

Conservation of the Khakhuli Monastery: An architectural overview and future scenarios

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Abstract

Monastic churches in the Tao-Klarjeti region have many unique features arising from construction techniques, use of materials, and land settlement. The fate of these medieval churches, located in an area close to Türkiye's border with Georgia, depends on political negotiations between those two countries. While those negotiations continue, the churches should be documented and a basis for future conservation work should be prepared. This study examines the Khakhuli Monastery, a monastic settlement that began with a cross-planned church in the 10th century, as the historical structure surviving in the best condition in the region. An understanding of the formation of the annexes that expanded the settlement over the centuries is only possible with detailed documentation of the building. Archival evidence showed that the settlement was used as a monastery longer than previously believed. This study documents the construction techniques of the Khakhuli Monastery in detail, examines the causes of ongoing damage to the monastic church, and provides suggestions for conservation work. It primarily focuses on the holistic conservation of the Khakhuli Monastery, integrating structural analysis and social dynamics to preserve its cultural significance considering the international cooperation between Türkiye and Georgia.

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Keywords

Church, Conservation, Medieval, Monastery, Tao-Klarjeti.

1. Introduction

The Khakhuli Monastery is located in the Bağbaşı village of the Tortum district of Erzurum province, in the northeastern region of Türkiye. The monastic settlement is situated on the northern bank of the Bağbaşı Creek, which is a branch of the Tortum Stream extending along the southeast-northwest axis (Figure 1). Thus, the monastery is strategically located close to water and productive agricultural land. The village of Bağbaşı differs from the surrounding villages in terms of its mild climate and the variety of agricultural crops grown there.

Tao and Klarjeti are the historic names of two important regions within the Çoruh Valley. From the 9th century until the beginning of the 11th century, when the Georgian principalities were united into a single kingdom, Tao-Klarjeti [1] was the name of a medieval principality ruled by the Bagratid dynasty, under which the region experienced its golden age. Small monasteries were established in Klarjeti (Artvin, Türkiye) in the 9th century, while larger monastic churches were built in Tao (Uzundere-Tortum, Erzurum, Türkiye; Yusufeli, Artvin, Türkiye) towards the end of the 10th century. The monasteries of Oshki, Ishkhani, Otkhta Eklesia, and Parkhali were established in Tao in the 10th cen-

tury. Oshki (Uzundere) and Ishkhani (Yusufeli) are the closest monasteries to Khakhuli. They were constructed as domed cruciform churches, similar to Khakhuli, while Otkhta Eklesia and Parkhali were both built with a basilica plan (Khoshtaria, 2023). The Khakhuli Monastery was the westernmost of the monasteries of the Tao-Klarjeti region. Both during and after the reign of the Tao-Klarjeti principality, Khakhuli maintained relations with its western neighbor, the Byzantine Empire (Figure 2). This monastery was a pioneer in education and crafts, and many Georgian clergy members were educated at Khakhuli, an important monastery of the Middle Ages [2].



Figure 1. The south façade of the monastic church and the south chapel (photograph by the authors, 2021).



Figure 2. Tao-Klarjeti monasteries and World Heritage Sites (Google Earth, 2021).

1.1. Aim and scope

This study aims to convey the environmental value of cultural heritage by considering historical and geographical interactions to address it from a holistic perspective. Within that framework, the study provides a comprehensive overview of the Khakhuli Monastery, detailing its historical significance, architectural features, conservation status, and current challenges. Furthermore, the importance of conserving such cultural heritage sites is highlighted, emphasizing the need for urgent intervention to ensure their preservation for future generations. This study also addresses broader implications for the conservation of similar medieval churches in the region, foregrounding the importance of collaborative efforts between Türkiye and Georgia as the legal custodians of Tao-Klarjeti's cultural heritage. The international cooperation between and cross-border serial heritage potential of Türkiye and Georgia are explored with the aim of understanding how such collaboration can mitigate political and bureaucratic obstacles in cultural conservation. Thus, the present study provides a holistic approach to the conservation of the Khakhuli Monastery together with other monastic churches of the Tao-Klarjeti region, integrating structural analysis, social dynamics, and international cooperation to facilitate the effective conservation of these culturally important monuments.

1.2. Methodology

The research presented here involved a thorough examination of various sources including historical documents, architectural surveys, archival records, and previous research studies. On-site research and documentation were carried out using modern techniques such as 3D scanning and drone photography to collect detailed information about the physical condition and architectural features of the monastery. By synthesizing the information obtained from these sources, a detailed narrative was constructed to explain the monastery's history, architecture, and conservation issues. Furthermore, this

study proposes future scenarios and suggestions for conservation efforts in light of current regulations in the field of cultural heritage protection. Since there are limited studies in the literature addressing this topic and those sources are generally not well known, a brief review of the literature is presented in the next section.

1.3. Selected works in the literature

Works addressing the conservation status of the Khakhuli Monastery were primarily conducted in the 19th and early 20th centuries. As the first visual document of the Khakhuli Monastery, an engraving was produced by Théophile Deyrolle in 1869. Deyrolle noted that the building had been converted to a mosque [3]. The first known photographs of the Khakhuli Monastery were taken by Dimitri Ermakov, who was appointed by the Russian Empire as a military photographer in the region during the Russo-Turkish War of 1877-1878. Ermakov shared details of his second trip in his correspondence with Praskovya Sergeevna Uvarova, president of the Archaeological Society of Moscow (Nadimashvili, 2018), in 1908. He mentioned accompanying Ekvtime Takaishvili, a Georgian historian and archaeologist who conducted an expedition to other towns in the region in 1907, such as Göle, Oltu, and Çengilli, but not Tortum, and he described taking 300 photographs of the monasteries of Ishkhani, Oshki, and Khakhuli during the trip [4]. From the documents in the Ottoman Archives [5], it appears that Ermakov came to Tortum in 1908. However, his surviving photographs of the region are far fewer than the numbers specified in his correspondence.

The most comprehensive research on Tao-Klarjeti was conducted by Ekvtime Takaishvili, commissioned by the Society of History and Ethnography of Georgia. The fieldwork, which started on 8 August 1917, brought together Takaishvili and architect-engineer Anatoly Nikolayevich Kalgin; painters Ilya Zdanevich, Dimitri Shevardnadze, Lado Gudiashvili, and Mikheil Chiaureli; photographer Eduard Karlovich Liozen; and Ipolite, the

head priest of the Vardzia Monastery [6]. The team began its work at the Khakhuli monastic church. After the fieldwork ended, B. Ryabov completed the drawings based on measurements taken by Anatoly Kalgin (Berdzenishvili & Nioradze, 2020). While he measured the church, plaster copies of the stone reliefs were made by Mikheil Chiaureli and the wall paintings were copied by Lado Gudiashvili and Ilya Zdanevich (Kalandia, 2017). Gudiashvili and Zdanevich, who participated in this expedition in their twenties, later became well-known painters of Georgia.

Wachtang Djobadze, a Georgian-American art historian, conducted seven surveys in Tao-Klarjeti between 1965 and 1983. In 1992, he published the results of those surveys as a book (Djobadze, 1992). Mine Kadiroğlu was the first Turkish art historian to study Tao-Klarjeti, and she conducted research on the Khakhuli Monastery during surveys in the region in 1996 and 2003 (Kadiroğlu et al., 1998, 2005). In 2016, together with new measurements and drawings, a detailed examination of the Khakhuli Monastery was undertaken for the first time using 3D scanning methods. With that detailed documentation study, many previously unknown aspects of the building's construction techniques and materials were illuminated [7].

2. Architectural overview

Although few architectural structures other than the monastic church at Khakhuli have survived to the present day from among the monasteries of Tao-Klarjeti, monastic settlements were widespread in the region in the Middle Ages.

2.1. The Khakhuli Monastery settlement and its surroundings

In the monasteries of Tao-Klarjeti, as self-contained architectural complexes, monastic life was practiced in seclusion from society. Thus, a monastic church, chapel, refectory, kitchen, scriptorium, workshop, cellar, and winery were deemed necessary for a monastery's self-sufficiency. The designs of the Armenian and Georgian monasteries in Northeast Anatolia were not dependent on any specific scheme (Ahunbay, 1997). In the case of Khakhuli, the monastery complex has lost its integrity as most parts, except for the church, have been destroyed over the centuries. However, the monastic church and its immediate surroundings have survived to the present day in good condition. Some other structures, such as inner and outer fortifications of the settlement, probably from the same period, remain near the monastic church [8] (Figure 3).

At Khakhuli, the monastic church, the north church, and the south chapel



Figure 3. Drone photograph showing Khakhuli Monastery and its surroundings (photograph by the authors, 2021).

are located within inner walls that enclose an area of 2242 m². This area, surrounded by a wall approximately 3 m tall, is entered via an arched opening in the south. The ruined bell tower is accessed by stairs adjacent to the entrance gate (Takaishvili, 1952). Eighty meters west of the monastic church, there is an outer wall that is thicker than the inner wall, extending on the north-south axis. As this outer wall approaches the Khakhuli (Bağbaşı) Creek, it turns towards the east and continues in parallel to the creek. Between the inner and outer walls, there are remains of buildings thought to have belonged to the monastery (Figure 3).

One kilometer west of the monastery, a chapel stands on a high hill from which both ends of the valley can be viewed. Five additional chapels are located throughout the village. The remains of three chapels, one adjacent to the south of the church, one at the southeast corner, and one adjacent to the south of the inner wall, were documented in 1917 (Takaishvili, 1952). The quarry from which the stones used

in the monastery buildings were obtained is located approximately 50 m northeast of the monastic church. The natural slope of the quarry is such that stones could be transported to the construction site quickly after being cut (Figure 3).

2.2. Monastic church

The main entrance of the domed cruciform church is located on the south side. Both the main wall and the south façade of the entrance hall are rich in bas-reliefs and figures of animals. The eastern arm of the structure consists of apsed pastophories and a wide apse positioned 73 cm above floor level, accessible by steps. There is a niche in the middle of the apse, and on both sides of this niche, there are four equal arched niches with heights of 5.50 m. Djobadze (1992) noted that the niche in the middle could have held a bishop's throne. The annexes were entered from the cross arm of the church in the original plan. Today, however, the annexes can be entered only through destroyed sections of the wall and their

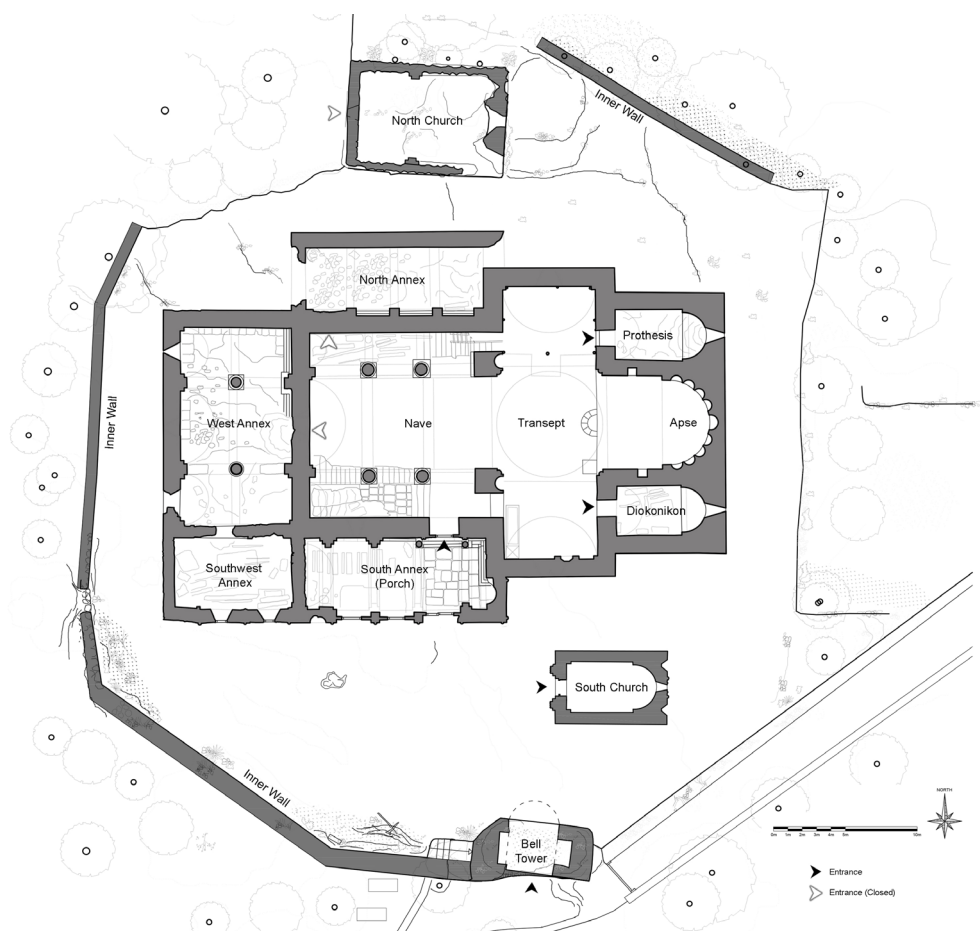


Figure 4. Elevation plan (+1.50 m) of Khakhuli Monastery (drawing by the authors, 2016).

doors have been filled or closed from inside the church (Figure 4).

One of the best-preserved examples of a conical dome on a high drum, a characteristic feature of monasteries in the region, survives at the Khakhuli Monastery. The frescoes in the dome and apse have survived only in part but their essential details remain visible. Close observation of the existing fragments of frescoes on the inner wall surfaces reveals that the frescoes were not planned in the initial construction phase and were added later.

2.3. Construction technique

The monastic church was built on a raised foundation composed of smoothly finished blocks forming three steps of 20 cm in height. The walls were composed of two façades and the space between them was filled with rubblestone mixed with lime mortar. Finely cut stone of approximately 2-3 cm in depth faced the surfaces of the

walls throughout the interior. The interior surface of this stone facing was roughly shaped to ensure optimal adhesion. The finely cut stones, unique to Armenian and Georgian architecture, were tapered towards the inside of the wall and the stones barely touch each other along the vertical axis.

Andesite was used for the stone of the walls and the vaults of the building. Stone was extracted from the quarry located immediately to the northeast of the church. Within the church, only the stone used for the drum differed from that used in the construction of the main wall. The stone used in the drum was yellowish in contrast to the gray andesite stone used in the lower walls of the building. Tuff [9] was applied for the upper parts of the windows in the drum and façades. This stone was also used as filling for the walls of other churches in the region. The use of tuff as a decorative element is only seen on the façade of Khakhuli.

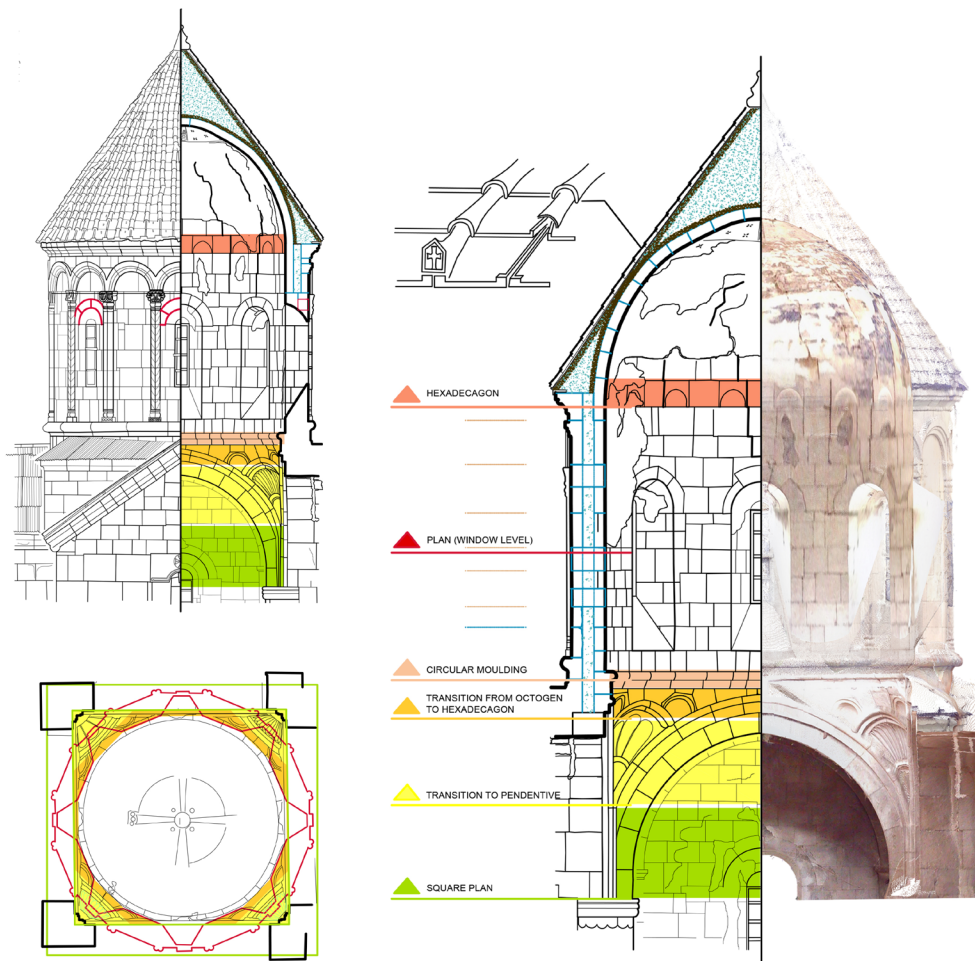


Figure 5. Analysis of the construction technique used for the dome and drum (drawing by the authors, 2016).

The dome was supported by the apse walls in the east and by two piers in the west. The vaults covering the cross arms of the church were designed to form a square base under the dome's drum. The transition from this lower base to the circular base of the hexadecagonal drum was achieved using pendentives (Figure 5).

Eight names written in the Asomtavruli script of Georgian appear on the lower parts of the dome's drum: Gursi, Aderk, Mikel, Javakh, Tvalshav, George, Tvalis, and Mhss (Mukhutsis). These were most likely the names of the master stonemasons who built the structure (Takaishvili, 1952).

Ceramic tiles were used for the roofing material of the dome and vaults. The first row of tiles was placed on the eaves of the vaults and the dome. For the eaves, rectangular tiles were arranged in rows. The first three rectangular tile rows were fixed with metal nails and the exposed edges of the tiles in those rectangular rows were covered with semi-cylindrical tiles (Figure 6).

The wooden floor is carpeted today but the original paving stones below the carpet are in good condition, as is apparent in the western naves of the structure.

3. Historical overview: Construction stages and functions

The monastic church of the Khakhuli Monastery was initially designed with a cruciform plan. It changed with additions over time, as can be understood from its elevated foundation. However, there is a lack of consensus about the timeframe in which the monastic church was

originally built due to a dearth of inscriptions. The only inscription found in the church to date appears on a later column added next to the entrance door in the southern annex. This poorly written inscription was probably placed there during the construction or repair of the southern annex. According to Takaishvili (1952), the inscription states that “Saba Saghiridze donated to the church and set a commemoration day for himself” [10]. However, Sargisian (1864) stated that the inscription includes expressions such as “I ... founded ... David” and suggested that the mentioned David was David I, who ruled between 876 and 881. He also noted that he saw Armenian letters in an inscription on the east wall of the apse and was able to read the date inscribed there as 868. Brosset (1864) disagreed with Sargisian, stating that the date is controversial and difficult to defend. Takaishvili (1952) observed that the inscription in the southern annex is located in a section that was added later; thus, it cannot be an inscription associated with the original construction.

Although it is accepted that Georgians built the monastic complex, the years in which the church forming the core of the monastery was built is a matter of debate. Based on the date proposed by Sargisian, some Armenian researchers have argued that the church was initially built in the 860s (Maranci, 2003). However, there is no firm evidence indicating that the church was built before the 10th century. In contrast, among Georgian sources, the church was referred to as “Kha-



Figure 6. a) Dome cover of Khakhuli's monastic church; b) Detail of the tile cover of the dome (photographs by the authors, 2021).

khuli” in the 11th-century “Georgian Chronicles” manuscript describing events that occurred between 786 and 1072. The church is attributed there to David Kuropalat III, a donor of other churches in the area.

Archival sources are not able to clarify this issue and there are also gaps in our knowledge regarding the exact construction dates of the annexes. The periodization proposed in the present study is intended to contribute to the subject with newly obtained data rather than repeating or comparing previous discussions.

The annexes are referred to as “north,” “west,” “south,” and “southwest” according to their directions as additions to the western arm of the church (Figure 7). Precise measurements and detailed examinations of the junctions of the monastic church and its annexes have revealed new findings. The construction details obtained by tracking the moldings under the eaves and examining the junction points provided new information about the order of the annexes’ construction: the north annex was added shortly after the construction of the church, and

then the south annex was added with the south chapel, the west annex was subsequently added, and, finally, the southwest annex was added during the repair of the south annex.

In this periodization, the south annex is particularly important. The region’s seismicity and soil characteristics must have necessitated repairs and other interventions, particularly in the south annex. As a result, structural and spatial changes occurred in the building. The portico section on the south façade of the church was built before the vault and supporting arches, together with the exterior wall. In the following period, the portico piers were jacketed and existing vaults were supported with arches sitting on other parts of the piers. The junction points of the layers in the vault and the piers and the decoration scheme are clear evidence of the southern annex having been repaired many times (Figure 7).

The primary sources associated with the Khakhuli Monastery are Georgian manuscripts written in the monastery itself. The latest manuscript in the archives that was written in the Khakhuli Monastery dates to 1556 [11]. Based

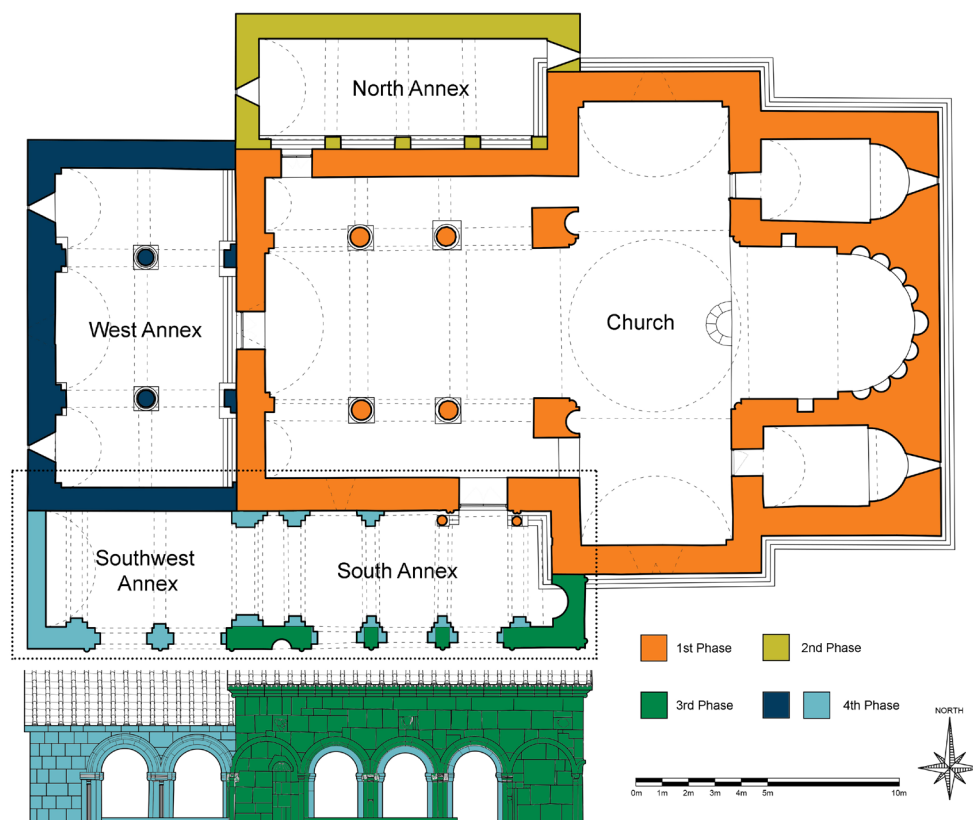


Figure 7. Period analysis of the monastic church of Khakhuli and its annexes (drawing by the authors, 2023).

on that manuscript, Djobadze (1992) asserted that the monastery was active until the middle of the 16th century. The Khakhuli Monastery and its surroundings came under Ottoman rule in 1549, but that did not bring an end to its activities. In the Detailed Tax Registers of Erzurum Province (*Erzurum Eyâleti Mufasssal Avârız Defteri*) from 1642, it is evident that four of the 23 non-Muslim homes in the village of Khakhuli belonged to monks. Furthermore, half of the Muslim households in the village were registered as *veled-i Abdullah*, meaning that they had converted to Islam (İnbaşı et al., 2014, p. 186). In light of this information, it is apparent that non-Muslims lived in the village and the monastery continued its activities until the middle of the 17th century.

There is no evidence of the monastery being used from the 17th to the 19th century. The conversion of the monastic church to a mosque dates to the second half of the 19th century. A mihrab niche was carved into the south wall of the southern cross arm of the building but no major interventions were applied when the church was turned into a mosque.

At the beginning of the 20th century, the building was opened again as a church and its condition and use were

monitored by Colonel N. Shugurov, a Russian officer who served in Khakhuli between 1915 and 1917, during the region's occupation by the Russians (Shugurov, 1916). Upon reconversion to a church, a wooden iconostasis was added to the apse and a wooden cross was added to the dome (Takaishvili, 1952). The building then functioned as a church for two years (1916-1918). According to Shugurov, the building, known as the Church of the Virgin Mary, was considered a holy place in the village and women who wanted to have children would go there to pray (Takaishvili, 1952). The monastic church was converted to a mosque once again after the Russians withdrew from the region in 1918 (Figure 8). During the Ottoman period, it was known as *Taş Cami* or "Stone Mosque." The Khakhuli Monastery gave its name to the village in that period, coming to be known as "Haho." The building is still respected as a sacred place today.

4. Conservation issues

The churches of Oshki, Ishkhani, and Otkhta Eklesia have reached the 21st century in structurally poor condition. Local residents used them for some time but eventually abandoned them. The monastic churches of Parkhali and Khakhuli have continued to



Figure 8. A wooden iconostasis was added to the church's apse in 1916 (Takaishvili, 1952); view from inside the church (photograph by the authors, 2021).

function as mosques to the present day, and thanks to locally funded repairs, they have survived in good structural condition. In the 2010s, the restoration of the monastic churches of Ishkhani and Parkhali was completed. However, failure to implement a signed protocol between Türkiye and Georgia suspended the restoration of the Oshki monastic church after it began in 2018. The monastic church of Oshki has remained closed since 2020, with no restoration activities taking place.

The monastic church of Khakhuli has survived in good condition to the present day. In the 1980s, the Khakhuli Monastery was registered as a historic structure together with other monastic churches in the region and conservation projects were planned. However, for various reasons, those projects were postponed for many years. While evaluations conducted in terms of the conservation of the Khakhuli monastic church are conceptually addressed together with other Tao-Klarjeti monasteries in the following sections, a structural evaluation is proposed specifically for the Khakhuli monastic church.

4.1. Conceptual approach

The heritage sites of Tao-Klarjeti are managed differently than other cultural assets in Türkiye as international protocols come into action here. Türkiye and Georgia are both legally responsible for the Tao-Klarjeti monastic churches. In Türkiye, under Law No. 2863 of 1983, Türkiye is obligated to protect these cultural monuments within its borders. In Georgia, Article 2 of Law No. 4708, which entered force in 2007, imposes responsibility on the Georgian state for the protection of Georgian cultural heritage abroad. The restoration of these buildings also entered the agenda within the scope of a cultural protocol in force between 2017 and 2021, in which the responsibilities that both states should undertake were defined (Republic of Türkiye Ministry of Foreign Affairs, 2017). The protocol was renewed at the beginning of 2024 with similar regulations; however, there has been no progress on restoration practices since the implementation of the new protocol. While the majority

of the legal framework has been established, challenges remain in the planning and implementation phase of the conservation work. Many of these buildings require urgent intervention but bureaucratic hurdles are causing delays, leading to wasted time and exacerbating the risk of architectural loss. Unless these obstacles are overcome, there will be no progress in preserving the buildings and the extent of the architectural loss will increase.

The modern function of the monastic churches in the region is one of the most controversial points in the context of conservation. It is also a sensitive matter within the framework of the relationship between Türkiye and Georgia. Restorations of the Ishkhani and Parkhali churches have been completed, but the physical condition of the buildings cannot be maintained due to their lack of function. As the buildings have not been in use since the restorations were completed, deterioration processes are still continuing. There is no Christian population left among the inhabitants of the region to ensure that these churches are used according to their original function; thus, the cultural agreements between Türkiye and Georgia do not include plans for the buildings to be used as churches. Keeping in mind that the sustainability of cultural assets must be prioritized, decisions should be made to re-function these buildings for socially or culturally useful purposes.

Although it was converted to a mosque in the early 20th century, the church of the Khakhuli Monastery was still recognized by local residents as a holy place dedicated to the Virgin Mary. However, since the early 20th century, the population mobility in the region has completely changed that perception. Reintroducing the churches in the area to local residents by highlighting their cultural value will raise local awareness and facilitate the acceptance and integration of this cultural heritage.

The monastic church of Khakhuli has survived better than other churches in the Tao-Klarjeti region due to its long years of use. A holy place of pilgrimage for Georgian tourists, the Khakhuli Monastery welcomes foreign

tourist groups for most of the year. However, in its current state, the monastery does not have the necessary infrastructure for meeting the demands of that tourism. While the monastery continues to serve its current touristic function, conservation works should ensure improvements in infrastructure that will enhance the experiences of visitors for religious or historic purposes. At the same time, the tourism planning and activities should respect and accommodate the religious beliefs and practices of the local population. The activities should be planned to sustain rather than erode heritage and traditions. Interpretations of and conservation plans for this heritage site should entail a multi-participatory approach in coordination with the local community (ICOMOS, 2022).

4.2. Damage assessment and intervention approach

To understand the material properties of the Khakhuli Monastery and the damages experienced by the monastic church, comprehensive architectural documentation was first carried out. Detailed drawings of the Khakhuli monastic church and its annexes were created using the up-to-date methods of 3D scanning and drone photography. With this documentation work, many unique details of the building's original construction were revealed. The sets of drawings for the survey, the analysis results, and the proposed conservation strategies were sent to relevant institutions in Türkiye. Documentation work is significant not only for this church but also for other monastic churches constructed with the same technique. The buildings in the region were not repaired over the years; therefore, they have largely preserved their original characteristics. Documentation of those original characteristics, from joint details to masonry and from the materials used to the workmanship, is important to prevent the loss of data preserved in these structures for centuries.

The Khakhuli Monastery is located between a rocky area and the streambed. A general examination of the monastic church revealed ground settlement, especially in the southern part,

due to ground differences between the northern and southern parts of the structure. Due to the ground settlement, a crack extending upwards from the ground has formed in the apse wall. The settling of the building has also caused the portico of the south annex to shift, creating an opening in the vault. In addition, the immediate environs of the building have been filled with earth as a result of landslides of the northern slope.

Another structurally problematic part of the building is the dome: there are cracks on the inner and outer walls from the drum to the dome (Figure 9). The south annex is also structurally problematic. The fact that it has been repaired many times shows that its structural problems have existed since the early times of the church.

Before beginning any structural repairs to the building, the different cracks should be monitored for at least a year. This monitoring phase will reveal how active the cracks are, allowing proposals for repair to be developed accordingly.

As a result of the cracking of the tiles over time, the mortar underneath has been exposed to external weather conditions, losing its binding properties over time and becoming fragmented. In the 1970s, the roof of the monastic church was covered with metal trapezoidal sheets. This temporary measure partially prevented water from further damaging the building, but many destructive weeds have grown in parts of the dome that are not covered with metal trapezoidal sheets. The weeds with longer roots have damaged the structural stability of the vaults. Weeds are also evident in the empty joint gaps on walls exposed to water (Figure 10).

Until conservation work begins, the exposed sections of the roof should be covered with metal trapezoidal sheets and the existing sheets should be renewed. From the beginning of the 20th century, temporary roofing has similarly been used in several historic churches in Georgia. During this preliminary phase of conservation, it is imperative to research and document the original roof cover.

Reconstructing original roof coverings is a costly process that requires ex-

tensive research on restitution. For this reason, temporary but well-planned solutions will prevent exorbitant restoration costs for these churches, which already face challenges in acquiring adequate funding. At the same time, such reversible interventions will ensure the preservation of original data (ICOMOS, 2003, Article 3.9).

From drawings and photographs taken in 1917, it can be understood that there were previously more frescoes in the building, some of which have been lost. The images depicted in the frescoes, particularly in the dome and apse, can be understood, albeit in a fragmented way, but if deterioration

processes continue at the current rate, the frescoes will be completely lost in the near future. One of the most important interventions to be made in the monastic church of Khakhuli is the elimination of the water exposure that has caused losses in the frescoes. The surviving frescoes urgently need to be consolidated.

Human factors have been influential in the deterioration of some parts of the monastery. Local residents have recounted several instances of illegal excavations at the monastery, resulting in the destruction of the floors and walls of the monastery that are not used as part of the mosque's prayer space.



Figure 9. Dome of the Khakhuli monastic church (photograph by the authors, 2021).

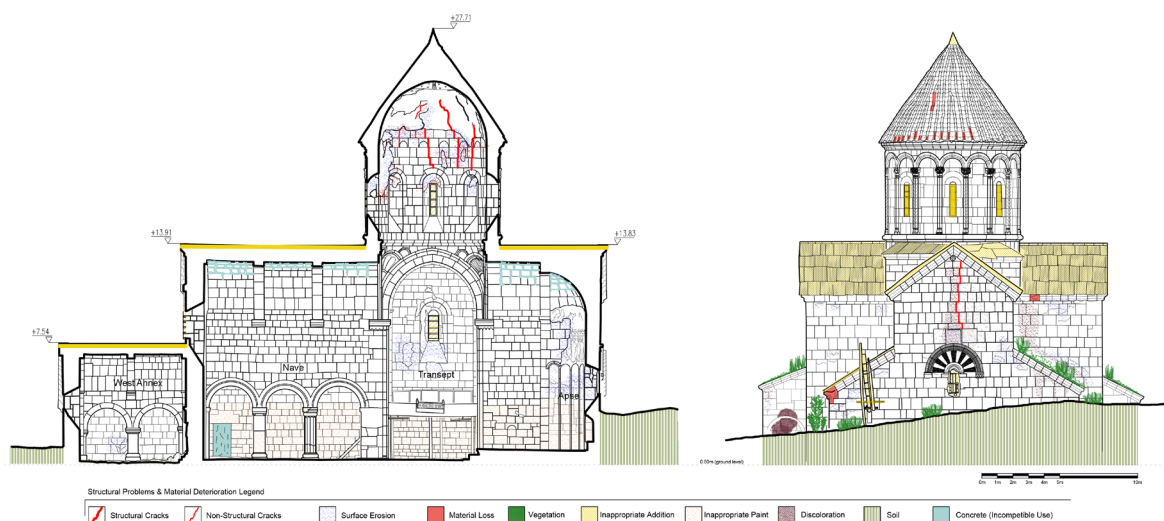


Figure 10. Damage mapping of the Khakhuli monastic church (drawing by the authors, 2016).

Stoves have also been used to heat the section of the monastery where the mosque exists. A suitable non-destructive solution should be found for heating the building.

Along with the structural reinforcement of the monastic church and its annexes, archaeological excavations should be conducted at the monastery. The foundations identified during the surveys and excavations should be conserved as a priority.

Since the gaps in the walls of the north, west, and south annexes of the church weaken the building structurally, these openings should be closed. The openings of the original entrances to these spaces should be used in the western arm of the church, as in its original state. Structural integration should be the primary goal for monumental buildings in rural areas. Small and effective interventions should be undertaken. Integrations leading to reconstruction and cleaning practices that completely remove the patina of the surface should be avoided.

In 2016, comprehensive documentation of the Khakhuli monastic church was completed. Subsequently, the structure underwent recurring on-site surveys. During expeditions conducted in 2020, 2021, and 2022, observations indicated that misuse continued in and around the church. Because of the moisture within the structure, fresco deterioration persisted. In the western annex of the structure, water-induced damage has progressed to an advanced stage.

5. Future scenarios as a conclusion

The structural problems identified in the monastic churches in the Tao-Klarjeti region can be prevented from causing larger problems by taking urgent measures. The structural problems of the buildings can be resolved with planned restorations. However, for these interventions to be sustainable, all monastic churches in the region should be managed with a specific program and priorities should be determined. Taking into account the political and sociological aspects of conservation, the interventions should be discussed and decisions should be made by multiple types of

participants. International platforms such as UNESCO (The United Nations Educational, Scientific and Cultural Organization) that prioritize the protection of cultural heritage are suitable mediators for overcoming political deadlock. In the following scenarios, the transboundary heritage potential of the monastic churches is emphasized and it is suggested that conservation efforts be carried out with this perspective.

5.1. Transboundary serial heritage

Transboundary serial heritage entails a set of cultural heritage sites that cross the borders of countries, representing a shared history, culture, or natural heritage. Transboundary serial heritage reflects the shared values of nations linked by geographical, cultural, or historical ties. It is an important tool for strengthening intercultural understanding and cooperation in a globalizing world. When the architectural heritage of the Tao-Klarjeti region is analyzed within the framework of transboundary serial heritage, it is seen to have potential in many ways.

Although the Tao-Klarjeti region today refers to an area within the borders of Türkiye, in the Middle Ages the borders of the region included some of the territory of today's Georgia. Similar monastic churches can also be seen across the border in Georgia as architectural examples of the same culture.

UNESCO's Guidance for Transnational or Transboundary Nominations states that nominations should be prepared and submitted jointly by States Parties (UNESCO, 2013). Such joint applications are encouraged by UNESCO and are excluded from application quotas. A description of transboundary serial heritage could be added to the cultural cooperation protocol signed between Türkiye and Georgia, thus expanding the possibilities for inter-country cooperation. The restorations completed in the region to date have required specialists and skilled stonemasons. The adaptation of the protocol between the two countries to the nomination process would ensure that the conservation activities are carried out on an international basis.

5.2. Social dynamics and function

The sociological characteristics of the settlement are among the issues that should be taken into consideration while re-functioning any religious cultural heritage site. The village where the Khakhuli Monastery is located, like other villages in the area, was inhabited by a certain proportion of Georgian Christians until the 17th century. Over time, they migrated or converted to Islam. However, as Shugurov and Takaishvili described, villagers still came to the church in the 19th century to make wishes and offer sacrifices. Today, villagers use part of the building as a mosque and maintain it with local resources. The Khakhuli Monastery never lost its prestige and recognition among local residents and the monastic church has survived to the present day in good condition thanks to its re-functioning as a mosque. Considering this point in conservation proposals, the continuation of the mosque function, even partially, will positively affect the villagers' perspective of the building and should be evaluated in terms of functional sustainability. At the same time, for the buildings to be accepted and protected by society, it is important to introduce the cultural assets located in the countryside to local people and to convey their importance.

5.3. Structural recommendations for restoration works

Located at the crossroads of the Caucasus and Anatolia, Georgian and Armenian monastic churches stand out as early examples of building techniques in Anatolia. The Khakhuli monastic church and other churches in the Tao-Klarjeti region have preserved their original features from the Middle Ages to the present day. They are therefore valuable for the information we can gain from them about historic construction techniques; this will help guide future conservation efforts.

The Khakhuli Monastery is one of the best-preserved examples of churches in the Tao-Klarjeti region. Considered together with its landscape, surrounding walls, outer walls, and chapels, it is not merely a monumental structure that stands isolated in a rural

area. On the contrary, the scope of its conservation should include both the monument and the larger landscape in which it is situated.

The Khakhuli Monastery has long since lost the structures necessary for it to be defined as a monastery. The refectory and library, for example, have not survived to the present day. As a result of surveys conducted in Bağbaşı village, it was determined that the surrounding walls of the monastery were originally wider. The use of the area between those walls and the monastic church as a cemetery allowed the remains of buildings in the area to survive to the present day under the soil. To locate and identify these remains, ground-penetrating radar measurements and controlled research excavations should be carried out in the area. Further research aligned with the discoveries presented in this study has the potential to provide more accurate data on the historical development of the monastery.

Despite its appearance in archival sources and other literature, the Khakhuli Monastery still has many undiscovered characteristics. Understanding its past interventions and changes provides valuable insights for future restoration strategies. It is important to shift the focus to the structure's historical interventions and concentrate on their reasons. Focusing on the causes of interventions rather than their symptoms is essential for understanding why interventions were needed in the past. As evidenced by the changes that have occurred in the southern annex, constant intervention is needed due to the instability of the ground upon which the building is located. Therefore, monitoring and ground surveys should be carried out before any comprehensive conservation efforts are initiated. Considering other monasteries in the region that are abandoned and derelict, it might be argued that the Khakhuli Monastery has fared relatively better because it has been in use for a longer duration of time. In general, making historical buildings usable is a recommended strategy for conservation.

To ensure the preservation of the original qualities of the building, irreversible integrations up to reconstruc-

tion should be avoided. Any actions taken to alter or restore a historical building should be carefully considered to prevent permanent changes that might compromise its historical value (ICOMOS, 2003, Article 3.9). Consequently, integrations should only be performed for the Khakhuli monastic church in the event of structural requirements. The needs of the church are currently simple but urgent; it must be transferred to the future with carefully planned conservation solutions. The restoration of the Bagrati Cathedral in Georgia started in the 1950s with minimal integrations, but with a decision made in the 2010s, the cathedral was reconstructed. Due to those irreversible restoration practices, the building was removed from the World Heritage Site list. Such an outcome should be avoided at Khakhuli.

One of the most crucial requirements of a scientific conservation project is documentation as an integral part of the whole process of conservation. During any future conservation campaigns, every aspect of the monastery, including parts revealed during restoration and archaeological excavations that possess original details from the 10th century, should be documented, analyzed, and inventoried (ICOMOS, 1990). Creating a database that includes all such information will help guide future interventions for the Khakhuli Monastery and other cultural properties in the region that were built with similar construction techniques.

The fate of these medieval churches, many of which currently lack a function, depends on negotiations between Türkiye and Georgia. The conservation of this heritage is a race against time, but the progress has been halted by bureaucracy and policy. This vulnerable heritage requires urgent conservation measures. The fact that the Khakhuli Monastery has survived to the present day does not guarantee that it will continue to survive in the future. For this reason, conservation work should be undertaken as soon as possible before irreversible problems arise.

Endnotes

[1] In Armenian sources, the name of the region is given as Tayk and Kharjk.

[2] Some of the famous clergymen educated at the Khakhuli Monastery include Basil of Khakhuli, Iovane Khakhulili, Davit Tbileli, Grigol Khakhulili, and Giorgi Athonite (Djobadze, 1992). The Virgin Mary icon produced in the Khakhuli Monastery is a noteworthy specimen of Georgia's medieval handicrafts. It was taken to the Gelati Monastery, near Kutaisi, in the 12th century and a triptych was prepared there (Kadiroğlu, 2009). It is now exhibited at the Georgian Fine Arts Museum of Shalva Amiranashvili in Tbilisi.

[3] T. Deyrolle made his trip to Trabzon and the Tortum region in 1869-1870, commissioned by the Geography Society of France (Deyrolle, 1876). His report and drawings are available in the French National Archives with archive number F/17/2955/B.

[4] The Oshki, Ishkhani, Otkhta Eklesia, and Parkhali monasteries were established in Tao. Oshki (Uzundere, Erzurum, Türkiye) and Ishkhani (Yusufeli, Artvin, Türkiye) are the closest monasteries to Khakhuli.

[5] According to documents in the Ottoman Archives, Ermakov was under suspicion and not allowed to prepare maps for military purposes (Republic of Türkiye Presidential State Archive. BOA, BEO/3326/249409 (Hijri: 03.05.1326) 03.06.1908)

[6] In Takaishvili's publication, this date was incorrectly given as July 8 (Arabidze, 2010).

[7] This article was prepared by the corresponding author from his master's thesis completed at Istanbul Technical University. The data obtained for the master's thesis were expanded within the scope of a doctoral thesis and compared with data from other monasteries. The surveys for each thesis were carried out with the permission of the Ministry of Culture and Tourism of the Republic of Türkiye (M. T. Ocak, 2016).

[8] The monastic church at Khakhuli was also referred to as a cathedral because the bishop's seat was there and the bishop was appointed there. This fact emphasizes its importance as a religious center.

[9] The experiments to identify the material characteristics of the tuff stone were conducted by Ayşegül Ağan

at the ITU Architectural Conservation Laboratory.

[10] Thanks to Irene Giviashvili and Zaza Skhirtladze for their guidance in the translation of the inscription.

[11] Manuscript No. S-252, Korneli Kekelidze Georgian National Centre of Manuscripts.

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