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# T-shaped plan in Bulgarian churches: Ottoman state Kırkkilise sanjak churches in the late 19th century

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## Keywords

Bulgarian; Church architecture; Kırkkilise (Kırklareli); 19th century; Journeyman

#### **Abstract**

This study is about the architecture of the churches designed in the Kırkkilise sanjak belonging to Edirne province of the Ottoman Empire between 1870-1913. This was a period when the Bulgarians in the Ottoman Empire could freely build their churches. The Kırkkilise location was chosen as the focus of the study since it was one of the provinces with the highest Bulgarian population during the aforementioned period. The study's methodology included an analysis and taken from the plan schemes and facades of the churches designed in this period. As a result, it was determined that the T-shaped plan scheme, which extended from the narthex to the north and south, was used in Bulgarian churches in the late 19th century, unlike the plan scheme of other churches. In the same period, this plan scheme was also used in Edirne, located to the west of Kırkkilise (Kırklareli), Bulgaria and Greece which are all situated in the Balkans. The study also uncovered that, a non-Muslim journeyman, Ziyo, played a major role in the formation of non-Muslim architecture in Kırklareli, especially in the design of many Bulgarian churches.

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#### Highlights

- The desire to use the upper floor of the narthex and the search for a unique plan scheme as opposed to the existing basilica style churches, played a role in the emergence of the T-plan scheme.
- T-plan scheme was an uncommon practice within church architecture but, was made popular by Bulgarians who lived in the same environment with the Muslims at the end of the 19th century.
- At the end of the 19th century, journeymen had a great influence on the development of the architectural design in the Kırkkilise sanjak region as well as throughout the Ottoman Empire.

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# **INTRODUCTION**

The 19th century was a period in which many innovations were experienced in terms of Ottoman history, and this process continued in the 20<sup>th</sup> century. Especially with the effect of Tanzimat (1839) and Islahat edicts (1856), new regulations were made throughout the empire, institutions were established, and new structures were built. After the Islahat Edict, great steps were taken for the liberation of non-Muslims (Güllü, 2018, p.350). Non-Muslims in the Ottoman State were divided into three nations as Jews, Greeks, and Armenians. Within this structure, all Christian subjects were divided into Greek and Armenian nations. Christian communities that were not ethnically of these nations were also considered to be subject to one of the Greek or Armenian nations according to their beliefs and were evaluated within that nation. Bulgarians, who are Orthodox Christians, were subject to the Greek nation and affiliated with the Greek Patriarchate (Güllü, 2018, p.350). As a result of the pressure and assimilation policies made by the Greeks on the Bulgarians over time, the Bulgarians struggled to have their own national churches and schools and to educate their children in Bulgarian (Ahbab, 2015, p.54). In 1870, the Bulgarians left the Greek Patriarchate and ensured that their national church was recognized by the state, and established the Bulgarian Exarchate, whose center was in Istanbul (Güllü, 2018, p.350). In 1913, they gained their political independence, then the Bulgarian Exarchate fell and moved to Sofia (Seyfeli, 2011, p.184).

Another area where changes took place in the 19th century was the field of architecture. In the classical Ottoman period, while the institution responsible for architectural affairs in the Ottoman State, was Hassa Architects Association, this institution was closed in 1831 and the Ebniye-i Hassa Directorate was established. After that, both local and non-Muslim contractors, architects, and journeymen played an important role in Ottoman architectural activities. While journeymen were in a position to assist the architect in the classical period, the definition of journeyman changed with the evolution of social and political conditions in the empire. In the 18th and 19th centuries, journeymen ceased to be only assistants and started to build structures alone (Cerasi, 1988, p.87). The responsibility of the journeymen in repair and construction works alone was supported by some regulations. For instance, the negotiation regulation, which was enacted in 1877, guided those who would be contractors in the realization of constructions (Ergin, 2006, p.1741). This regulation also allowed entrepreneurs from various ethnic backgrounds to participate in construction works besides official servants (Şenyurt, 2009, p.490). Before the Tanzimat, journeymen, architects, and masters who would work in architecture were required to obtain a license from the architects at the head of the Hassa Architects Association (Ortaylı, 2016, p.321), but after the Tanzimat, this requirement disappeared. In this period, the planning and projecting of buildings became a role mostly undertaken by journeymen due to the scarcity of trained architects (Bilmis, 2020, p.22; Senyurt, 2011, p.211).



The construction knowledge of journeymen, who played an active role in the construction of buildings for many years, had been questioned because of the costs of damages after earthquakes or fires. Articles from the Hamiyet newspaper, published in 1886, drew attention to the fact that the artistic features of architecture had lost its value since it fell into the hands of the common and oftentimes uneducated journeymen who when making renovations to these ornate structures would often do more damage than good (Bora, 1981, p.5). Sedad Hakkı Eldem (1973, p.5) also stated that the views and understandings of journeymen who carry out the architectural business were narrow, and that architecture became impersonal in the hands of journeymen. In addition, the architects of many of the 19<sup>th</sup> century and later monumental buildings of the Ottoman Empire were journeymen. The Balyan family, one of the most well-known of them, played a role in the construction of many buildings with their closeness to the sultan. In fact, it has been determined by archival documents that many journeymen, such as Balyan family, were contractors, not architects, in many buildings of which they are called architects (Can, 2014, p.117). According to Eldem (1973, p.5), the Balyan family had a great influence on Turkish architecture for a century, with a chance and perseverance rarely found in other countries.

Before the Tanzimat, while the construction custodians were responsible for the construction of the buildings, since the end of the 19<sup>th</sup> century, the provincial formations of the municipal organizations appointed the municipal architects for the public buildings (Şenyurt, 2008, p.166). Journeymen and engineers affiliated to the municipality, had a great influence on the development of the architectural design in the Kırkkilise sanjak (sanjak is the administrative division between the provinces and districts in the Ottoman administrative organization) instead of the municipal architects.

In this article, the drawings and architects of the churches designed to be built in the Kırkkilise sanjak between the years 1870 and 1913, when the Bulgarian Exarchate existed, that is, the period when the Bulgarians could independently build their churches and schools, are examined. These churches do not exist today. For this reason, it is not known whether these drawings were constructed or not. These churches are not included in the Kırklareli city cultural heritage inventory. It is not known whether the remains such as masonry wall parts and tombstones found in the villages, where the churches are located, belong to these churches (Toptaş, 2012). For this reason, the framework of the study was drawn as the churches designed/planned to be built during the Bulgarian Exarchate. The Bulgarian churches, whose visual documents can be accessed from the Prime Ministry State Archives, were examined, the plan schemes and facades in the documents were evaluated in a collective image. By using the data such as signature and seal under the drawings, the architects who drew the plan were tried to be determined. In addition, a table was created to see all the architectural features with the data obtained from the visuals. These architectural features are the dimensions of the churches, their area, wall thicknesses, facade features, number of floors, heights, and ornamental elements.

#### Literature Search

When the publications about the 19<sup>th</sup> century churches in Turkey are examined without making any geographical limitation, it is seen that mostly, the studies have been carried out to determine the existing ruins, to examine the plan scheme, to reveal the facade and decoration features. Pekak and



Aydın (1998) introduced three churches in and around Selçuk, Özcan (2007) introduced a Greek church in Bilecik with its architectural and ornamental features. İlter (1981) discussed the two churches in Kayseri in the context of their structural and interior features and decorations. Tok (2012) examined a church in Sinop-Ayancık and revealed the construction phases of different periods. Aydın and Özügül (2019) made the drawings and architectural analysis of ten Greek churches in ruins in Mudanya and examined their architectural features. Açıkgöz and Ahunbay (2008) also examined many existing churches in Kayseri, took their inventory, and examined the plan schemes. They determined the conservation status based on their current situation and made suggestions for their protection. Benian (2004) dealt with two Bulgarian churches in Edirne in her master's thesis, analyzed its architectural features and examined the plan scheme. These churches, which differ from other churches in the narthex section, were defined by Benian, and his master thesis advisor Büktel (2017) as "U-narthex" and they found similar ones in Thrace, Greece, and Bulgaria, and later in Ayvalık (Büktel, 2018). Since the churches they detected were similar to the churches examined in this study, these studies are given in detail in the "church plan types" section. And the location of the plan types determined in this study in the architecture of Bulgarian churches was investigated. Based on the old plan schemes in the examined church drawings, some inferences were made about the emergence of the T-shaped plan scheme.

In some publications, the architects of the churches were known because the church has an inscription. But the architects of most of them were unknown. Therefore, the issue of the architects of the churches is a subject waiting to be investigated. This study differs from other studies dealing with churches in that it examines architectural drawings, not ruins, since churches do not exist. The reason why Kırkkilise sanjak was chosen as the study area is that, it had a large number of non-Muslim Bulgarian populations as it is close to the Balkans, and therefore it had hosted many Bulgarian churches.

# KIRKKILISE SANJAK AND CHURCHES

Kırkkilise, which came under Turkish rule in the 14<sup>th</sup> century and was the gateway of the Ottoman lands to the Balkans, was one of the rare Ottoman cities where the non-Muslim population was in the majority at the end of the 19<sup>th</sup> century. The origin of the name Kırkkilise dates to the Byzantine period. The Byzantines named the settlement "Saranta Eklesias", and after the region passed to the Ottoman Empire, its name was translated into Turkish and called "Forty Churches" (Tuğlacı, 1985, p.211), in Turkish "Kırk Kilise". On 20 December 1924, it was transformed into Kırklareli (Tuncel, 2002, p.480) (Akın, 1997, p.10). According to the 1881-1893 Ottoman general censuses, the non-Muslim population was 71% and the Muslim population was 29% (Karpat, 2010, p.164, 165). The non-Muslim population decreased to 66% in 1902 (Kanal, 2016, p.155) and to 57% in 1907 (Karpat, 2010, p.346, 347). According to Edirne Provincial Annual Books, this was the sanjak with the highest Bulgarian population in 1902 (Kanal, 2016, p.167). As a natural consequence of this, many churches, especially Bulgarian churches, were built in the region.

Within the borders of Kırkkilise sanjak, between 1880-1910, there were 44 churches and monasteries in Kırkkilise central district, 29 churches in Tırnova district, 7 churches in Lülebergos district, 9 churches in Ahtapoli district, 6 churches in Vize, and 6 churches in Midye districts, 11



churches in Baba-yı Atik district (Kanal, 2016, p.150-153). Most of them had been destroyed and had not survived to the present day. Some of them are ruins¹ and some of them are used with a different function today². Even the documents of some of them are not available (Toptaş, 2012). The documents that provide the most detailed information about the architecture of the churches are the Ottoman Archive documents. Within the Kırkkilise sanjak, the drawings of 15 churches were found in the Prime Ministry Ottoman Archives. Of these, 10 are Bulgarian churches and three are Greek churches³. It is not known which congregation the two churches belong to. Within the scope of this study, only Bulgarian churches are considered.

# Bulgarian churches designed in Kırkkilise sanjak in the light of Ottoman Archives visual documents

Three of the 10 Bulgarian churches in the Ottoman Archives are in Tirnova Town (Çorbacı, ("Kırkkilise sancağı Tırnova kasabasının", 1896), Çıknahor, ("Kırkkilise sancağı Tırnova kazasına", 1898) and Göktepe villages ("Kırkkilise'nin Tırnova kazası", 1912)), one in Pınarhisar township ("Edirne vilayeti", 1883), one in Karabaş Quarter -Ayaş Bulgarian church- ("Kırkkilise kasabasında Karabaş mahallesinde", 1897), one in Fenare-i Zir village ("Kırkkilise kazasına tabi Fenare-I", 1897), one in the village of Berkoscuk ("Kırkkilise kazasına tabi Berkoscuk karyesindeki", 1897), one in the village of Kofçaz ("Kırkkilise mülhekatından", 1899), one in the village of Pene in Pınarhisarı ("Kırkkilise sancağı Pınarhisarı nahiyesi muzafatından", 1901), one in the town of Kırkkilise ("Kırkkilise kasabasında vaki", 1907). Nine of these churches were drawn for reconstruction (Figure 1) and one -Tırnova Göktepe village- for repair since the walls of the old church were demolished. Bulgarian churches were mostly called by the names of the village or township where they were located, only the Ayaş Bulgarian church is an exception to this. In archival documents, ground floor plans and facade drawings are generally used to promote churches. However, it is seen that the upper floor plan, front and right facades are also used in some buildings (Figure 1).

<sup>&</sup>lt;sup>1</sup> The largest surviving church is the Sveti Nikolas Bulgarian church. This church, located in Hatice Hatun quarter, Koca Kasaplar region, has a sketch but no detailed plan (URL 1). Koyunbaba Village church is protected by exterior walls (URL 2). Apart from this, there are sketches of the churches of Erikler and Kayalı villages, of which only a few walls remains exist (Toptaş, 2012, p.143).

<sup>&</sup>lt;sup>2</sup> The Yayla quarter church is used as an art gallery (URL 3), and the Kıyıköy church (URL 4) and Vize Ayasofya church (Süleymaniye mosque) (URL 5) are used as mosques.

<sup>&</sup>lt;sup>3</sup> Meryem Ana church in Baba-yı Atik, Aya Tanaş Greek church 1883, Aya Dimitri Greek church in Üsküp 1897.



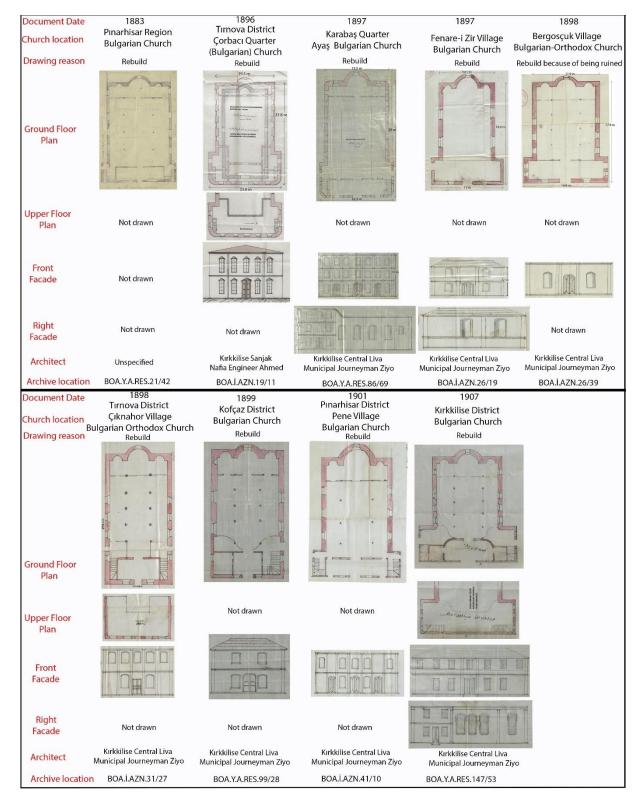


Figure 1 - Churches have drawn to be rebuilt in Kırkkilise sanjak (prepared by the author with the archive documents).



#### Architectural features of churches

## Site plan

The lands, on which the churches are located can be seen only in the plans of the Kırkkilise Bulgarian church, the Tırnova Göktepe Bulgarian church, and the Tırnova Çorbacı Bulgarian church (Figure 2 and 3). In Kırkkilise Bulgarian church, there is a school in the southwest corner and toilettes in the east side of the courtyard ("Kırkkilise kasabasında vaki", 1907) (Figure 2a). In this plan, it is stated that the courtyard walls and the school are already located. In the northwest corner of Tırnova Göktepe church courtyard, there is a priest's room ("Kırkkilise'nin Tırnova kazası" 1912) (Figure 2b). In the cross-sectional drawing, walls that have been burned and need to be repaired are indicated in red colour (Figure 2b). The fact that the churches were drawn with their surroundings, indicates that their locations were known before the design. Among the analyzed drawings, only in the church in Tırnova Çorbacı District, there is a bell tower in the drawing, independent of the building, adjacent to the courtyard wall (Figure 3). The bell tower is not shown in other Bulgarian churches.

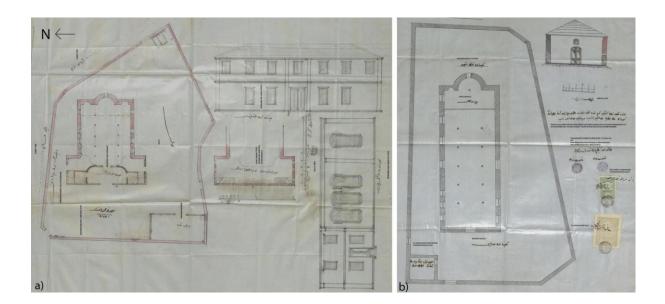


Figure 2 - The location of the a) Kırkkilise Bulgarian church ("Kırkkilise kasabasında vaki", 1907). b) Tırnova Göktepe churches in the courtyard ("Kırkkilise'nin Tırnova", 1912).



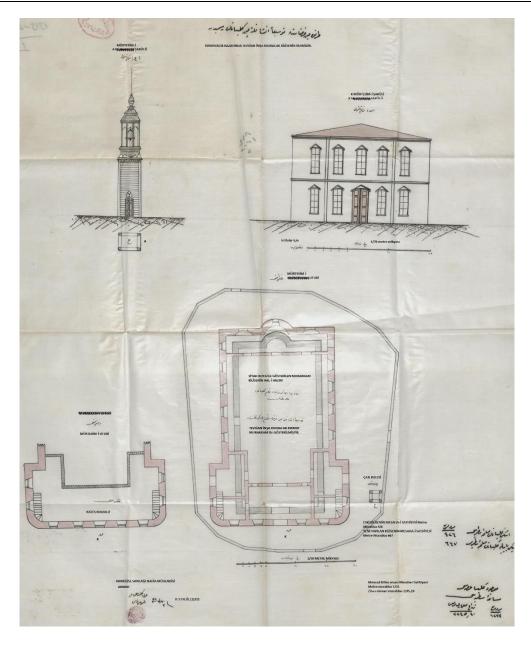


Figure 3 - Tırnova Çorbacı District church plan with bell tower ("Kırkkilise sancağı Tırnova kasabasının", 1896.)

#### Plan schemes

The plan schemes of the churches are generally like each other. They have a rectangular plan in east-west direction, and a semi-circular apse protrudes in the east (Figure 1). Churches with a basilica plan consist of the narthex as an entrance, the naos, the main place for worship, the apse that protrudes outward in a semi-circle on the east facade, the clergy's section, and the bema sections in front of the apse, which also includes the holy Altar, which are closed to the congregation and women (Karaca, 2008, p.598). The naos is separated by columns in two rows and has three naves. In the axis of these naves, circular niches were used on the apse wall. As an exception, there is a window instead of a niche in the Ayaş Bulgarian church. The naos section is the largest and the brightest area with its large windows. There are three gates on the iconostasis



between the bema and the naos. It is seen that the narthex sections of the churches protrude from the naos line to the north and south. Stairs leading to the upper floor, named "emporia" in Bulgarian churches, are placed in these parts, and these parts are separated by a wall in the interior. In most of the plans, stairs are placed at both corners. The church in Kofçaz has stairs only in the south corner. A room is designed in its symmetry. There is one more room next to the stairs in the churches of Kırkkilise and Çorbacı quarter. The narthex section is accessed by three doors in the Ayaş and Pene Bulgarian churches, and one door in the others. The Berkoscuk village church, which does not have a staircase and has a single-storey narthex, has a T-plan scheme like the others. Only the church of Tırnova Çıknahor village and the Bulgarian church of Kofçaz do not have a T-plan scheme. Although the narthex is two-storey in seven of the nine churches and three-storey in one, only the upper floor plans of three buildings have been drawn.

Old churches are also included in the plans of two Bulgarian churches drawn for reconstruction and one Bulgarian church drawn for repair (Figure 4). In addition to these, there are old plan schemes of a church whose congregation is unknown in the Hatice Hatun quarter, and two Greek churches (Figure 4). When the plan schemes are examined, it is remarkable that the old churches in Kırkkilise sanjak are smaller and more modest. The narthex sections of old churches are usually single-storey, while these parts of new churches are rarely single, usually two or three-storey. In addition, two of the six old church plans have a small room near the entrance, added to the main building. On one of them, it is written that this room is used for the worship of women. No special section for women is specified in the other five church plans. In the plan scheme of new churches, it was written in two of the three churches with an emporia that, the emporia is reserved for women. On the other emporia plan, "lattice area" is written because of the lattice-shaped balustrades.

It was also stated by Büktel (2017, p.143), who researched churches with a similar plan, that the upper floor of the narthex was generally used as a women's worship place. Büktel stated that the entrances reserved for women were provided by doors opening from the right and left sides of the narthex or the end points of the narthex facing the apse, so that women could enter the church without being seen by men. This understanding of planning is also used in rural and monumental mosques today.



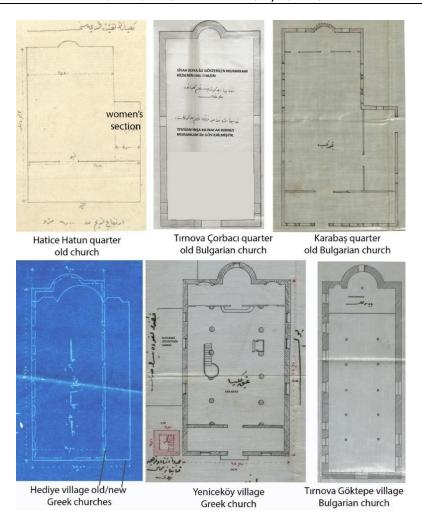


Figure 4 - Plans of old churches (From left to right references: "Kırkkilise kasabasında Haticehatun", 1892; "Kırkkilise sancağı Tırnova kasabasının", 1896; "Kırkkilise kasabasında Karabaş mahallesinde", 1897; "Kırkkilise'nin Hediye", 1905; "Kırkkilise'nin Yeniceköy", 1912; "Kırkkilise'nin Tırnova", 1912).

In the plans of some churches (1883 Pinarhisar Bulgarian church, 1897 Karabaş Ayaş Bulgarian church, 1898 Tirnova Çıknahor Bulgarian church, 1899 Kofçaz Bulgarian church, 1901 Pinarhisar Pene Bulgarian church), besides the main entrance door, there is another door opening directly to the naos from the north and south facades of the buildings (Figure 5). This situation is thought to be a design problem in terms of architecture. As in all religious buildings, also in churches, the road starting from the narthex and leading to the apse has a symbolic meaning. In Christianity, this road symbolizes a life path that ends in Jesus (Schulz, 1971). In the planning where the spatial order is not followed, this symbolic meaning is ignored. In addition, the entrance from the naos may cause problems in terms of security.



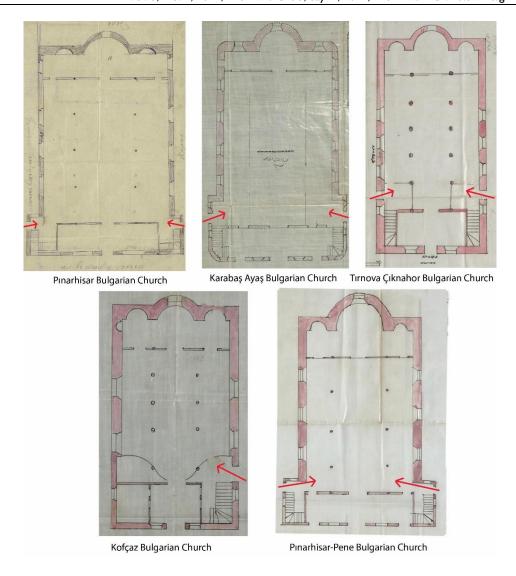


Figure 5 - Plans indicating the doors leading directly to the naos. (from left to right references: "Edirne vilayeti", 1883; ("Kırkkilise kasabasında Karabaş mahallesinde", 1897; "Kırkkilise sancağı Tırnova kazasına", 1898; "Kırkkilise mülhekatından", 1899; "Kırkkilise sancağı Pınarhisarı nahiyesi muzafatından", 1901).

According to the comments made within the framework of the data on the drawings, when considered in terms of today's technical drawing rules, missing parts or inaccuracies have been detected. For example, in the Bulgarian church in the village of Çıknahor, the stairs are shown on the ground floor level plan, but not on the emporia plan. In the Bulgarian church of the Fenare-i zir village, no stairs are drawn to the two-floor narthex. In addition, the narthex and naos are separated by a single line on the ground floor. Again, in this church, only the naos section is drawn as a finished building with its hipped roof in the drawing of the northern facade, and the narthex part is not considered. In the Bulgarian church in Kırkkilise town, the upper floor balustrades are dotted. The roof of the south facade of the church, which is designed with a hipped roof, is not drawn. In Ayaş Bulgarian church, the structural line is expressed as a straight line instead of specifying the structural elements one by one on the ground floor. In the plan, the four corners are rounded, which are also indicated by dots. On the side facade, the narthex and the naos are



terminated at different levels and are connected to each other by a curved line without drawing the roofs. In the Berkoscuk village church, the reflections of the upper floor plan are not drawn to the lower floor plan. The reason why journeyman Ziyo's drawings do not comply with today's technical drawing rules may be that he made them quickly and as sketches. On the other hand, the 19th century was a period in which journeymen in the Ottoman Empire took part in design without questioning their architectural knowledge, and it comes to mind that Ziyo journeyman did not have much knowledge about architectural drawing.

#### **Facades**

The western and southern facades of the churches can be seen in the archive documents. The west facade (entrance facade) is divided modularly with columns, doors or windows are placed in these modules or the modules are left blank. Moldings used between floors and under the eaves are also horizontal decoration elements of the facade. On the entrance facade, there is a double leaf door on the middle axis and symmetrical windows on both sides. Doors and windows used in the churches are mostly designed with arches. As well as arched windows, straight windows are also used in some churches. The naos and the narthex can be seen together on the south facade. Larger windows are used in the naos section compared to the narthex section. This is because the narthex section is mostly two-storey, while the naos is a single-storey, wide space, and the main prayer space, which is two stories high.

Among the churches whose facades had been drawn, the church in the Çorbacı neighborhood of Tırnova has the highest eaves elevation, with 14.3 meters. The lowest facade is 5.1 meters high and belongs to the church in Fenare-i Zir village. Churches have hipped or gable roofs. The roof of some of them is not drawn (Table 1).



Table 1 - Table of architectural features of Bulgarian churches designed for reconstruction. (This table has been prepared by the author with measurements made on the drawings in the Ottoman Archive.) References from top to bottom: ("Edirne vilayeti dahilinde Pınarhisar nahiyesinde", 1883; "Kırkkilise sancağı Tırnova kasabasının Çorbacı Mahallesi'ndeki", 1896; "Kırkkilise kasabasında Karabaş mahallesinde", 1897; "Kırkkilise kazasına tabi Berkoscuk karyesindeki", 1897; "Kırkkilise kazasına tabi Berkoscuk karyesindeki", 1897; Çıknahor, "Kırkkilise sancağı Tırnova kazasına tabi Çıknahor karyesinde", 1898; "Kırkkilise mülhekatından Kokcağan nahiyesinde", 1899; "Kırkkilise sancağı Pınarhisarı nahiyesi muzafatından", 1901; "Kırkkilise kasabasında vaki", 1907).

Constructi on date	Name	Plan scheme	Number of floors	Area (m²) (width x lenght (m))	Wall thicknesses (cm)	Height (m)	Nartex part window type	Naos part window type	Door type	Facade ornamental elements	Roof floor type	The person who draws the plan
1883	Pınarhisar Bulgarian Church	T-shaped plan	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified
1896	Tırnova-Çorbacı Quarter Church	T-shaped plan	2	804 m2 (23,8 x 33,8)	80, 80, 80	14,3	Arched and triangle pedimented	Unspecified	Arched and double leaf door	Pilasters and horizontal ornament elements		Public works engineer Ahmed
1897	Karabaş Quarter Ayaş Bulgarian Church	T-shaped plan	3	434 m2 (15,5 x 28)	130, 90, 50	10	Arched	Arched	Arched and double leaf door	Pilasters and horizontal ornament elements	Not known	Journeyman Ziyo
1897	Fenare-i Zir Village Bulgarian Church	T-shaped plan	2	187 m2 (10,1 x 18,6)	100, 70, 55	5,1	Arched	Arched	Arched and double leaf door	Pilasters and horizontal ornament elements	Hipped roof	Journeyman Ziyo
1898	Bergosçuk Village Bulgarian Orthodox Church	T-shaped plan	1	213 m2 (11,9 x 17,9)	90, 75, 65	5,6	Arched	Unspecified	Arched and double leaf door	Pilasters and horizontal ornament elements	Unspecified	Journeyman Ziyo
	Tırnova-Çıknahor Village Bulgarian Orthodox Church	Rectangle plan	2	276 m2 (12 x 23)	80, 80, 80	5,4	Arched	Unspecified	Double leaf door	Pilasters and horizontal ornament elements	Unspecified	Journeyman Ziyo
1899	Kofçaz Bulgarian Church	Rectangle plan	2	152 m2 (9,3 x 16,3)	55, 70, 75	7,5	Arched	Unspecified	Arched and double leaf door	Pilasters and horizontal ornament elements	Hipped roof	Journeyman Ziyo
1901	Pınarhisar-Pene village Bulgarian Church	T-shaped plan	2	241 m2 (11,9 x 20,2)	25, 83, 133	7,5	Arched	Unspecified	Arched and double leaf door	Pilasters and horizontal ornament elements	Unspecified	Journeyman Ziyo
1907	Kırkkilise Bulgarian Church	T-shaped plan	2	93 m2 (11,9 x 7,8)	20, 50, 75	7,75	Horizontal	Arched	Double leaf door	Pilasters and horizontal ornament elements	Hipped roof	Journeyman Ziyo

## Technical properties

Since the structures do not exist today, there is no clear information about the construction techniques and material properties. In most of the churches, the wall thicknesses differed according to the place of use. Three different wall thicknesses are used in six of the nine church plans drawn for reconstruction. The thickest wall is the east wall on which the apse is located, the thinner ones are the north and south walls, and the thinnest is the west wall where the entrance door and narthex are located. As an exception, in two churches of Tirnova, all the walls are of the same thickness.

## The architects of the churches

Kırkkilise municipality central sanjak journeyman Ziyo drew Ayaş Bulgarian church in Karabaş neighbourhood in May 1897, the church in Fenare-i Zir village in June 1897, the Bulgarian church in Berkoscuk village in July 1897, the Bulgarian church in Tırnova-Çıknahor village in November 1898, Kofçaz village church in 1899, Pene village church in 1901 (Figure 1). In addition, Aya Dimitri Greek church in Üsküp village ("Kırkkilise sancağına tabi", 1897), and Pınarhisar Yene Greek school ("Kırkkilise sancağı Pınarhisar nahiyesine tabi" 1897) in 1897. In other words, he drew eight churches and four schools between 1897 and 1912. He designed five of the 12 buildings



in 1897. According to these data, it can be said that journeyman Ziyo had been on duty for at least 25 years. As can be seen from the handwriting in the drawings of Ziyo journeyman, it is thought to have a name like Zijdas N. Apxiluikeon, although it cannot be read clearly (Figure 6).



Figure 6 – Seals and handwritings of journeyman Ziyo (From left to right; "Kırkkilise sancağı Pınarhisarı nahiyesi ", 1901; "Kırkkilise kasabasında Karabaş", 1897; "Kırkkilise kazasına tabi Fenare-i zir", 1897; "Kırkkilise mülhekatından Kokcağan", 1899; "Kırkkilise kasabasında vaki", 1907; "Kırkkilise kazasına tabi Berkoscuk karyesindeki Bulgar Kilisesi'nin harab", 1897; "Kırkkilise kazasına tabi Berkoscuk", 1897).

In the Kırkkilise sanjak, besides Ziyo, Vasil, the municipal journeyman, played a role in the design of the flour and ice factory ("Kırkkilise kasabası civarında", 1912) and Nafia Engineer Ahmed, in the design of the Tırnova Bulgarian girls' school ("Kırkkilise sancağı Tırnova kasabasında", 1896). The Greek school in Vasilikoz village was drawn by the Office of the Metropolitan of Ahtapolu, affiliated with Kırkkilise (Kırkkilise'ye bağlı Vasilikoz", 1912). In other words, this period was a period when engineers and journeymen of the municipality undertook the design work.

#### **FINDINGS**

Bulgarian churches, designed in Kırklareli at the end of the 19<sup>th</sup> century, have a basilica plan with three naves. The plan scheme is mostly T-shaped and symmetrical, formed by extension of the narthex section to the north and south. In some churches, the upper floor of the narthex is reserved for women's worship. While some old churches have an asymmetrical plan, the churches to be built in their place have been designed symmetrically.

Symmetry is a concept that has been used in monumental and historical buildings since the past and is still used today. The human brain searches for symmetry and is directed towards it in the whole (Salingaros, 2020, p.233). Concepts such as the golden ratio, symmetry and balance have formed the basic structure of architecture since ancient times (Karagül, 2018, p.326). The search for symmetry in churches is a situation supported by the human brain. It is seen that the women's section, which played a role in the formation of the asymmetrical plan scheme in some old churches, was taken to the upper floor in some of the new churches and two staircases were added symmetrically to the narthex section on the lower floor. Since the narthex was narrowed by these



stairs, the narthex was protruding from the north and south as much as the stairs, and the narthex interior of the same width as the naos was obtained, like in the old churches. It can be said that the construction of stairs for the need for the upper floor and the search for a symmetrical plan, played a role in the formation of this plan type seen in churches at the end of the 19<sup>th</sup> century. Columns, moldings, arched doors, and windows were used on the facades.

# Church plan types and T-Shaped Plan, comparison of Kirkkilise sanjak churches with similar ones

The first Christian churches were elongated structures inspired by basilicas, which were Roman court buildings. Although the basilica type churches have continued to the present day, the detailed ceremonies within the church have led to the emergence of new church architectural types. The new areas that would enable the clergy to hold ceremonies increased the forms of churches both in terms of interior and exterior appearance. Probably, the concern of making monumental works was added to this need. Thus, the cross and square planned church architectural types arised. As the forms of Christian worship became more complex, church plans also changed, and church interiors and, accordingly, plan schemes in the baroque period changed. Basilica and Latin cross plans formed the basis of church designs in Western Europe and America until the middle of the 20th century. In addition to the first churches built based on basilicas, another type of church was centrally planned structures without a horizontal axis. In such churches, eight pillars were usually placed in an interior with a polygonal plan such as octagon or hexagon, and a corridor appeared all around between these pillars on which the dome covering the building was located and the outer walls. A church plan derived from Roman structures with a central plan (square, polygon, or circle) and single dome is also a Greek cross-shaped scheme, which is mostly found in regions where Orthodoxy is dominant, and it has different applications. On the other hand, when the wooden roof, which was the ceiling cover, was replaced by a dome made of stone or brick, the domed basilica type emerged. Eastern Christian churches are rectangular and always oriented to the east. In the West, a cross nave was added to the basilica in the Middle Ages, crossing the middle nave vertically, so the plan took the form of a Latin cross with unequal lengths of arms. This plan was generally followed in all Romanesque and Gothic churches of Europe (Aydın, 2002, p.17). It is obvious that the T-plan scheme is not a common plan type among church plans.

As it can be understood from the publications examined, no T-plan scheme was encountered in Anatolian settlements such as Mudanya, Kayseri, and Sinop in the 19<sup>th</sup> century. On the other hand, there are many churches in Edirne (Sv. Georgi, Konstantin-Helena and Uzunköprü churches (Benian, 2004)), Rumeli side of Istanbul (Bogazköy church in Arnavutköy district), and Bulgaria (Perutsa St. Arhangeli Mikhael-Gabriel church) (Benian, 2004) where this plan scheme is used. Among them, the most similar to the plan schemes examined in this study, is the church of Sv. Georgi in the Kıyık district of Edirne (Benian, 2004, p.175). This church is similar to the Bulgarian churches of Ayaş and Pene, especially with the formation of the narthex, the positions of the stairs, the position of the wall between the narthex and the naos (Figure 8). In addition, it differs from the churches examined within the scope of the study in some parts. For example, while there are two symmetrical staircases in the narthex of the churches in Kirkkilise sanjak, Sv. Georgi church has a single staircase in the narthex. There are two stairs on the upper floor. Sv. Georgi church has two floors of emporia and its ceilings are raised by several steps. There is a choir place on the first



floor (Benian, 2004, p.178) and a bell tower on the emporia floors. In the churches examined within the scope of the study, there is usually only one-floored narthex and the bell tower was not designed inside the building. In fact, in only one drawing (Tirnova Çorbacı church), the bell tower was drawn independently of the building. Sv. Georgi church's size is close to the churches studied. It is approximately 20 m in length, 13 m in width, and 19 m in width of the narthex. If the designed churches were standing today, they could have had similar form to the Sv. Georgi church.

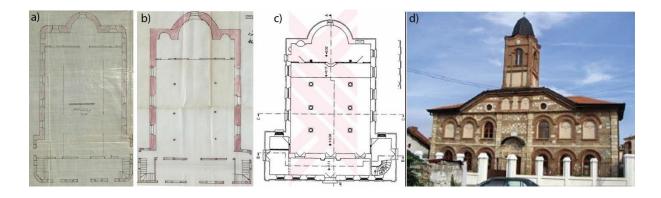


Figure 7 - a) Ayaş Bulgarian church plan b) Pene Bulgarian church plan c) Sv. Georgi church floor plan, drawn by Vasil Kitov (Benian, 2004, p.177) d) Sv. Georgi church front facade (Büktel, 2017, p.153).

Boğazköy church mosque, which was designed as a church in Arnavutköy, Istanbul and is used as a mosque today, is also a T-shaped planned church that expands from the narthex. As seen in the Ottoman archive document dated 1890 ("Çatalca kazasına tabi", 1890), the narthex part was planned quite broadly (Figure 8). The planning features of the Boğazköy church, such as the symmetrical planning in the narthex and the symmetrical facade formation, are similar to the Bulgarian churches of Kırkkilise sanjak.

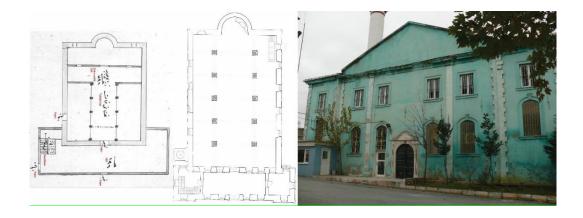


Figure 8 - Boğazköy church-mosque a) archive plan ("Çatalca kazasına tabi", 1890) b) restitution plan (1st Regional Board for the Protection of Cultural Heritage archive) c) facade (1st Regional Board for the Protection of Cultural Heritage archive).



In some churches, in addition to the extension of the plan scheme from both sides of the narthex, the extended parts also extended in the east-west direction, and the plan scheme resembled a U form, and this plan type was called U-shaped plan (Büktel, 2018). Peştere Sv. Dimitri church (1831) (Benian, 2004, p. 97), Stanimaka (Asenovgrad) S. Georgi church (1848) (Benian, 2004, p. 97), Filibe (Plovdiv) Sv. Marina church (1853) (Benian, 2004, p. 97), Mikhael Gabriel church (Benian, 2004, p. 128), Ayvalık Taksiyarhis church, (Büktel, 2017, p. 68) are the examples of this plan scheme (Figure 10). In Kırkkilise sanjak churches with T-plan scheme, the narthex doesn't extend that far in the east-west direction. However, the plan scheme is generally similar. Therefore, it can be said that this type of plan originates from the Balkans, especially Bulgaria and Greece.

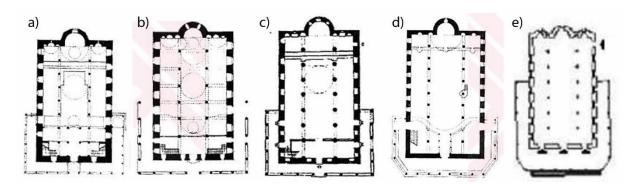


Figure 9 - Churches with U nartex, a) Peştere Sv. Dimitri church (1831) (Benian, 2004, p.97) b) Stanimaka (Asenovgrad) S. Georgi church (1848) (Benian, 2004, p.97) c) Filibe (Plovdiv) Sv. Marina church (1853) (Benian, 2004, p.97) d) Mikhael Gabriel church (Benian, 2004, p.128) e) Ayvalık, Taksiyarhis church (Büktel, 2017, p.68).

# **CONCLUSION**

In the Ottoman State, following the establishment of the Bulgarian Exarchate in 1870, an intensive design process began for the Bulgarians where they built their own independent churches and schools. Kırkkilise, one of the sanjaks with the largest Bulgarian population of the Ottoman State, has also became one of the regions where the design process was intense.

Plans with a T-shape and similar schemes throughout the empire can be found in other churches in the Edirne province and the Balkans, especially in Bulgaria. These churches are also dated to the 19<sup>th</sup> century. The fact that this plan scheme was frequently used in Bulgarian churches, and in the 19<sup>th</sup> century, suggests that the T-shaped plan scheme was a new design that emerged during the establishment of the Bulgarian Exarchate-the period when Bulgarians could freely build their own churches. It is thought that the T-plan scheme was revealed at the end of the 19<sup>th</sup> century by non-Muslims living in the same environment with Muslims in the Ottoman State. It appeared in Edirne province, which is close to the Balkans, where Bulgarians and Greeks were concentrated, and Kırkkilise sanjak was also connected. Over time, it was moved from here to different cities by immigration. The fact that seven of the ten Ottoman Archive document drawings examined were drawn by Ziyo, the head of the central sanjak municipality, shows that Ziyo, a non-Muslim, played a major role in the non-Muslim architecture of the Kırkkilise sanjak, especially in the design of Bulgarian churches.



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There is no conflict of interest for conducting the research and/or for the preparation of the article.

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I confirm that the article 'T-shaped plan in Bulgarian churches: Ottoman state Kırkkilise sanjak churches in the late 19th century' was written with full consideration to ethical norms and all consents were received from the participants.

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# **Author Contribution Statement**

A. Fikir / Idea, Concept	B. Çalışma Tasarısı, Yöntemi / Study Design, Methodology	C. Literatür Taraması / Literature Review			
D. Danışmanlık / Supervision	E. Malzeme, Kaynak Sağlama / Material, Resource Supply	F. Veri Toplama, İşleme / Data Collection, Processing			
G. Analiz, Yorum / Analyses, Interpretation	H. Metin Yazma / Writing Text	I. Eleştirel İnceleme / Critical Review			

**AUTHOR 1:** A/B/C/E/F/G/H



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