

The rupestrian churches in the monastery of Geghard, Armenia

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Abstract

The monastery of Geghard is of particular importance, as it is the only consecrated monument in Armenia to be half built and half carved into the rock. Probably founded in the first centuries its maximum expansion had in the thirteenth century, and from that moment it is as if it had almost crystallized in its ancient appearance. In the year 2000 UNESCO included it in the World Heritage sites. This multidisciplinary research group saw its great potential and took it as a case study, starting from digital surveying, in parallel with the historical-artistic investigation. In this paper we want to expose the first elaborations and the first observations arising from the recent survey campaign, the first cognitive stage prior to the subsequent 'in-depth' processing of the data.

Keywords: digital survey, rupestrian architecture, Armenian medieval architecture, Geghard monastery.

Introduction

The early results of the analysis and architectural survey of Geghard monastery, an entry of the UNESCO World Heritage Site list since 2000 (fig.1), are here presented in the context of a three-years long research on Armenian architecture led by Sapienza University of Rome. In particular, this paper focuses on those parts and ornaments that are the most ancient and are almost totally carved into the rock of the mountains on which the monastery was later built in a more traditional way. Some of the chapels show an interesting combination of parts that are cut in the rock and structures and complements added to consolidate and decorate. In addition to this, it is important to highlight that the ancient visitors used to carve familiar cross-shape symbols on both natural and artificial walls. In this sense, the paper is a combination of the different disciplinary approaches of the four authors, who dedicated themselves to the spatial experience of the main pilgrimage route, the form and role of the decorative motifs, the history of architectural interventions and the techniques adopted to survey the whole monastic complex and to represent the different qualities of its buildings.

A pilgrimage to Geghard

Geghard monastery is a sacred place. It is enough to observe the Armenians, but also some 'spiritually oriented' tourists, to feel it and to understand the behaviour to adopt, the step to keep, the tone of the voice, the ritual gestures to imitate. The holiness of the

place also extends to the rocky spiers around the monastery, which belong to the gorge of the Azat river. It is therefore in its spiritual and landscape context that the monastery must be described and analysed.

The monastery is a place of pilgrimage. The destination can be identified in the chapel carved into the rock which houses the sacred spring that generated the entire monument. As such, the path that winds along the northern side of the gorge, slowly proved by the passage of thousands of men over the centuries, is a device of extraordinary interest, precisely in relation to the natural context that surrounds it.

To understand the atmosphere that surrounds this place and marks its experience, it may be useful to underline an apparently secondary aspect, which also concerns other monumental and tourist sites in Armenia. Geghard monastery is lacking those elementary safety devices, from the regular steps to the balustrades, from the safety lights to the signs that guide visitors, which are usually found in Western monumental sites open to public. If from the point of view of the authenticity of the place and the 'visual pollution', this 'absence' translates into significant aesthetic results, from the point of view of the fruition, it may leave one dumbfounded. And yet, it quickly becomes clear that this absence is a fundamental key to understanding the very meaning of pilgrimage. Certainly, it indirectly evokes the difficulties that once the pilgrim had to face to reach the monastery. Not only. Together with the darkness of the interior, the sound of water and chants, and the aroma of incense, this absence contributes to a more intense bodily and spatial experience. Going up or down a steep staircase without the aid of a balustrade requires a mind presence that

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Fig. 1 – The Monastery of Geghard seen from South-East (photo M. Carpiceci).

modern architecture has disused and that instead recalls the challenges of the natural environment.

Most of the architecture is invisible from here. The monastery appears carved out of the same stone as the mountain behind it and almost blends in, making it difficult to tell where it begins and where it ends. Furthermore, the opaque walls of the outer enclosure hide the architectural jewels inside.

The atrium covered by a barrel vault provides an ‘ap-petizer’ of the refined stone construction technique of the ancient Armenian builders and leads to the main terrace, also paved in stone. After the gate, the road has disappeared, and a new direction is needed. A rock that emerges like an island from the stone floor seems to promise a safe harbour, a provisional destination. From here one understands that the low enclosure wall closes the rectangular terrace downstream, on three sides, while upstream the complex is divided into secondary terraces that climb the slope to a height of 10-12 metres. On the opposite side of the enclosure, another arched passage opens which orients the visitor steps but only for a few metres, until the stone building of the sanctuary which occupies the middle of the terrace, almost leaning against the northern slope. Yet the entrance to the *Gavit* or narthex, the real hub of the entire complex, is almost by chance. The portal on the western wall of the building is half-hidden by a

tongue of rock which forms a small corridor. It leads to a different dimension.

One goes down a step and find him or herself in a cubic environment dominated by the conical vault on four massive pillars. Opposite, the passage to the church opens, which appears to be a bright and seductive destination. The rest of this hall must be deciphered little by little, extracting information from the darkness that envelops the perimeter, interrupted only by three narrow and deep loopholes. In some cases, it is the light of the flames of the slender candles, invariably lit by the visitors, that reveals the fabric of engraved crosses that covers the walls, the complex geometries of the capitals or of the steps that lead to the cell of the bell tower, made up of a series of pieces fit together perfectly. The whole narthex – a curious hybrid between the cave and the building – is the result of a complex stereotomy game, excluding the northern wall, where the bare rock of the mountain reappears, and two secondary unexpected open up passages. These two small doors lead to the chapels carved into the rock. It is therefore necessary to leave once again the main axis of travel, which would lead to the church, to enter the cave with the sacred source, just left from the entrance. The pseudo-square space of the chapel is marked by eight semi-columns supporting a vault. The vertical skylight in the middle, makes the

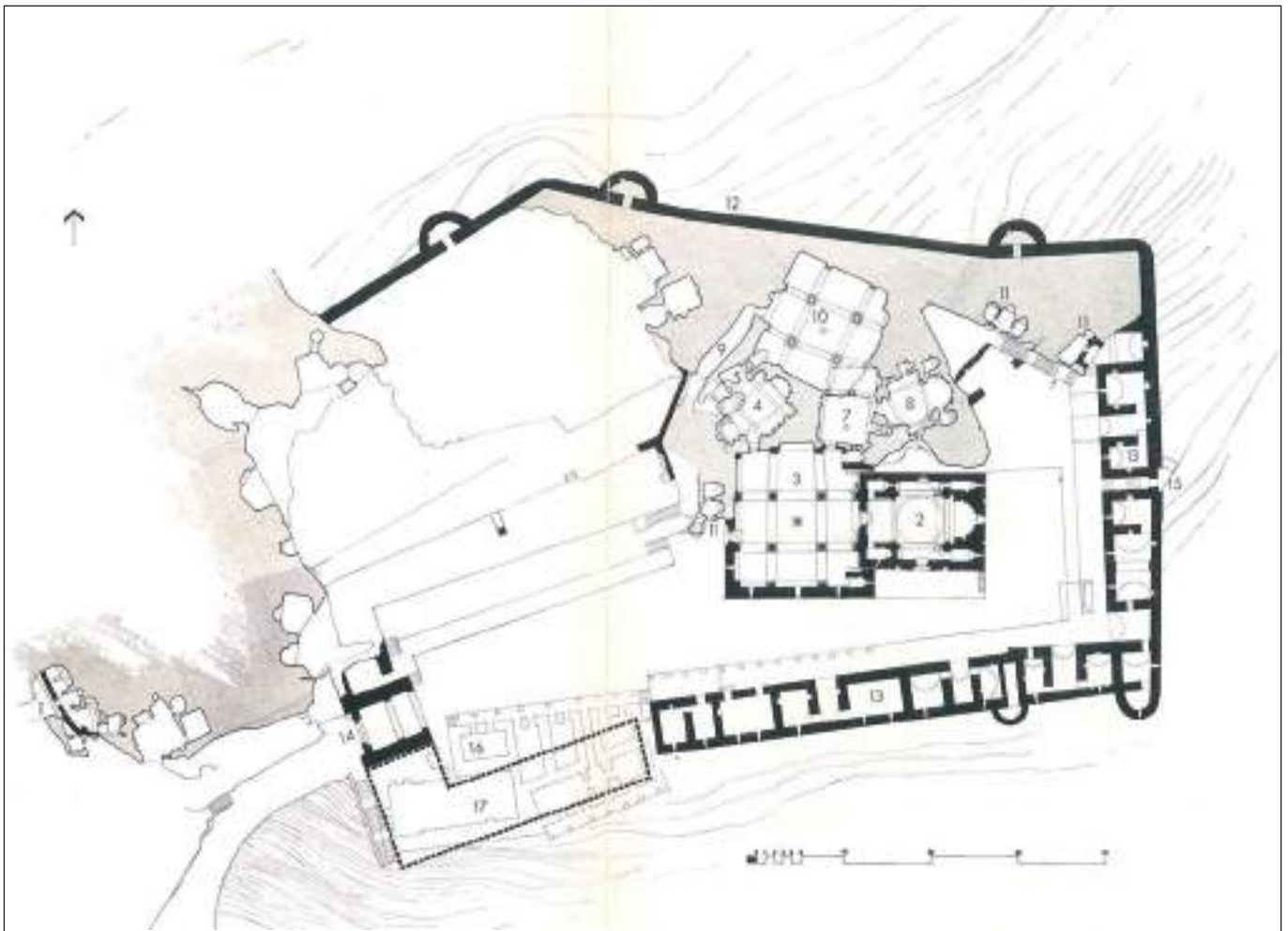


Fig. 2 – The Monastery of Geghard in 1973 (from Alpagó-Novello 1973).

niche with the source even darker. If in the narthex, the visitors still talk to each other, albeit in a low tone of voice, in the chapel, the sound of the water flowing from the source in a trickle engraved in the rocky floor imposes a silence that turns into devotion.

The other chapels, finely excavated and decorated, has no comparison with the atmosphere of this one. The space of the church, with its apse raised like a theatre stage, seems conceived rather for a mediated and symbolic representation of the sacred which inevitably does not have the ancestral power of the chapel. It stages the meeting of two different dimensions from several points of view. In architectural terms, the natural world, represented by the rock and the source, here meets the human world, represented by the architectural forms obtained through incision and excavation and by the structures added to consolidate and embellish the cave. Moreover, here subtractive, and additive architecture, concentrated in the decorative elements, meet and blend perfectly; and basically, even the additive architecture of the interiors – the narthex, the church, the retaining walls, or the enclosure – confirm to be in close continuity with the natural forms. Even the fact that the surfaces of the whole monastery were treated as a support on which to engrave crosses of every size and shape – the mark

left after the pilgrimage that connote individual families – expresses a willingness to welcome and form a collective memory that modern architecture, with its ethereal or stainless surfaces, seems to have forgotten.

The history

Geghard Monastery is located in a hidden place, dispersed near the gorge of the Azat River, in the historical region of Kotayk about 40 kilometres east of the capital of Armenia, Yerevan. The sacredness of this site, surrounded by “an austere and grandiose scenery of rocks”, dates back to pre-Christian times “when there was the worship of a spring in a cave” (Cuneo, 1988: 136). Hence the original name of Ayrivank (Cave Convent). Probably only in 1250 the convent took the name of Geghard, or Geghardavank (Convent of the Spear), because of the widespread legend of the presence of the Christian relic: the tip of the spear with which Jesus Christ was wounded. The monastery is also known by other names such as Convent of the Seven Churches, or Convent of the Forty Altars (fig. 2).

The testimonies of the historian Vardan Patmitch of

the thirteenth century, and the oral tradition, agree in attributing the foundation to St. Gregory the Illuminator (Alpago-Novello, 1973: 14). The presence of a real monastery is dated back to the 8th century. Between the 9th and the 10th century is dated the first looting, as well as the first important fire by the Arabs, which caused its destruction (Cuneo, 1988: 136). This historical phase is particularly remembered in the year 923, when Nasr – viceregent of the Arab caliph in Armenia – looted the properties of the monastery, destroying precious and unique manuscripts, and burning the entire religious complex. The earthquakes of that period did the rest. Thus, nothing remained of the original structures of Ayrivank, which included, in addition to places of religious worship, housing and services.

Around 1214 Prince Prosh began a reconstruction and excavation of the convent, under the guidance of an architect named Galdzak, as reported in an inscription. Of the same years (1215 according to another inscription placed on the arch of the entrance of the southern gate) is the construction of the main church, Katoghike, built thanks to the will of the generals of Queen Tamar of Georgia, Ivané and Zakaré and their sons Shahanshad and Avag (Alpago-Novello, 1973: 16). In the last two decades of the thirteenth century there were reconstructions and other important constructions of new buildings. The inscriptions date this work to 1283, commissioned by Prince Prosh, who died in that year. He had bought the convent from Avag, son of Prince Atabek Ivané, making it the sepulchre of his family.

In particular, he built the main gavit – west of the Katoghike – whose North-West sector is in communication with another space, called the first rupestrian church. From there you enter the Avazan, the basin, from which flows the miraculous spring. Also, the northeastern sector of the gavit is in communication with another room carved into the rock, dating back to 1283, also built by the architect Galdzag and used as a burial place of the princes Prošyan. From this burial chapel you can finally access the second church, coeval to the previous space.

At an upper level of the above-mentioned rooms, passing from the outside and entering through a narrow corridor, carved into the rock, there is the second gavit, dating back to 1288, said to Papak and Ruzukan, which, unlike the main one, is entirely rocky (Cuneo, 1988: 138).

The name of Prosh Khaghbakian and his actions have come to posterity thanks to the Armenian historian Mkhitar Ayrivanetsi (of Ayrivan) “who engraves on the wall of the cave, where he has long lived and worked, the name of the prince, asking that his memory be honoured forever” (Alpago-Novello, 1973: 16). Other records of the Prošyan dynasty date back to 1475, when two of their descendants are remembered: Father John, Bishop of Geghard, and his brother Stephen (Alpago-Novello, 1973: 17).

During the 17th century, new changes took place in the architecture of the convent. In 1655 “Soulé, son of Tgha, of the city of Tbilisi, financed a series of restoration works in the convent; the interior of the dome of

the main church is entirely rebuilt” (Alpago-Novello, 1973: 17). Unfortunately, on June 4, 1679, an earthquake struck the plain of Ayrarat and the convent was severely damaged. We can find the event narrated in the writings of Father Soukias: “he says that huge boulders, detached from the nearby mountains, fell into the valley, partially burying the convent and causing serious damage”. Only in 1696, “by Abbot David, they undertook reconstruction and restoration works” (Alpago-Novello, 1973: 17). The restoration work was continued by the vardapet Daniel of the royal family Prošyan, who succeeded Abbot David in 1705: this is remembered by a plaque placed on the main door of the convent.

Later the whole complex entered a phase of decline: the main church became a place of shelter for the Karapapakh nomads and their flocks, especially during the winter. It was not until 1828, that is after the passage under the Russian Empire, in the aftermath of the Russo-Persian War, that the monastery returned to its original activity thanks to some monks from the city of Echmiadzin.

After the First World War, in 1932, the architect T. Thoramanian, with the collaboration of S. Barkhoundarian and Taragros, “discovered and excavated the room located high outside the walls and built by the Mkrtitch in the years 1250-1290”. This hall collapsed completely in 1967 (Alpago-Novello, 1973: 17). Between 1969 and 1972 are dated the last restoration works that define the current state of the convent: “the western part of the courtyard is enlarged; a two-storey building that contained the monks’ cells disappears and that was located in the south-western side of the courtyard and in its place another one-storey one is built; numerous khatchkar are found and brought to light, which are placed with taste very doubtful on the walls of the secondary buildings made from scratch in the convent” (Alpago-Novello, 1973: 17).

The sculpted decoration of the Geghard monastery

To the eye of the art historian, the sculptural decoration of the Geghard monastery appears fascinating and extremely interesting due to the variety of its figurative repertoire. The extent of the sculptural apparatus is indeed remarkable, both outside and inside the church (Alpago-Novello 1973).

The external decorative apparatus is developed on some portions of the façade, on the main portals and their tympanums, as well as on the cornices and the drum of the dome. The reliefs alternate between floral and geometric motifs and representations of birds, lions, and other animals. Of particular interest is the sculptural group on the south façade, where the observer is attracted by the jutting and rather realistic representation of a lion attacking an ox. On the same façade is the southern portal of the church decorated with fine ornamental carving. The beautifully carved tympanum presents an original composition, as it is decorated with depictions of pomegranates and vine



Fig. 3 – A) Southern portal; B) Western portal (photo R. Zanone).

leaves intertwined with each other from which hang bunches of grapes. The pomegranate and the vine are in fact symbols of fertility, abundance, life, and the richness of God's gifts. These images are juxtaposed with those of two doves - decorative elements very common in 13th-century Armenian monumental portals - placed between the arch of the portal and its outer frame (fig. 3 - A). The tambour of the dome, on the other hand, shows a surface marked by a series of blind arcades characterised by carved reliefs at the apex of each arch and a very rich figurative repertoire; in fact, one can recognise various species of birds, human masks, various animal heads, small rosettes, and depictions of jar-like furnishings. These representations together contribute to an unusual sculptural frieze with a highly original composition; the lower portion of the drum, on the other hand, is characterised by a frieze composed of a geometric motif delimiting its diameter. This type of frame corresponds with the contemporary decoration of the dome of the Church of St. Gregory in Ani (year 1215) commissioned by the wealthy merchant Tigran Honents. The western portal, i.e. the entrance leading to the *Gavit*, differs greatly from the decoration of the south-

ern portal and is preceded by a series of steps; the portal is framed by a projecting cornice characterised by a series of half-columns inlaid with floral and geometric motifs ending in an ogival arch. The ornamentation of the tympanum shows a certain finesse in the carving of the stone and consists of floral whorls with petals of various shapes and intertwined branches with oblong leaves. Both in terms of the shape of the arch and the type of decoration, the portal is influenced by elements from Islamic art (fig. 3 - B).

The interior decoration of the Prošyan rock sepulchre is also relevant. The Prošyan tomb and the second rock church of St. Astvatsatsin were excavated in 1283 probably by the same architect Galdzag whose name is engraved at the base of the dome of the first room excavated to the west (Avazan) (Khalpakhchian, 1980). The sepulchre consists of two rooms: a larger one, which served as sacristy, and a second smaller one connected to the first by two arches (fig. 4 - A). The poor lighting has favoured the sharp outlining of the reliefs decorating the walls. Of interest is a high relief of primitive iconography carved on the north wall, above the arches of the smaller room. The composition features at its apex an ox head bit-



Fig. 4 – A) cave tomb of the Prošyan; B) decoration of the western wall (photo R. Zanone).

ing a ring to which are attached two facing lions with their heads turned towards the viewer. The tails of the lions end unusually with dragons, heads looking upwards. Just below the two animals is a carved eagle with half-opened wings depicted in the act of holding a lamb in its talons. These two animals depicted together probably represent the coat of arms of the family of the Prošyan princes (Der Nersessian, 1977). The reliefs on the eastern wall are equally interesting. The entrances to a small chapel and the church of St. Astvatsatsin have rectangular frames and are surmounted by a voluminous carved cross (fig. 4 - B). The chapel portal features carved reliefs with animal-bodied figures and human faces; these are harpy-like birds with crowned female heads, which are also often depicted as marginal miniatures in the pages of manuscripts. On the portal of the entrance to the church of St. Astvatsatsin, on the other hand, two human figures appear with slightly bent elbows, dressed in long robes and their heads surrounded by haloes. The hollowed-out interior of the church features numerous decorated and sculpted surfaces with rosette motifs and various geometric inlays; the main decorations can be found, for instance, on the lower and front wall of the chancel platform, which shows a decoration with a geometric motif of alternating

diamonds and squares. On the front of the staircase leading to the altar, a fairly realistic representation of a goat catches the eye, while on the sides of the chancel walls, two *khachkars* can be seen. Of particular interest is the one carved to the left of the apse of the altar, which is decorated at the base of the cross with two male figures; the first figure portrayed in profile holds a spear pointing downwards in his left hand, while the second appears in the act of blowing a horn raised upwards. Equally interesting are the decorations on the dome carved into the rock, the only source of light in this rocky environment. On the curved surfaces, pomegranates are again sculpted, like those seen in the outer southern portal, surmounting compositions of geometric and arabesque motifs. The interior of the drum is decorated with a series of arches with coupled columns and blind windows, making this part similar to the exterior decoration of the dome of the main temple.

Finally, the variety of sculpted decoration also includes the numerous *khachkars* carved or engraved on the rock surface of the various rooms of the monastery complex, both inside and outside. They appear richly ornamented and present a varied iconographic repertoire that includes geometric and floral motifs, but also human figures (Alpago-Novello 1977).

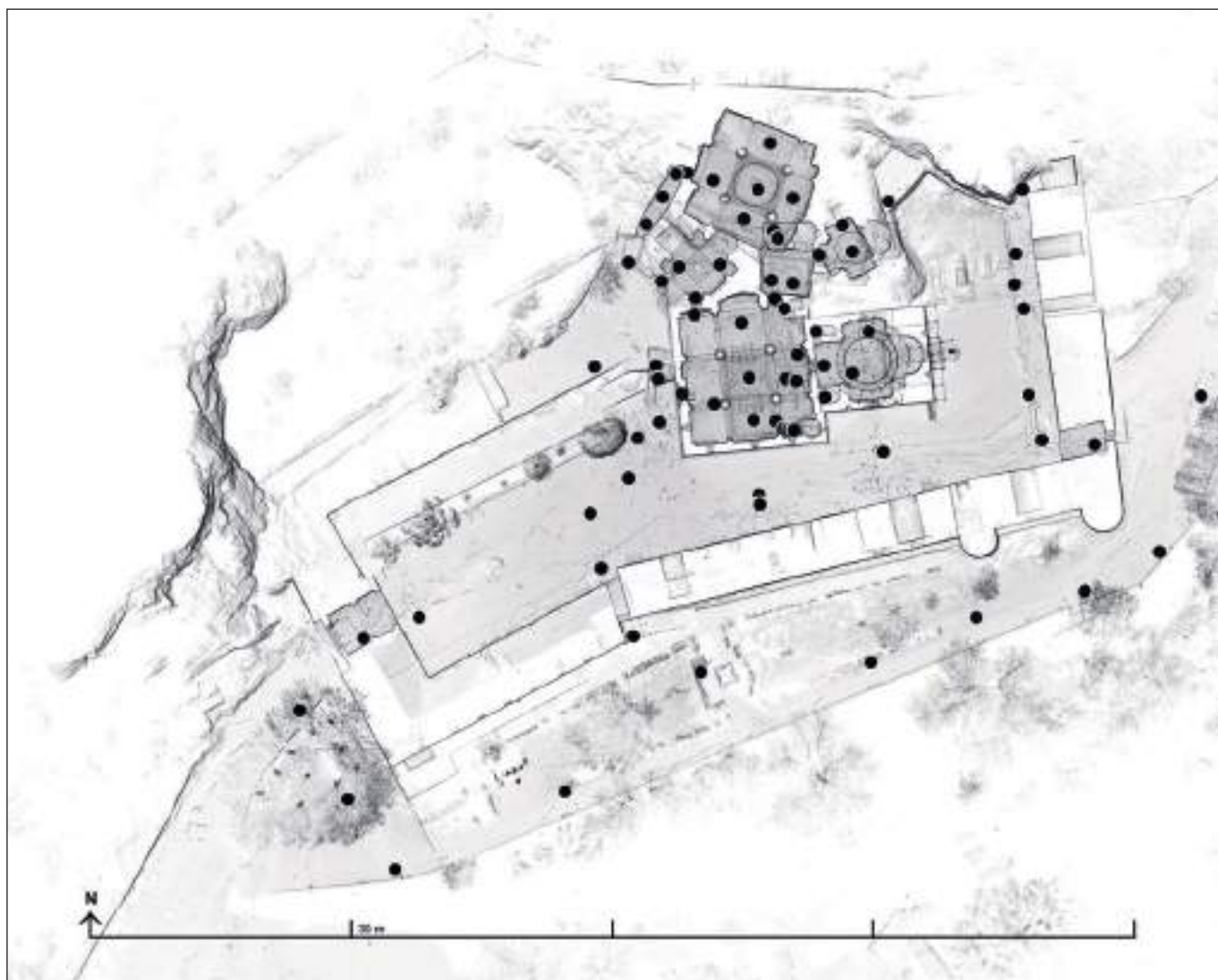


Fig. 5 – Geghard monastery, General plan of scans (processing M. Carpiceci).

Detection

From the first approach to Geghard's site, we realize its singular peculiarity. The rock is not only a scenic backdrop as in other Armenian situations, here it is an integral part of the architecture. The Monastery, in fact, is partly excavated and partly built. But the rock is not only a coexisting element, it is a generator of matter. The plateau, of volcanic origin, which constitutes this territory, has an altitude of about 2100 m above sea level, and the rivers over time have created gorges hundreds of meters high. These are tuffaceous rocks of the same age and conformation as those of Cappadocia, in which man has been able to dig environments functional to his existence. The South Caucasian region was around 1000 BC was occupied by the Urartean people of which cave cavities with external wall elements also remain (Piotrovskij, 1944).

As happened in different areas of the Middle East, already in the first centuries, the caves (hives and not), dug on the volcanic rocky fronts, may have been affected by hermit life. With good approximation we can hypothesize that our site was an ascetic place as early

as the fourth century, a period in which Christianity also spread at the 'political' level both in the West, with Constantine and Sylvester, and in the East with Tridates and Gregory.

At the beginning of the fifth century, with the birth of its own alphabet, the Armenian civilization was unified and consolidated. The oldest written records in the Geghard area date back to the seventh century. Perhaps the structuring of a real fortified monastery can be traced back to this period, even if the 'eremitic' area remains present and characterizing. The small ascetic population was composed of *idiorhythmic monks* like those of Mount Athos; that is, religious totally autonomous among themselves and also with regard to the life of the monastery. However, it could happen that someone from the monastery could decide to take refuge in complete contemplative isolation and move into this sort of mystical limbo.

The area in which Geghard extends is about 125 m by 80 m and the wall enclosure has an approximately rectangular shape, although the upper side has a median cusp that brings it closer to a pentagon (fig. 5).

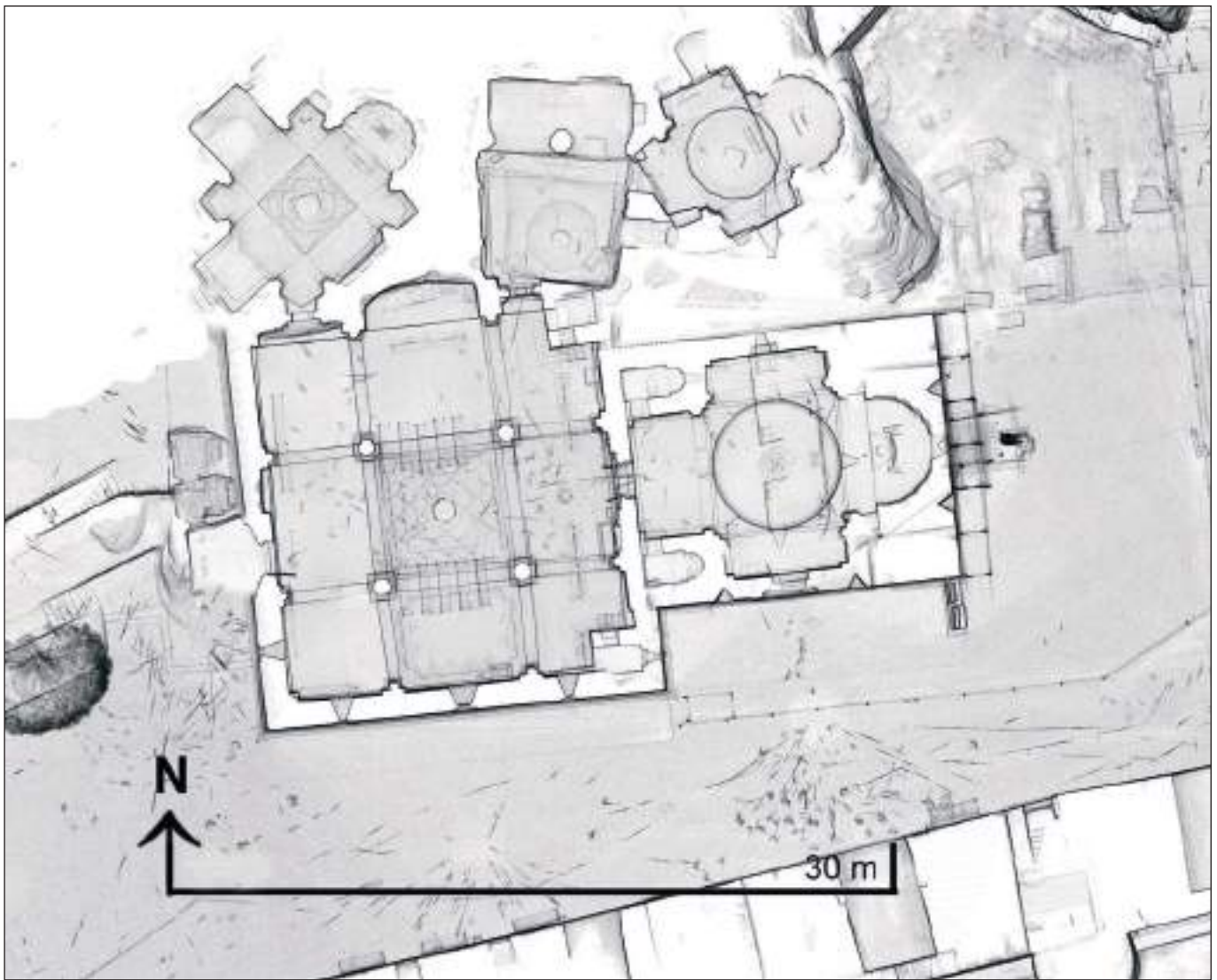


Fig. 6 – Geghard monastery, the central nucleus with the excavated and built rooms (processing M. Carpi ceci).

The longitudinal orientation is East-West like that of all the churches in the area.

It must be remembered, however, that this orientation never has, in Armenia, the precision of a compass. The reason could be identified by the fact that the direction was not determined at the spring and autumn equinoxes, but at the more general concept of sunrise and sunset with variability throughout the year. The imprecision is however greater in the excavated environments than in the built ones.

From the large arch to the west, you enter the courtyard of the monastery. At the centre of the courtyard/square we have the sacred core.

You enter from the gate of a structure built against the rock: it is the main *gavit*. This closed structure was a sort of sheltered meeting place that everyone could access. It has a tetrastyle square shape, therefore divided into 9 elements (or sectors): a *quincunx*. The location is west of the church (*Katoghiké*) and together they form the classic East-West oriented arrangement of most of the Armenian sacred nuclei

of the thirteenth century (fig. 6). The peculiarity of this *gavit* is that it is not only the pronaos of the *Katoghiké*, in fact its northern wall is rocky, carved into the rock, and on it open the entrances, precisely, to the excavated environments. The nine sectors have different shapes and sizes, since the central one is larger and therefore, we have square shape for the angular and rectangular for the medians. Even the covers also reflect the game of diversity. At the centre a pyramidal roof is enriched by complex construction elements that transform it into a vault with Arab-inspired stalactites and with an oculus of light in key with a small lantern. The South sector is also covered with a 'stalactite' decoration on a truncated pyramid with a rectangular base. The two corner sectors towards the *Katoghiké*, North-East and South-East, have an L-shaped surface because an element is inserted inside which there are two pairs of overlapping environments that limit the surface; the cover is therefore resolved with two-barrel vaults (fig.7). The North, West and South-West sectors are

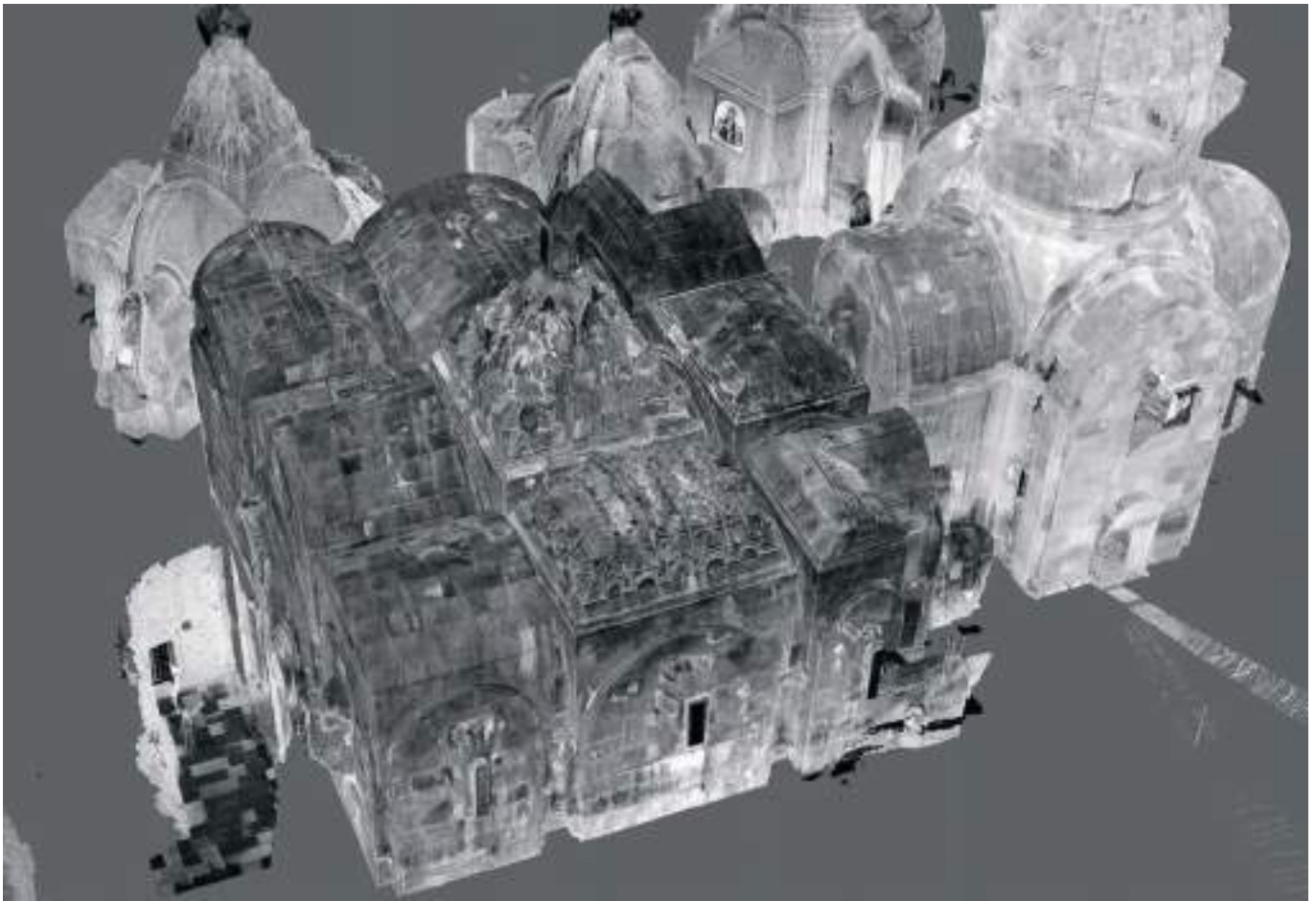


Fig. 7 – Geghard monastery, the main gavit, the point cloud of the intrados (processing M. Carpiceci).

barrel covered with a lowered direction. The East sector is covered in a pavilion always with lowered lines, while the North-West sector is covered with a round cross.

From the North-West sector you can access the rocky heart of the Monastery, the place that contains the miraculous spring. Inside, the apse hall has an orientation very close to the South-West North-East direction and a square cavity to the North-West houses the *Avazan*, the water basin with the source.

From the North-East sector of the *gavit* there is access to a pair of underground excavated rooms forming the mausoleum of the *Prošyan* princes.

Back in the courtyard of the monastery, we climb to a higher level and there, through a long corridor, we enter the interior of the mountain. After about ten meters, on the right there is an environment of perimeter shape and size very similar to the *gavit* of the lower level (fig.8). The covers, however, do not follow the setting of the main narthex; here we have for the central sector the ‘excavation’ of a dome on a cylindrical drum and the remaining sectors do

not have covers similar to canonical vaulted forms, limiting, mainly, to being a horizontal conclusion of intrados, accompanied by the hint of a shell on the walls.

The next action will be to elaborate correct classical representations (sections and elevations) and to analyse the infinite panorama of geometric decorations present and widespread on all architectural surfaces. The subsequent elaboration will consist in the elaboration of a model for contour lines (isoipse) with equidistance of 10cm, to represent the distribution of paths and rooms together with the current three-dimensional morphology. Subsequently, the main vertical positions for which to repeat the operation of Multiple Equidistant Sections (EMS) will be determined (Carpiceci, 2013; Carnevali, Carpiceci, 2020).

The EMS technique will also be applied to sculpted architectural surfaces, in which multiple sections can contribute to their best and objective definition. The equidistance will be calibrated according to the depth of the glyph and the projection.

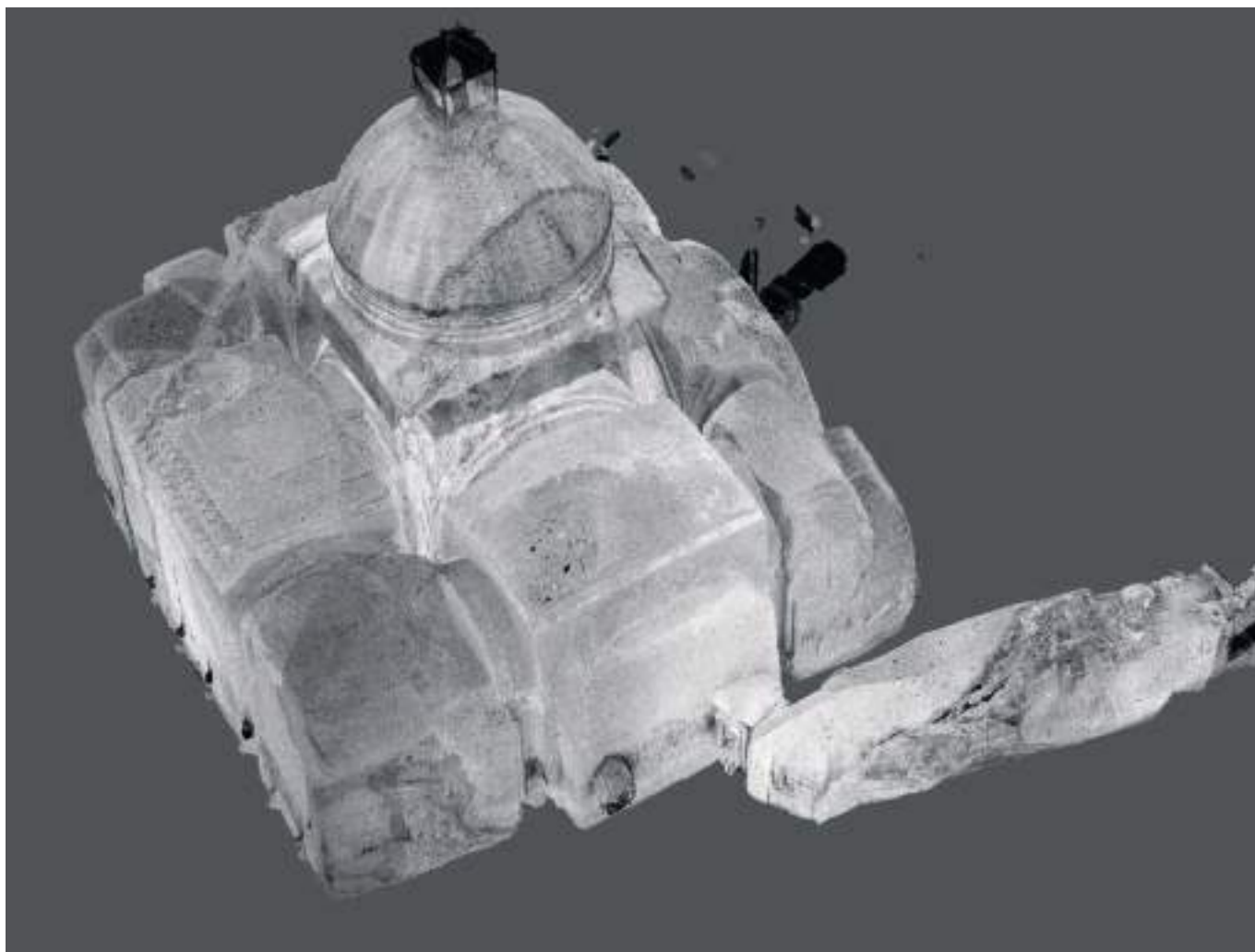


Fig. 8 – Geghard monastery, The rock gavit of the upper level, the point cloud of the intrados (processing M. Carpiceci).

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