early Byzantine churches where the distance between the altar and synthronon is kept quite close, suitable for narrow spaces. However, few examples are found in Anatolia. This could be due to two reasons. Firstly, it may have lost its quality during the transformation from single-step synthronons to three or five-step synthronons, especially if the single-step synthronons were deemed insufficient. The second reason may be that practical usage and functionality were prioritized over space-saving, with a preference for having another clergy member seated at each end. In single step synthronons, a cathedra is expected to be placed at the center of the seating section, whether with or without a riser. The cathedra is often seen in an arrangement where it is higher than the seating level of the synthronon step and reachable with one or two steps. In some churches, there are also representational synthronons within the apse arch that only accommodate the cathedra, without any arrangement for the clergy to sit. In Late Byzantine churches where liturgical traditions underwent changes, examples with only the cathedra and no synthronon seating section are more common. In this practice reflecting the change in traditional liturgy, there are also synthronons where the cathedra, placed at the center of the apse, is symbolically arranged in the form of a narrow ledge that does not allow sitting within the apse arch (Table-1: 1). The synthronon of the Church No. 21 in Karadağ is an example of this type (fig. 3).

2. Multi-Step

Multi-step synthronons can have 3, 5, 7, or 9 steps. It is expected that synthronons, due to the belief in a single God, have a symbolic arrangement of steps in odd numbers. In Byzantine architecture, synthronons with one, three, five, seven, and nine steps are mostly preferred, with three-step and five-step synthronons being the most common among them. The cathedra placed at the center and the top step of multi-step synthronons traditionally have a seating level higher than the level where the clergy class is seated on the top step. The cathedra can be reached from

the synthronon steps like the clergy class, or in some cases, with a series of steps or intermediate steps leading to a railing or railing-less parapet with less height and width in front of the apse axis. Portable cathedrals, allowing the cathedra to be used in different locations within the church such as the baptistery, may also be present in some multi-step synthronons. In some multi-step synthronons, there is a platform located at the center of the synthronon, corresponding to the top or one of the upper steps, where the cathedra is positioned (fig. 4). On the platform located at the center of the synthronon, traces of the dowel or different marks where the cathedra was placed can be seen, as well as platforms with a flat surface. The cathedrals used in such synthronons can be made of transportable materials like wood or monolithic stone. Examples of monolithic stone cathedrals are available today. However, wooden cathedrals, with a lower likelihood of reaching the present day, may have been transferred to other churches and completed their lifespan in later periods (Table-1: 2). The synthronon of the Bishop's Church at Arykanda Arif Castle is an example of this type (fig. 5).

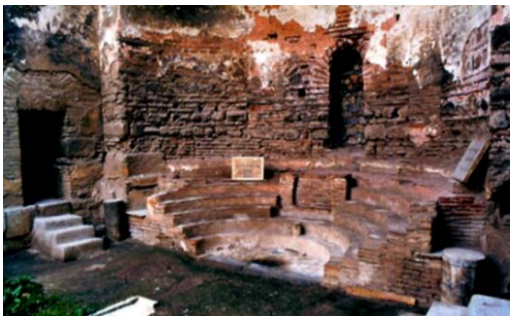


Figure 4 Synthronon of the Hagia Sophia Church in Iznik



Figure 5 Arif Kale Bishopric Church of Arykanda (Akar 2022, p. 312, fig. 57.)

3. Multi-Step with Niches

In multi-step synthronon types, the section of the synthronon filling and steps is visible from the naos. The western facades, clearly visible from each nave, are usually made of cut stone or brick material, although they may be covered or plastered. In some cases, niches are made on the facade to add movement or to eliminate uniformity. Niches may be included for decorative or practical purposes. Niches, commonly seen in 3 or 5-step synthronons without corridors, with or without platforms, are symmetrically placed on the western facade of the synthronon steps. These niches, varying in size, depth, and section in each church, typically contain lighting fixtures, liturgical objects, or icons. Niches can be rectangular, pointed arch, flat arch, or round arch in shape (Table-1: 3). The synthronon of the Hagia Sophia Church in Nicaea is an example of this type (fig.4).

4. Multi-Step with Corridors

Between the apse wall and the steps of the synthronon, there is typically a corridor (kyklion) covered with a barrel vault that is wide enough for one person to pass through. The multi-step and corridor-type synthronon may have been constructed to facilitate movement between the north and south sides of the apse without passing in front of the synthronon. In some multi-step and corridor-type synthronons, depending on the size of the synthronon, openings may be made in the third or fifth step to illuminate the corridor or observe the sanctuary (fig. 6). The frames facing the sanctuary are wide, while those facing the corridor are narrow, and they are mostly used as observation windows. If the frame facing the sanctuary is narrow and the one facing the

corridor is wide, it may be used for lighting purposes or as a corridor niche. The openings can be centrally located or symmetrically arranged in threes or fives. Due to the presence of a corridor, these types of synthronons typically have five or more steps. In a multi-step and corridor-type synthronon arrangement, as expected in every church, there should be a cathedra.

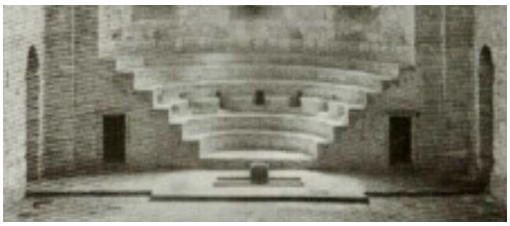


Figure 6 Synthronon of the Hagia Irene Church in Istanbul

The arches of corridor entrances are usually constructed to be compatible with the vaulting system of the corridor, but they can also be made in different forms such as barrel or pointed arches to match the vaulting system of the corridor, such as a rectangular door frame. In corridor-type synthronons, it can be assumed that the entrance to the synthronon corridor is closed with a curtain. It is reasonable to assume that the entrances and mullioned windows of the corridor are closed with curtains when the corridor is not in use or after the liturgy or ceremony, considering the reflection of interior lighting in the sanctuary, physical movement within the corridor, and the reflection of shadows from the door or mullioned window, or when the corridor is occasionally used as storage for large liturgical objects such as long-footed crosses (Table-1: 4). The synthronon of the Church of Saint Philip in Hierapolis is an example of this type (fig. 7).



Figure 7 Synthronon of the Saint Philip Martyrium Church in Hierapolis (D'Andria 2018, p. 93, 109.)

5. Multi-Step with Platforms and Corridors

The type of synthronon that incorporates the features of a multi-step arrangement, a platform, and a corridor is typically characterized by having five or more steps due to its corridor layout. Like in multi-step and corridor-type synthronons, the mullioned windows opening onto the third or fifth step are usually symmetrically arranged in threes or fives. The only difference with this type, which carries the characteristics of a multi-step and corridor arrangement, is that the top step is made deeper, creating a platform between the step where the clergy sits and the apse wall (Table-1: 5). There must be a reason for making the platform section deeper in platform synthronons. Besides the space required for the centrally placed cathedra, the deeper platform may serve as a practical area for various uses. Icons may be arranged on either side of the Holy Scripture and placed on the platform to represent God. Additionally, placing large cushions and backrests on the platform is another possibility. The synthronon of the Church of Saint John the Theologian in Ephesus is an example of this type (fig. 8).



Figure 8 Synthronon of the Church of St. John the Theologian in Ephesus. (From the E. Kaya archives)

6. Multi-Step with Pseudocorridors

Synthronons of this type, which possess the same characteristics as multi-step and corridor synthronons but with one distinct difference, are referred to as multi-step and pseudocorridor synthronons. Typically, these synthronons have five or more steps due to their pseudocorridor layout. When viewed from the naos, the kyklion of the synthronon, indistinguishable from the corridor type, extends approximately one-third of the apse arc. Upon reaching one-third, a wall terminating the corridor may feature a niche where lighting fixtures or liturgical items could be placed. On both sides of the synthronon, the corridor, with entrances at either end, terminates in the center of the apse without connecting to each other, usually through a wall or a wide fill. For a deacon entering the corridor, exiting would necessitate turning back, making the pseudocorridor (false corridor), where only one end is open, impractical for use. Therefore, examples of this type are very few, as the pseudocorridor is not considered functional, unlike in corridor types. Like in corridor types, the entrance to the pseudocorridor is also covered with a curtain. The entrance to the corridor is covered with a curtain on both sides of the synthronon, as the lighting from the corridor niche, the physical movement of the deacons within the corridor, or the potential use of the corridor as storage necessitates it. Compared to corridors that run along the apse wall and eliminate the need to pass in front of the synthronon, pseudocorridors are not preferred for functional reasons, as evidenced by the limited number of examples (Table-1: 6). The Synthronon of the Lower Church of Amorium serves as an example of this type (fig. 9).



Figure 9 Synthronon of the Lower Church of Amorium
(From the E. Kaya archives)

7. Multi-Step with Platforms

Unlike multi-step synthronons, typically, after the third or fifth step, which is usually the highest level, there is a platform between the last step of the synthronon and the apse wall. Therefore, in synthronons referred to as multi-step and with platforms, it can be said that the clergy sits on the platform along with the top step. However, this area without back support may feature different applications. In synthronons, the vertical section of the top step is made higher, approximately 40 cm, closer to the height of a knee, compared to the other steps. If only the top step has a height equivalent to a knee, it can be said that the clergy sits at the level of the platform. However, if both top steps are of knee height, it can be assumed that the clergy sits one step below the platform level to participate in the liturgy and use the platform height to lean against. The cathedra placed in the center of multi-step and platform synthronons is arranged to create a seating area higher than the platform level. The necessity for the clergy, seated at the platform level or one step below, to be hierarchically lower than the clergy sitting on the cathedra is reflected in the arrangement and height of the cathedra. The platform, not seen in single step synthronons, is



Figure 10 Synthronon of the Basilica of Patara City
(Demirton 2018, p. 13, fig. 1.7.)

present in synthronons with three, five, or more steps. Some platforms feature dowels or traces of joints on the steps. In examples with a wide dowel, it can be speculated that a wooden platform or a marble column is placed on this dowel to create a lectern for the Bible. In platforms with joint traces or narrow dowels, these traces are thought to be evidence of a wooden platform or marble or stone slab coverings (Table-1: 7). The Synthronon of the Patara City Basilica serves as an example of this type (fig. 10).

8. Extending from Apsis to West

Synthronons protruding from the apse towards the west, known as projecting type, have not been limited by the number of steps in typological classification. This is because, regardless of the number of steps, these synthronon steps extend towards the bema. Synthronons of this type can be single-stepped or multi-stepped, such as 3 or 5 steps. Extending the steps of the synthronon from the apse towards the west allows for a greater number of clergies to sit during ceremonies or rituals. Some of these projecting synthronons may indicate that they were added later in the construction phase of the building or extended according to need. However, it is also worth noting that these types of synthronons may have been built during the original construction phase of the structure. Therefore, careful evaluation is important regarding the parts of these steps that extend towards the bema and their material (Table-1: 8). The Synthronon of Perge A Church serves as an example of this type (fig. 11).



Figure 11 Synthronon of Church A in Perge
(Kara 2022, p. 90, fig. 2.)

9. Recessed into Apsis

Examples of synthronons recessed from the apse are relatively scarce in number. This type of synthronon, which is shorter than the apse radius, allows for fewer clergy members to sit compared to other examples. Despite accommodating fewer clergy members, the fact that this type provides a wider space in the bema area is a positive quality, albeit limited in capacity during ceremonies and rituals. In Early Christian Period churches, a layout with a synthronon recessed into the apse can be expected due to the positioning of the altar near the platform in the center of the synthronon. However, the limited number of examples of synthronons recessed from the apse in Early Christian churches suggests that the advantage in capacity may have been prioritized over the practical benefit of expanding the space in practice (Table-1: 9). The Gebze Yılançabayır Church and Tuzla Hagia Glykeria Monastery Church (fig. 12) are examples of this type, dating back to the Middle Byzantine Period in Anatolia.



Figure 12 Synthronon of the Hagia Glykeria Church in Tuzla
(Eyice 2001, p. 67-79; Mamaloukos 2018, p. 108.)

10. Bemathronon

This type of synthronon is encountered in the (Northern) Syrian Region, where different regional characteristics of the Mediterranean World can be best observed. The synthronon, separated entirely from the bema and altar within the apse through a massive architectural design, is constructed facing towards the apse and integrated into the main nave of the church as bemathronons. Often having a U-shaped plan, this liturgical arrangement incorporates the cathedra, synthronon steps, and the altar. Some examples also feature functional niches within their interior walls. Bemathronons are typically built on a platform higher than the church floor. Over this platform, accessible via steps, lies the synthronon dominating the templon, along with the cathedra and altar serving the liturgy. Bemathronons can either directly open into the apse or be accessible to the bema through an opening. Due to their longer steps compared to conventional synthronons, a much larger clergy class can be accommodated in the bemathronon. The ritual performed at the altar by the clergy sitting on the synthronon can be directly observed from the elevated cathedra placed in the center. However, the positioning of this liturgical arrangement within the church entirely abstracts the congregation from the bema where the services are conducted. Examples are found where the aisles to the north and south of the bemathronon are covered with panels, creating two separate spaces to the west and east of the bemathronon (fig. 1). There could be two reasons for this division within the church. Firstly, it might be related to the arrangement described in the Didascalia and seen in the Early Byzantine Period Domus Ecclesiae, where men would be in front and women behind.[4] Another possibility is that considering the separate entrances to the space west of the bema from the north or south façades of the church, this area behind the bema, isolated from the sacred space where the liturgy is conducted, could have been allocated for catechumens (fig. 1). The Qirkbiza Domus Ecclesia Bemathronon, dating back to the 4th century AD, is an example of this type (fig. 13).



Figure 13 Bemathronon of the Qirkbiza Domus Ecclesia (https://iiif.lib.harvard.edu/manifests/view/ids:43468 1605$1i / Access:08.01.2023)

Conclusion and Results

The religious architecture of the Byzantine Empire, which lasted from the 4th to the 15th century, and its surviving traces require extensive research in this field. Especially studies in Byzantine architecture cover wide boundaries and span a long period of time, leading to an increasing amount of research on every detail. The bema, which is the focal point of churches and liturgical rituals in Byzantine religious architecture, is particularly important due to its hosting of liturgical elements. The synthronon, located within the apse and enabling the clergy to conduct and observe the liturgy, has undergone various transformations over an 11-century period and has adapted to different needs. However, the fact that there has been no study specifically on the characteristics of synthronon types or on synthronon typology in Byzantine architecture is noteworthy.

In this context, with the effort to fill this gap in the vast field of Byzantine architecture, a research initiative was undertaken, examining approximately 140 churches within the borders of Anatolia, focusing specifically on synthronons. Ultimately, the qualitative information obtained from the research was compared with examples outside Anatolia in the Byzantine world to identify

common features. Classifying synthronon types in Byzantine architecture and categorizing existing examples into ten main headings does not imply that the identified ten typological headings will not increase. Adding new types that may emerge from excavations and research conducted in Anatolia will contribute to the determination of synthronon types by enhancing the perspective on the subject.

The study aimed to create a typology of Byzantine architecture with synthronons, formed by bringing together synthronons that have survived intact or in a state of destruction, which is open to development with new examples but also contributes to Byzantine architecture with its current arrangement. Carefully identified typological features have served as both the focus of the research and the desired outcome, despite the inclusion of almost all synthronon examples in Anatolia in the study, although not reported here, aiming to shed sufficient light on which typological class any given synthronon could belong to.

Another result identified from the Anatolian churches examined during the research is that the dimensions of the apse are directly related to the type and dimensions of the synthronon.

The determination of synthronon typology and the identification of the number of steps in Anatolian churches with synthronon, based on all structures that have been included and evaluated in the research, have provided access to various data when analyzed from different perspectives. The relationship between the width of the apse and the number of steps in the synthronon has enabled a proportional inference. It can be said that the dimensions of the apse directly influence both the synthronon and the number of steps, based on the consistent data obtained in this regard. The number of steps in Anatolian churches during the Byzantine Period, based on the width of the apse, is as follows:

If the width of the apse is approximately 4.44 meters and the depth is 2.91 meters, it corresponds to 1 step.

If the width of the apse is approximately 5.59 meters and the depth is 3.27 meters, it corresponds to 3 steps.

If the width of the apse is approximately 7.28 meters and the depth is 4.18 meters, it corresponds to 5 steps.

If the width of the apse is approximately 9.37 meters and the depth is 5.12 meters, it can be said to have a synthronon with 7 steps. Additionally, in rock churches, if the width of the apse is approximately 3.52 meters and the depth is 2.73 meters, it can be classified as a rock church with a single step synthronon.

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[1] Altripp, by referencing a limited typology based on churches and cathedrals in the region, has incorporated Greek examples into his research, thus forming a regionally limited typology (Altripp 2000).

[2] This typological research conducted through Greek churches is significant for conveying the local characteristics of synthronon types found in Greek churches. However, as expected in Byzantine architecture, just as there is expected to be a synthronon in every church, there should also be a cathedra in each synthronon. In this context, the presence of synthronon types reported with or without cathedra in the research indicates the use of portable cathedrals in some Greek churches. Some of the typological headings applicable to Greece may not include certain characteristics that would not be encountered in Anatolian examples, thus highlighting the insufficiency of typological headings developed for Greek churches for Anatolian churches.

[3] Altripp 2000, p. 381.

[4] Gibson 1903, p. 65.

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